THE VIC
PERSONAL
FINANCE

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PERSONAL FINANCE

1. INTRODUCTION

Personal Finance is a package of four programs designed to run on the basic 5K VIC computer with a tape cassette unit or disk drive.

The four Personal Finance programs are contained on two cassette tapes with one program stored per side. Part 1, Income and Expenses, is stored on the first tape on the side marked Personal Finance (Part I). Part 2, Spending Analysis, is stored on the reverse side of the first tape marked Personal Finance (Part II). The second tape contains Part 3 called Budgeting on the side marked Personal Finance (Part III). Part 4, Deductible Expenses, is on the side marked Personal Finance (Part IV).

The Personal Finance parts work together to store every financial transaction, both expenses, money spent and income earned, and to analyze spending, budgeting and deductible expenses.

Personal income and expenditures are a major consideration in day-to-day life. By keeping track of money spent on various categories of items, one better understands where income is going to pinpoint areas of excessive spending.

The VIC, an excellent tool for handling finances, relieves the tedium of manually recording all expenses and never makes arithmetic mistakes. VIC graphically illustrates money spent (expenses) and wages earned (income) and visually displays the information.

Personal Finance provides all the basic functions needed to do a thorough accounting of family finances. It records, changes, and deletes income and expense items in 16 general categories; it totals monthly and yearly expenses in any or all categories, and graphs a colorful spending profile; it provides a budgeting program to identify and clamp down on excessive spending; it totals end-of-year taxable income and expenditures; and it helps in preparing income taxes.

Personal Finance tracks finances on a monthly basis by entering and storing financial items by month, January, February, March, etc., and identifying each as an expense or income item, and identifying the month in which each occurred. Input all financial transactions into data files and use Personal Finance to provide comprehensive financial tracking system.

Part I, called Income and Expenses, is used to enter, list and record onto tape or disk every expense or income item to be included in personal finance information files. Indicate which items are tax deductible and type in a description of each expense or income item incurred. Part I builds financial records in the computer's memory. You can ADD additional items, or selectively EDIT items, or browse through and VIEW the items in the memory. Once satisfied with the income and expense items, use Part 1 to permanently SAVE the information in a file on cassette tape (or disk). The data stored on tape (or disk) can be reloaded into the VIC memory at any time for you to ADD, EDIT or browse through to VIEW it.

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Part II, Spending Analysis, summarizes and graphs a spending profile of the data entered in Part I. It allows you to enter personal finance data for up to 12 different months; and, it accepts multiple files for any or all months in any order. Part II analyzes spending in all categories on a monthly basis for any one month or for all months. It also analyzes spending on one category that you specify.

Part III is Budgeting which generates a monthly budget for each of the 15 expense categories. Part III compares actual spending against the budget for any single month, or for all months entered.

Part IV, Deductibles, handles the year-end chore of separating items from the non-deductibles. For each of the 15 categories it provides a total value for all of the deductible items in each category.

2. OVERVIEW
   Personal Finance provides all the basic functions needed to do a thorough analysis of spending habits.
   As you build your personal finance information Part 1 (Income and Expenses) lets you:
— Add, change and delete finance items for 16 different categories (15 expense categories; 1 income category).
— Review the finance items that exist in memory as you are building them.
— Save the finance information in a file and permanently store it onto tape or disk.
— Save each set of finance information under a unique file name by month and year.
— Stack multiple files onto one tape.

Most importantly, Parts II, III and IV allow you to enter any number of finance files of interest to you, i.e., any or all of the twelve months of the year and any number of data files per month.

Part II (Spending Analysis) lets you:
— Enter up to 12 different months with any number of finance files per month.
— Display the amount of money spent for each of the fifteen (15) expense categories and the one (1) income category for every file entered (Option 1).
— For any one month, calculate and display the amount spent in each of the 15 expense categories, the total amount spent, and the income. (Option 2).
— For all months that reside in memory, calculate and display the amount spent in each of the 15 expense categories, the total amount spent, and the income (Option 3).
— For each month that exists in memory calculate and display the money spent in one chosen category per month and the total amount spent for the category (Option 4).
— Graph a spending "Profile" bar chart in addition to seeing numerical results.

Part 3 (Budgeting) lets you:
— Create a new Budget file in memory (Option 4).
— Enter an existing budget file into memory from tape or disk.
— Modify an existing Budget (Option 4).
— Enter up to 12 different months with any number of files per month (Option 1).
— Select any month and compare it to the budget (Option 2).
— Use all months existing in memory and compare them all to the budget (Option 3).
— Save the budget file onto tape or disk (Options 4 and 5).
— Use bar graphs in addition to numerical results.

Part 4 (Deductions) lets you:
— Enter up to 12 months of finance data with any number of files per month (Option 1).
— For each category calculate the deductible amounts versus amount spent.
— Use bar graph in addition to numerical results.

The two basic things you need to do to get started with Personal Finance are:
1. Read this manual thoroughly and have it next to you as you run the programs.
2. If using cassette storage then have a set of one or two blank cassette tapes available. If using disk storage then one diskette is adequate for the files.

The most convenient way to use Personal Finance is to enter data on a regular basis, such as weekly or bi-monthly. Prior to each session:
1. Collect all income and expense receipts, checkbook, etc.
2. Collect your data tapes or diskette for the current month.
3. Avoid duplicate entries by marking each receipt indicating as it is entered into the computer.

3. GENERAL RULES
The general rules presented below enable you to easily and correctly enter data and operate the four Personal Finance programs. Since these programs were designed to run on the smallest VIC it is very important that the directions for entering data and operating the programs be followed EXACTLY as stated. The charts on the following pages summarize the rules to be followed in order to enter your finance data correctly.

In some cases entering incorrect data (such as typing in letters when the program requires numbers), does give an error message. For example, REDO FROM START is an error message indicating to reenter the data correctly. Other types of errors (such as entering incorrect or ambiguous information) go unnoticed by the programs and the accuracy of the Personal Finance reports will suffer. The programs allow correction of improperly entered data. The error messages are listed in the back of this book.

DISK OPERATION RULES

The Commodore VIC single Disk Drive can be used to store your inventory items on floppy diskettes. All directions presented herein are the same for both disk and tape storage.

TAPE OPERATION RULES

The rules for using cassette tapes to store the Personal Finance data files are as follows:

1. To store more than one file on a tape space forward completely past any existing file or files that reside on the tape, then start recording. Care must be exercised to avoid unintentionally overwriting an existing file on tape.
2. Delete a file or files on a tape by recording over them.
3. Label each tape or disk showing the file names and their creation dates.
4. As each file is created and added to a new or used tape, add the file name and date onto the tape label.
5. When LOADing a file of inventory data into VIC memory, position the tape in front of the inventory file and not at some point past it; otherwise, the data file will not be found.
6. The rules for the standard home recording of music selections onto tape apply for the storing, adding and overwriting Personal Finance data files.
7. In order to store or record a file onto a tape it is of utmost importance to push the RECORD and PLAY buttons IN THE CORRECT SEQUENCE. If the buttons are pressed in the wrong sequence or incorrectly ALL DATA IS LOST. The data is not recorded on tape and it is erased from memory. You will have to retype it all and try again. The correct sequence to store data onto tape is to:
   a. Depress and hold down the RECORD button.
   b. While still holding the RECORD button down, then simultaneously depress the PLAY button.
   c. Once both buttons are down and the recording is taking place then you can safely leave the buttons alone.
8. Exercise care when adding a file to the end of a string of files on a tape. In this case do not rewind the tape until after the newest file has been stored or else it can unintentionally overwrite an existing file.
9. It is good practice to "backup" files by periodically making duplicate copies of them.

MENUS

Menus are provided to show the options that are available for use with each program. The appropriate menu is displayed automatically for each part. Select the operation by typing its assigned option number and then pressing the RETURN key.

Table 1. PERSONAL FINANCE

	MENUS	
	Title	**Menu**
Part I	Income & Expenses	1. Add items
		2. Edit items
		3. View items
		4. Save items
Part II	Spending Analysis	1. Another Month
		2. Sum Any Month
		3. Total Months
		4. Sum Category
		5. End
Part III	Budgeting	1. Another Month
		2. Sum Any Month
		3. Total Months
		4. New Budget
		5. End
Part IV	Deductions	1. Another Month
		2. Display Expenses
		3. End

DATA ENTRY RULES

Each Personal Finance item is described using five pieces of data:

— Date (day of month) — Category
— Amount — Deduction
— Month — Description

The following rules must be followed whenever you either enter data (finance items) using Part 1 or analyze your personal finances using Parts 2, 3 and 4.

1. Be consistent in entering and abbreviating names of months. If you identify your months using capital letters, then use capital letters for all categories. To enter monthly files correctly, month abbreviations must be exactly the same for the same months. For example these are not the same: Jan - JAN - jan.
2. Select one abbreviation for a month and use it consistently. It is not wrong to use different abbreviation forms for different months. However mixing the way you enter one month's name runs the risk of not reading all of that month's files into memory when entering all the files.
3. Select only one of the 16 categories listed below. Always use the two (2) capital letter code to represent a category.

Category Name	Code	Category Name	Code
Auto	AU	Insurance	IP
Mortgage/Rent	MR	Medical	MD
Clothing	CL	Savings	SA
Entertainment	EN	Taxes	TX
Education	ED	Utilities	UT
Food	FD	Miscellaneous	ZZ
Gifts	GI	Vacation	VA
Household	HH	Income	IN

4. NOTE: Parts I, II, III and IV use the monthly data files created in Part 1. Each Part asks for the month and year of the data. In order for the programs to find this data, enter the month's name EXACTLY as it was entered when the file was created. For example, if the month was entered as "Jan" in Part I, yet in Part II specify the month name as "jan", Part II isn't able to find the data (since the letter J was capitalized in Part I and not capitalized in Part II). Month must be named consistently.

5. NOTE: If you need more than one data file for a month be sure that ALL DATA FILES for that month have the same first three characters and the same form for that month's name.

6. The fourth character of the month name is ignored by the programs except when loading files. This lets Parts II, III and IV sum multiple data files into an individual's month's total.

7. An amount entered as whole dollars and no cents is displayed as whole dollars and zero cents. The cents value of 00 is always presented on the display. For example,
amount entered: 298
amount displayed: 298.00

8. A whole dollar amount with no cents can correctly be entered in any one of the following ways:
379.00   379.   379
   In every case the three forms are stored as 379.00 and displayed as 379.00 with the cents field shown even when it is zero.

9. When Part 1 has terminated, the screen displays READY. Restart Part 1 by typing RUN and pressing the RETURN key. The same is true for Parts 2, 3 and 4. However, the only part that can be restarted is the one that just terminated because that is the only one that currently exists in memory. To RUN any other part, first LOAD it into memory by following the procedures described under LOADING.

10. If at any time you mistakenly push the RUN/STOP key to recover:
   1) Push RESTART button
   2) Type RUN
   3) Push RETURN button

11. If letters instead of numbers are entered into the amount field the error message displayed is: ? redo from start
                                             Amt?
Recover reenter the amount field value.

12. If the amount field is omitted the item is invalid and the following error message appears: Error
                                        amt
13. If you omit the current date then the menu automatically returns.
14. If you omit any of the following fields: Month
                                            Deduction
                                            Description
    then blanks are stored in that field.
15. If the Category field is left blank that category is automatically filled in with ZZ, Miscellaneous.

LOAD AND START PART I/II/III/IV

The following procedures LOAD the Part I, II,III or IV program into memory.

1. Set up the VIC 20 computer, TV set and Commodore cassette recorder (or disk).
2. Place the tape in the recorder with the appropriate label side up.
3. Press the REWIND key on the recorder.
4. When the tape stops moving, press the recorder's STOP key.
5. Type the word LOAD on the VIC's keyboard and hit RETURN. For disk, type LOAD followed by one of the following: "PF1DISK",8 or "PF2DISK",8 or "PF3DISK,8 or "PF4DISK",8. Then press RETURN. This LOADS Part I, Part II, Part III, or Part IV, respectively. (Load only one at a time).
6. The message PRESS PLAY ON TAPE appears on the screen.
7. Press the PLAY key on the tape recorder.
8. The word OK and SEARCHING appear on the screen and the tape moves.
9. After a few seconds, the VIC displays FOUND (filename) and the word LOADING.
10. When the VIC has completed the loading process the word READY is displayed.
    The total accumulation of messages are shown below:
       PRESS PLAY ON TAPE
       OK
       SEARCHING
       FOUND (filename)
       LOADING
       READY
11. To "run" the program, type the word RUN on the keyboard and hit the RETURN key. The Personal Finance part (I, II, III or IV) starts and informs you that it has started by displaying a message on the screen for 5 seconds. It automatically displays a menu of options from which you select an option to be performed.

IF YOU HAVE TROUBLE LOADING
1. Type the word LOAD and hit RETURN again. (There is a second copy of the program on the same side of tape).
2. Try moving the Datasette so the cord is FULLY EXTENDED (to

minimize the possibility of interference from your TV or monitor. Placing the Datasette on or near some sets may cause interference).
3. Turn the VIC off, then on. Rewind the tape and try again.
4. Check the troubleshooting chart in the VIC manual.
5. See your Commodore VIC dealer.

PART I (Income and Expenses)

Part I, Income and Expenses, enters all of the income and expenses for each month, categorizing each in one of the 16 categories defined below. The category is identified by a two character code made up of 2 capital letters. The category list is included below. The first fifteen categories are expense items, the sixteenth item is for income:

Table 3. Category Names and Codes

Category Name	Code	Category Name	Code
Auto	AU	Insurance	IP
Mortgage/Rent	MR	Medical	MD
Clothing	CL	Savings	SA
Entertainment	EN	Taxes	TX
Education	ED	Utilities	UT
Food	FD	Miscellaneous	ZZ
Gifts	GI	Vacation	VA
Household	HH	Income	IN

Each financial item is called a RECORD. Each record you enter contains six pieces of data, called FIELDS. The fields in each record are presented in Table 1 which describes the allowable contents of each field and shows correct examples.

Table 4. Personal Finance Record Contents

Personal Finance Record

1. Date (day of month)
2. Amt (amount)
3. Month (month item incurred)
4. Cat (category code)
5. Ded (deduction)
6. Des (description)

THE MAXIMUM NUMBER OF RECORDS PERMITTED IN MEMORY AND/OR IN A FILE AT ANY ONE TIME IS 25.
However, if you constantly use the maximum number of characters for the description field you may receive the message:
Filled
ready.
This means that memory is full even though less than 25 items/records have been entered into this file.
Part I keeps track of the available memory and forces you to save the items when the memory is full. This prevents memory from overflowing and losing records. When the memory is full you are automatically placed into the SAVE option and you must permanently save your file onto tape or disk in order to proceed.

To record and save more than 25 items per month use as many data files as are needed for any month. However, be sure to write the year on every tape label and it is good practice to list each month name contained on the tape.

To use disk storage with multiple files per month, keep the first three characters of the month name identical and use a fourth character to identify each file in the series.

Example: Jan1 Jan 2 Jan3

Part 1 allows you to ADD new items to any data. EDIT, REVIEW and save those items on your storage unit. Enter and EDIT finance records until completely satisfied, then SAVE this information for use by Parts II, III and IV (Spending Analysis, Budgeting, and Deductions).

PART I GETTING STARTED

Load and run Part I (Income and Expenses) as described previously. The screen displays the following information for 5 seconds:

PERSONAL FINANCE

PART 1: Income & Expenses

Part I first asks questions about the identity of the file to start processing. Use Table 5, Part I Startup, to assist.

MENU OPTIONS (PART I: Income and Expenses)

The Part I Menu Options are as follows:

1. Add items
2. Edit items
3. View items
4. Save items

Select the operation to be performed by typing the Option number and then pressing the RETURN key. Each of these operations is described in detail in Table 5, Part I Startup, and in Table 6, the Part I Summary.

Table 5. PART I STARTUP

Month Name	Year		New Month	Examples
4 characters or less	1 to 4 characters	y	Start a new file for a new month	start "Feb" after all "Jan" data has been written into
If you enter more than 4 characters only the first four (4) are used and the rest are ignored.	You can use numbers or letters		Start a new file for a current month	"Jan" and saved. Start a second data tape for January called "Jan2".
You can use numbers or letters Suggest 3 letters for the month, and make the 4th character either blank or a digit to represent the file or tape counter.	Suggest using either 2 or 4 digits Example: 82 1982	n	EDIT or ADD to an existing line	The current month is "Mar" and the existing "Mar" file contains only 7 entries. If one of these entries contains a mistake it can be "EDITed". If you have more March data you can ADD more entries (up to 25 are allowed) to this file.

Part 1 (Income and Expenses) starts running as follows:

1. Part 1 asks you to identify the month of the data. VIC displays: Month?
2. Enter a month using 4 characters or less and press RETURN.
3. The VIC responds by asking for the year: Year?
4. Type in the appropriate year and press RETURN.
5. VIC verifies that the month and year are correct: OK (y/n)? NOTE: Whenever the program asks "OK (y/n)?" it is allowing you to correct data just entered. Any response other than a "y" will be interpreted as a "no", and you are asked to reenter the data.
6. If the month and year is spelled wrong, type "n" and press RETURN. This enables you to enter the file name again. Keep repeating this until month and year are spelled correctly.
7. If the file name is spelled correctly, enter "y" and press RETURN.
8. The VIC next asks if the month entered is initiating a new month

     New Month
     OK (y/n)?

10. To start the first time or to start a new file you must enter "y" and press RETURN.
    The VIC then displays the following Part I Menu:

          Menu
          1. Add items
          2. Edit items
          3. View items
          4. Save items

    If you enter a "y" because this is your first time or because you are starting a new file then select Option 1 and start entering your financial records. Skip past the remaining steps.

11. To enter a previously prepared personal finance data tape type "n" and press RETURN. This loads the data file from the tape (or disk) into memory and displays the message:
     Prepare the
     (Month) (Year) file
     Hit a key

12. Insert the data tape or disk into your storage unit. If a tape cassette is used rewind the tape to the beginning.

13. Depress any key on the keyboard to start the tape LOAD process and display:
     searching for (filename)

14. Once the file name is found the following appears and the loading of the financial records from tape (or disk) into memory commences: found (filename)

15. Let tape motion continue uninterrupted. Tape motion stops by itself. After the data is loaded into memory the Menu reappears on the screen.

ADD ITEMS (Option 1)

The selection of Option 1, Add items, causes VIC to display the following:

Auto	AU
Mortgage/Rent	MR
Clothing	CL
Entertainment	EN
Education	ED
Food	FD
Gifts	GI
Household	HH
Insurance	IP
Medical	MD
Savings	SA
Taxes	TX
Utilities	UT
Misc.	ZZ
Vacation	VA
Income	IN
ITEM #1	
Date ?	

Figure 1. ADD Display

To add an item, enter the five fields listed for each item (record). The five (5) fields are listed in the order that each should be filled:

— Date (day of month)
— Amount
— Month
— Category
— Deduction
— Description

All data entry rules apply when ADDing items. Part I automatically keeps track of and numbers the items and displays this as "Item #". The item number for each record is displayed with each record. In addition, you are asked: DEDUCT? If the item is tax deductible, respond "y", otherwise respond "n". The program takes you step-by-step through each field to be filled-in. After all fields have been entered, you can correct the entry before proceeding.

To exit from the ADD option, just enter a zero when asked for the date. Exiting causes Part I to display all items currently in memory followed by the Menu.

EDIT ITEMS (Option 2)

Change or delete any item by choosing Option 2. EDIT automatically displays each record and asks: "Delete, Change, End, Next". If the item displayed is not the item to be changed or deleted type "n" for Next, to display the next item. If this is the item to be changed or deleted, type either "c" for change or "d" for delete. After changing or deleting that item, the program continues in the EDIT mode.

NOTE: To change an item, reenter all five fields, even if just one of the fields requires a change.

To end the EDIT option, type "e", which terminates Option 2 and displays the Part I.

VIEW ITEMS (Option 3)

Review all the items at any time by choosing Option 3, part 1. VIEW displays all the records on the screen, six at a time. If one has a VIC printer you can press function key (f2) whenever the hit-a-key prompt is displayed to print the entire screen (6 items).

After the last item in the memory has been displayed the Menu returns. Figure 2 presents the format for data displayed using VIEW, Option 3.

SAVE ITEMS (Option 4)

Save Items, Option 4, saves all of the items from memory into a data file for use by all four Personal Finance programs. The file is automatically named using the month and year entered at the start. The (Month) and (Year) used in the file name are the month and year entered upon Part I startup, meaning that Option 4 automatically saves the month and year as the filename along with the data items.

Save the items into a file at any time by selecting Option 4, which stores all the items into a file named using the (Month) (Year) in which you are working. An automatic forced SAVE of the items occurs if the memory gets full.

Part I ends after saving a file. To restart Part I simply type RUN and press the RETURN button.

The following lists the steps to be followed to SAVE personal finance items (records) on tape or disk. Use cassette tapes or diskettes to record (save) and play back ("enter") data.

The steps shown below apply to both tape and disk.
1. Option 4, SAVE, displays:
   Prepare the (Month) (Year) file
2. Depress any key on the keyboard and press RETURN.

PART I VIEW (Option 3)

(Month)	(Year)	items:
(date)	item #1	
YY	(description)	xxxxx.xx (Month)
(day)	item #2	
YY	(description)	xxxxx.xx (Month)
(day)	item #3	
YY	(description)	xxxxx.xx (Month)
(day)	item #4	
YY	(description)	xxxxx.xx (Month)
(day)	item #5	
YY	(description)	xxxxx.xx (Month)
(day)	item #6	
YY	(description)	xxxxx.xx
	View Display	(Month)

NOTE:
For any month and year that you select every category is listed on the screen, 6 at a time.

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Legend
Month — The name of the month identifying the file.
Year — The year identifying the file.
Day — The day of the transaction; 1 thru 31
Item description — 10 character description of the item
xxxxx.xx — price/amount of the transaction
Month — Name of the month stored in this transaction's record
YY — Category abbreviation; 2 capital letters

Figure 2. PART I VIEW (Option 3)

3. The additional message appears: Press record and play.
4. It is most IMPORTANT that you press the correct tape cassette button IN THE EXACT ORDER SPECIFIED in steps 4, 5 and 6. If you fail to press the buttons as stated your inventory file, data is not recorded onto tape correctly and the copy in memory is erased. You have to completely re-enter all of your data if you make a mistake on this recording step.
5. Depress and hold down the "RECORD" button. Keep holding the RECORD button down.
6. Simultaneously, while holding down RECORD, depress the PLAY button.
7. When both buttons are engaged remove pressure from them.
8. Recording starts and the display screen contains the following:

    Prepare the
    (Month) (Year) file
    Hit a key
    Press record & play on tape
    ok

9. After SAVE terminates, the screen clears and the following messages appear:

    Saved
    ready.

  The new file exists on the tape (or disk) and Part I terminates. The VIC is ready and available to run another program. To restart Part I enter RUN and press RETURN. Rerun Part I to create more files, add to or edit existing files. Or, LOAD Parts II, III or IV using the file just created. Reload the tape (disk) file back into memory to use it.

Table 6. PART 1 Summary

PART I

Option Number	Name	Meaning	Information to be supplied Prompts	VIC Prompts by asking	field input minimum	field input maximum
1	ADD	Add an item to create a new file or to add to an existing file. Enter the data in the order that VIC asks for it. Follow the rules for each field input.	Date of month	Date?	value / 1	value / 31
			Amount	Amt?	value 0	value 32766.99
			Category designation	Cat?	2 characters in capitals from the set of 16 allowed categories	
			Deduction	Ded?	1 character:	y or n
			Description	Desc?	1	10
			Correctness	OK (y/n)?	1 character	y or n
2	EDIT	Edit to delete or change	VIC asks you		Keyboard input	meanings
			Delete Change EndNext		D	delete the item
					C	exit; no more editing return to menu
					E	change the item; then reenter all 5 fields
					N	do not edit this item; show
3	VIEW	View the items in memory displayed on the screen 6 at a time until all are displayed	Items displayed		VIC displays: (Month) (Year) items: day (description) xxxxx.xx YY (month) where xxxxx.xx is the amount YY is the category identifier	
			(Month)	the name of the month in memory; taken from the file		
			(Year)	name the year associated with the date in memory; taken from the file name		
4	SAVE	Save the items in memory onto a permanent storage tape or disk file.	Press the RECORD and PLAY buttons when directed	VIC displays Prepare the month-year-file Hit a key Press record & play on tape ok	When the data saving is finished the screen charc. VIC displays: Saved .	
					ready Enter RUN to restart Part 1.	

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PART II

Part II starts by asking the identity of the personal finance file to be read then reads the specified file and asks if the Profile for that file should be displayed. Part II can either display the Profile or skip it then display the Menu.

PART II MENU OPTIONS
1. Another month
2. Sum any month
3. Total months
4. Sum Category
5. End

OVERVIEW OF PART II

Part II accepts as input up to twelve different months with any number of files for each month. Part II presents a graphical presentation of spending habits showing all out-of-balance spending categories. Part II summarizes monthly and year-to-date totals for all categories. In addition, Part II sums the total amount spent for any one category over the month or months existing in memory.

Regardless of the number of months in memory a previously entered month can always be reviewed. If more than one data file exists per month, Part II automatically calculates totals using all data files for that month (providing all the tape files have the same first three characters of the month's name on them).

ANOTHER MONTH (Option 1)

Option 1 enters data from tape (or disk) to input either another month or another file for the current month. Option 1 generates the same sequence of prompts as Part 1 "Getting Started", steps 1 thru 10. Option 1 asks:

Month?
Year?
OK (y/n)?
New Month?
OK (y/n)

Option 1 inputs up to 12 different months and keeps track of each month separately. It also accepts any number of data files for the same month. After a file is loaded a total is displayed for each category. Option 1 prompts with the question PROFILE? Type "y" and press RETURN to see a graphic representation of the expenses. When the graph is displayed press RETURN to display the Menu or press (f2) to print the graph. If you have a VIC printer you may type function key (f2) and print the screen. Figure 2 presents the information which is automatically displayed for each and every file on an individual basis, i.e., the information shown is for that file alone and it is not cumulative.

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PART II

Another Month (Option 1)
Sum a Month (Option 2)

(month)	expenses
AU	xxxxx
MR	
CL	.xx
EN	x.xx
ED	xxxx
FD	
GI	
HH	
IP	
MD	
SA	
TX	
UT	
ZZ	
VA	
Total spent:	XXXXX.XX
Income:	XXXXX.XX
Profile:	

Note:
This is an exception to the data entry rules:
— a decimal point appears only when the cents value is not zero.
— whole dollar values are shown without a decimal point and without zero cents values.
— values less than a dollar are shown so the zero dollar value does not appear.

Legend
This table is used to show the following for 1 month:
  • expenses and income
  • amount for each category
  • total amount spent for all categories added together
  • total income for the month
To request this table's corresponding graphed profile:
  • enter y and press the RETURN key.
To skip seeing the profile graph:
  • enter n and press the RETURN key.
Display this table via Part II's Option 1 or Option 2

Figure 3. Another Month/Sum Month (Options 1 & 2) Display

The Profile is a graph that is generated every time Option 1, 2 or 3 are performed and it is shown in Figure 4. You can choose to display it or not. Respond with a "y" to display the profile graph, or with a "n" to avoid seeing it.

The Spending Profile is a bar chart that graphs the money spent for each category relative to the total money spent and indicates the % by the length of the bar. For example, this Figure 4 shows that 20 percentage of this month's expenses were spent on mortgage payments.

The Profile for Option 1 is on a per file basis, i.e., it calculates and shows the profile for only that one file.

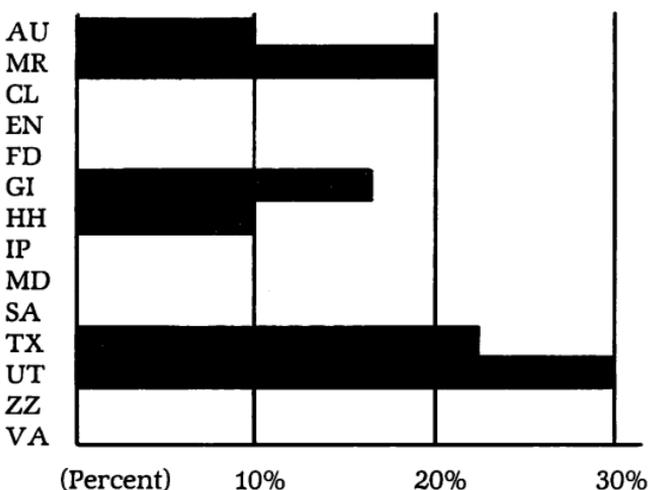Spending Profile (Bar graph): for Options 1, 2 & 3
(Categories)

Figure 4. Profile Graph (Options 1, 2, 3)

SUM ANY MONTH (Option 2)

Sum Any Month, Option 2, totals the money spent on all categories for a particular month. Option 2 sums all of the specified month's files which exist in memory (having been loaded via Option 1) at the time this option is selected.

Part II asks: "Month?", type in the month name and press RETURN. If the program cannot find that month, a "?" is displayed and you return to the menu. If the month is found, the category totals, shown in Figure 3, are all displayed and one has the option of displaying a Spending Profile for that month, shown in Figure 4.

TOTAL MONTHS (Option 3)

Total Months, Option 3, is used when files for two or more months exist in memory. Use Option 3 to calculate category totals for all months currently existing in memory. The spending profile that results contains the combined totals for all months.

Figure 5, Total Months Display, shows the information displayed as a result of using Option 3, Total Months. Notice that this information displayed has the same format as that of Options 1 and 2 shown in Figure 3. Another Month/Sum Month Display. The only difference is that the heading for Total Months (Option 3) is "(Year) expenses" and the heading for both Another Month (Option 1) and Sum Month (Option 2) is "(month) expenses".

Option 3, Total Months, sums all of the monthly files that are in the VIC's memory at the time this option is selected. Since Part II is running, this option uses only those files that were put in memory using Option 1 of Part II, "Another file". A profile is automatically generated in this option.

Suggestions:
a. Use Option 3 to total spending in a particular period (spring, for example) by reading the data files for that period ("Mar", "Apr", and "May" in this example). However, once a month's data file is loaded it remains in memory until a LOAD of Part I, II, III or IV occurs.
b. To see year-to-date totals on your spending, enter the months in calendar order ("Jan", "Feb", "Mar", etc.) and use this option after each month is entered.

PART II TOTAL MONTHS (Option 3)

```
(year) expenses
        AU
        MR
        CL
        EN
        ED
        FD
        GI
        HH
        IP
        MD
        SA
        TX
        UT
        ZZ
        VA
  Total spent:      xxxxx.xx
        Income      xxxxx.xx

        Profile?
```

NOTE: This table appears very similar in form to the tables for Part II Options 1 and 2 and their legends also apply to this table. However this Option 3 table covers an entire year, not just one month. This heading is (year) expenses. For example this heading could appear as:

<div align="center">

1982 expenses

—or—   82 expenses

</div>

Figure 5. TOTAL MONTHS (Option 3) Display

SUM CAT (Option 4)
   Sum Category, Option 4, allows you to select one category and display each month's expenses for that category and their totals.
   Figure 6 presents the information displayed by using Option 4. This option is very useful for pinpointing seasonal fluctuations in your spending habits.

END (Option 5)
   END is the last option, Option 5; it terminates Part II.

PART IV SUM CATEGORY (Option 4)

(category)		Example:	
Month	**Amount**	**AU**	
(month 1)	xxxxxxx	**Month**	**Amount**
(month 2)	xxxxxxx	Jan	525
(month 3)	xxxxxxx	Feb	0
:	:		
:	:		
(month 12)	xxxxxxx		
Total	800	Total	620
Hit a key		Hit a key	

Figure 6. Sum Category Display and Example

Option 4 Part II, Sum Category, causes Figure 6 to be displayed. This displays a table for the category that you choose and "sums" all of the expenses in that category. This table shows the chosen category's expense for each month that exists in memory and sums the total. Hit a key to return to the Menu.

Option 4, Sum Category, lists all the months that currently exist in the VIC's memory. The available files are only those files that were "read in" or "input" using Option 1 or Part II, namely, the "another file" Option. The months listed are those that exist in memory. If all 12 months exist in memory then all 12 months are listed; if only 3 "month" files exist in memory then only those 3 will appear.

PART III (BUDGET)
OVERVIEW OF PART III
Part III prepares a monthly budget and shows how close expenses came to meeting the budget. Part III saves the budget on a file, recalls it, modifies it, and resaves it. Part III takes into account the number of months present in memory for its calculations and automatically adjusts the total budget to reflect the correct number of months.

MENU OPTIONS (PART III BUDGET)

1. Another month	4. New budget
2. Sum any month	5. End
3. Total months	

Any one month, or any group of months entered under Part III are compared to the budget for that period. Part III calculates the number of months input from files and automatically adjusts the total budget for that number of months.

Comparison of budgeted amounts to actual amounts is presented graphically as a percentage, with the dollar amounts superimposed on the horizontal bar graph.

LOADING BUDGET FILE
Part III first prepares the Budget ("bdg.") file. If a budget file exists, insert it into the cassette unit and rewind the tape to the beginning or have the proper diskette in the disk unit. Follow standard loading instructions to read the budget file into memory.

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The first time Part III is run, a Budget file (named "bdg.") does not exist and cannot be loaded into memory. So, the first time Part III is run Option 4 must be used to create a NEW BUDGET FILE. At any time one can skip this budget generation step by typing the letter "c" to continue and not load a budget file into memory. This bypasses the budget creation, sets all budget values to zeros (o's), and Part III continues.

ANOTHER MONTH (Option 1)

Option 1 enters files into memory exactly as in Parts I and II. It prompts for the month and year of the personal finance tape or disk file to be read, and allows a chance to correct the names entered.

After a month is read from the file, all of that file's expense categories are totaled and compared to the Budget File, "bdg.". The comparison of that month's expenditures with budget is automatically displayed. The actual amounts are graphed in blue; the budgeted amounts are graphed in red.

The monthly budget comparison is automatically generated and displayed for the month whose file is being entered into memory. The display is presented below in Figures 7 and 8. Since 4 categories are displayed per screenfull, it takes 4 different displays screens to report all 16 categories. Figure 7 shows the first dislay screen presented to you. Figure 8 skips to the last (4th) display screen. The second and third display screens are omitted from the figures shown but all four are actually displayed every time a month is read into memory, and cannot be bypassed. Press RETURN to display the next screen. Once all categories are shown the Menu returns.

Figure 9 shows the display screen format and explains the different fields.

Note that due to the screen size if the actual amount is more than 160% of the budgeted amount, the graph is cut off in order to fit.

VIC displays:

Figure 7. Another Month (Option 1) 1st Display Screen

SUM ANY MONTH (Option 2)

Sum Any Month, Option 2, compares the expenses for any month to budget. Identify the name of the month and, if found, that month's actual expenditures are graphed as a percentage of the budgeted amount. If the budgeted amount for any category is zero, the percentage is automatically set to 0%.

Option 2 displays the same information as Option 1. Refer to figures 7, 8 and 9.

The fourth (last) Display screen contains

		Percent
Category	UT:	budgeted amount
	0.0	0%
	0.0	
	ZZ:	
Actual amount spent —————————— 200.00		50%
Budgeted amount————————— 400.00		
	VA:	
	1500.00	300%
	500.00	
Total spent ——————————— TT:		
Actual total amount spent ——— 3000.00		200%
Total amount budgeted ——— 1500.00		

Returns to the Menu after this last display screen is seen and the RETURN key is pressed.

Figure 8. Another Month (Optional) 4th (last) Display Screen

TOTAL MONTHS (Option 3)

Total Months, Option 3, calculates the total expenses for all months including every file in each month. It compares the total expenses to the budgeted total value on a per category basis. Option 3 displays the same display format as Options 1 and 2 but it totals all months in memory, not just one month. Refer to figures 7, 8 and 9.
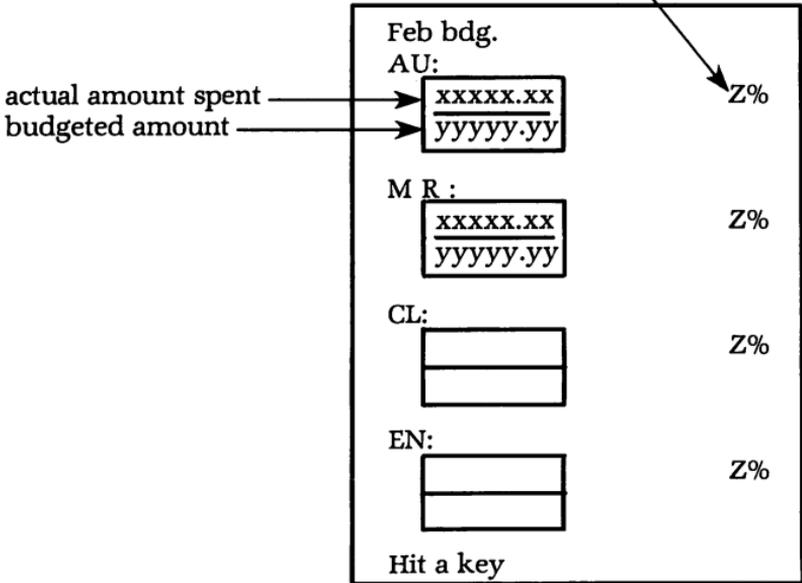
Budgeting is accurate if the month-to-month fluctuations in actual expenses even out over one year. This means that if total expenses for one year (all 12 months) are compared to the total budget for that same period, expenses should come close to the budget.

Part III Option 3 automatically totals all of the expenses for all months separately for each category and compares each to its budget. It also compares the grand total to the total budgeted amount.

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VIC DISPLAYS this file's actual expenditures vs. budget amounts:

percentage of budgeted
amount spent: (i.e.,
actual amount divided by
budgeted amount)

actual amount spent ——
budgeted amount ——

```
Feb bdg.
AU:
  ┌─────────────┐        Z%
  │ xxxxx.xx    │
  ├─────────────┤
  │ yyyyy.yy    │
  └─────────────┘

M R :
  ┌─────────────┐        Z%
  │ xxxxx.xx    │
  ├─────────────┤
  │ yyyyy.yy    │
  └─────────────┘

CL:
  ┌─────────────┐        Z%
  │             │
  ├─────────────┤
  │             │
  └─────────────┘

EN:
  ┌─────────────┐        Z%
  │             │
  ├─────────────┤
  │             │
  └─────────────┘

Hit a key
```

NOTE:
— repeats this again for
  next 2 sets of 4

— the last display shows
  the last 3 categories
  with TT, Total Amount,
  and Z% for TT.

— Returns to Menu
  after all categories
  are displayed

$$Z = \frac{xxxxx.xx}{yyyyy.yy}$$ Total amt spent
Total budgeted amt

Where:
xxxxx.xx is actual
amount spent for
that category

yyyyy.yy is the
amount budgeted for
that category.

$$Z = \frac{xxxxx.xx}{yyyyy.yy}$$

Figure 9. Option 1 Generalized Form (Another Month)

NEW BUDGET (Option 4)

Option 4 creates a NEW BUDGET file named "bdg.". Option 4 displays a list of all the categories, their budgets, and the total budget value. To change a category's budgeted amount, just enter that category's number and press RETURN. The program then requests the new budget amount. Enter the new budget amount and press RETURN. That category's budget is changed, and the entire screen is redisplayed with the new budget and total.

After you entered a few month's expense it is normal to find that your original budget is off target. This option allows you to adjust your budgeted amounts and save those values as your new budget. You also use this option the first time you run Part III, in order to enter your initial budgets. Use this feature to prepare a budget tailored to your income. This feature allows budget amount adjustments until the best fit of budget to actual spending is arrived at.

Figure 10 shows the new budget screen displayed when using Option 4. To exit this option AND save a budget file, enter a number higher than 14 and press RETURN. You are asked to prepare the "bdg." file. Follow the instructions and Part III saves the budget permanently on file to be read in the next time Part III is run.

To exit Option 4 WITHOUT updating the budget file, type in a negative number and press RETURN.

NOTE: A negative number is a (" – ") minus sign followed by a number. The minus sign is on the keyboard between the plus sign and the British pound sign (£).

END (Option 5)
END, Option 5, terminates Part III and it forces the budget file ("bdg.") to be resaved.

To avoid overwriting the current budget file proceed immediately loading the next part without employing option 5, END.

PART IV
OVERVIEW OF PART IV
Part IV totals the deductibles in each category. Each tax deductible item was identified in Part I as each item was entered.

For each category Part IV graphically compares the deductible expenses to the total expenses in that category. Part IV allows you to input any number of months (up to 12) with any number of files per month and it automatically sums the deductible items for these months. Part IV displays each month's deductibles by listing on the categories containing deductibles and their amounts.

PART IV INSTRUCTIONS
As in Part II and III, this program requires monthly data in order to run. Figure 10, New Budget, and Figure 11, Deduction Expenses result from Part IV.

Part IV requests a month and year file name for the data being entered. After the initial month's data is read from the tape or disk file, a graphical display of the deductible amount for each category versus the total amount spent for each expense category is shown on the screen. Income is also displayed.

<div align="center">

MENU OPTIONS
1. Another Month
2. Display expenses
3. End

</div>

To select any of these options, type in the option number and press the RETURN key.

```
              bdg:
                1.   AU    xxxxx.xx
Budget          2.   MR    xxxxx.xx
file name       3.   CL    xxxxx.xx
                4.   EN    xxxxx.xx      Category budget values
Category        5.   ED    xxxxx.xx
identifier      6.   FD    xxxxx.xx
numbers         7.   GI    xxxxx.xx
                8.   HH    xxxxx.xx
                9.   IP    xxxxx.xx      Where xxxxx.xx can be
               10.   MD    xxxxx.xx      from 0.00 to 32766.99
               11.   SA    xxxxx.xx
               12.   TX    xxxxx.xx
               13.   UT    xxxxx.xx
               14.   ZZ    xxxxx.xx
               15.   VA    xxxxx.xx
```

Figure 10. New Budget (Option 4) Screen Display

```
         Feb 82
         GI      100       0.00
                         100.00
         HH      200       0.00
                         200.00
         SA      333       0.00
                         333.00
         TX     4444     4444.00
                        4444.00

         Jan 82
         EN     21.21      0.00
                          21.21        Cumulative; it also shows
         MR     22.22      0.00        results of Feb along with
                          22.22        Jan's
         ZZ     23.23      0.00
                          23.23

                 Hit a key
Each     IN:       0.00
time               0.00

                 Hit a key
```

Option 2 — Same as Option 1 — Shows existing memory

Figure 11. Deduction Expenses (Option 1 and 2)

ANOTHER MONTH (Option 1)

Another Month, Option 1, reads additional data files into memory one at a time and adds each to the current sums for deductible and total expenses in each category. Note that Part IV does not keep track of deductibles for each individual month; any new month entered is immediately added to the totals.

Option 1, Another Month, follows the same procedure as specified in Part II and III to load a file. After reading the file of data, Option 1 immediately displays the deductible expenses. Option 1 calculates and displays the deductibles for each category containing deductible expense items displaying the deductibles for each month individually and showing the total value and the total income.

DISPLAY EXPENSES (Option 2)

Display Expenses (Option 2), displays the total deductible expenses for each category. These totals always include all months that have been entered into memory via Part IV.

Option 2 (Part IV) shows the same results as Option 1 (Part IV) but these values are taken from the data stored in VIC Memory. Whereas, Option 1 obtains its value during the file loading process itself.

END (Option 3)

To terminate Part IV, choose Option 3 — End, which stops Part IV freeing the VIC for other uses.

RECOVERING FROM ERRORS

The following Error Message table states recovery procedures to be followed when an error message is received.

Table 7. Error Messages

ERROR	TO RECOVER
?REDO FROM START ?EXTRA IGNORED	These errors occur if one types a letter when the program expects a number, or if a comma or a colon exist in the data you entered. Re-enter the data correctly.
Accidentally pressing the RUN/STOP key while the program is running	Type CONT and press RETURN
?CAN'T CONTINUE ERROR	The program exited in an illegal fashion and caused an unrecoverable error. Type RUN and restart the program.
?FILE NOT FOUND ERROR ?DEVICE NOT PRESENT	Any of these errors requires complete restart. Press the RUN/STOP key and the RESTORE key simultaneously to reset the VIC. Type RUN to restart the program.

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HOME
INVENTORY
1 & 2

TABLE OF CONTENTS

HOME INVENTORY 1 & 2

1. INTRODUCTION

The Home Inventory package consists of two (2) parts designed to run on the minimum VIC to simplify the process of generating an inventory of the contents of your home. Although this package is called Home Inventory, it can also be used for an inventory of your store or office, securities and financial holdings, personal library, etc. Its applications are unlimited.

The Home Inventory package is designed to run on the basic 5K Computer with a tape cassette unit or disk drive. The two Home Inventory programs are contained on one tape cassette, with one program stored per side. Part #1 is called Purchases and Current Value and it is stored on the side of the tape marked, "HT1"; Part #2 is called Inventory Analysis and it is stored on the reverse side, marked "HT2".

The two Home Inventory parts work together to first catalog every item in your home, assign a purchase price and a current value to each, and second to calculate the total value of your possessions per category and summed together.

Part 1 is called Purchases and Current Value and is also referred to as Program 1. It is used to enter, list and record onto tape or disk every item that you want included in your home inventory. It allows you to type in specific information on each inventory item you have. It is by using Part #1 that you will build your inventory in the computer's memory. You can browse through and review the items in the memory and change, add additional items, or selectively delete items. Once satisfied with your inventory, you then use Part 1 to permanently save that inventory information onto either a cassette tape or disk. The data stored on the tape or disk can be reloaded into the memory at any time for you to browse through and review it, change it, delete it or add to it.

Part 2 is called Inventory Analysis and is also referred to as Program 2. It uses the inventory data that you generated and saved (via Program 1) to calculate the value of your possessions. You can select any one of your inventory files and load it into memory and Part 2 gives you the Total Purchase Costs and the Total Current Values of the items in any one category. Again, after loading one inventory file into memory you can use Part 2 to browse thru and review the inventory; or you can search for records of possessions which meet specific criteria. For example, you can request a SEARCH for the items which were purchased in 1978. Most importantly, Part 2 provides a "Value All" option which allows you to enter a sequence of any number of inventory files of interest to you; it then sums the purchase prices and current values of each category and presents a table of those sums, and their total value.

2. OVERVIEW

For a majority of families, Home Inventory is an important consideration for insurance purposes. By keeping track of the purchase price, current value and serial numbers of various categories of items, you better manage your possessions and are aware of their value. Home Inventory is designed to provide all the functions you need to do a fairly thorough cataloging of your family's possessions.

As you build your inventory information Program 1 lets you:
— Add, change and delete inventory items in up to 25 categories.
— Review the inventory items that exist in memory as you are building them.
— Save the inventory information in a file and permanently store it onto tape or disk.
— Save each set of inventory information under a unique file name.
— Stack multiple files onto one tape.

Once your inventory files are built Part 2 lets you:
— Load any inventory file into memory.
— Review the contents of memory.
— Evaluate one file of inventory items present in memory for any category that you select.
— Search the one file of inventory items present in memory for any information that you specify, and then display the items which fulfill the specifications.
— Calculate the inventory value totals for all of the categories within the file (or set of files) that you select and load into memory. This gives a sub-total value for each category, plus a grand total value which is the sum of all categories added together.

You may decide to inventory your home on a per room basis by mixing many categories together in one file and listing the items as they exist in each room. Or you could choose to group all items of a particular category together into a file. The choices are many.

There are two basic things you need to do in order to get started with Home Inventory:
1. Read this manual thoroughly and have it next to you as you run the programs.
2. If you are using cassette storage then have a set of one or two blank cassette tapes available. If you are using disk storage then one diskette should be adequate for all your files.

3. GENERAL RULES

The general rules presented below enable you to easily and correctly enter data and operate the two Home Inventory programs. Since these programs are designed to run on the smallest VIC it is very important that the directions for entering data and operating the programs be followed EXACTLY as stated. The

three tables in the back of this book summarize the rules to be followed to enter your inventory data correctly.

In some cases if you do enter incorrect data (such as typing in letters when the program requires numbers), you get an error message; for example, REDO FROM START is an error message telling you to reenter your data. In general, you can recover from these types of errors by just reentering the data correctly. Other types of errors (such as entering incorrect or ambiguous information) go unnoticed by the program and the accuracy of the Home Inventory reports will suffer. The programs always let you go back and correct any improperly entered data, but by being careful and doing things right the first time, you avoid extra work. The error messages are listed in the back of this book.

MENUS

Menus are provided to show you the options that are available for your use with each program. The appropriate menu is displayed automatically for each Part 1 or Part 2 program. Select the operation you wish to perform by typing its assigned option number and then pressing the RETURN key.

Menu Part 1	Menu Part 2
1. Load data	1. Load data
2. Review items	2. Value a category
3. Add items	3. Search/review memory
4. Change items	4. Value all
5. Delete items	5. End
6. Save data	

DISK OPERATION RULES

The Commodore VIC Single Disk Drive can be used to store your inventory items on floppy diskettes. All directions presented herein are the same for both disk and tape storage.

TAPE OPERATION RULES

The rules for using cassette tapes to store your Home Inventory data files are as follows:

1. Provide a unique file name for each file of inventory data that you save onto tape.
2. To store more than one file on a tape be sure to space forward completely past any existing file or files that reside on the tape. Then start your recording of the file to be newly added. Care must be exercised to avoid unintentionally overwriting an existing file on tape.
3. To delete a file or files on a tape merely record over them.
4. Label each tape or disk showing the file names and creation dates.
5. As each file is created and added to a new or used tape, add the file name and date onto the tape label.
6. When LOADing a file of inventory data into VIC memory be sure that the tape is positioned in front of the inventory file and not at some point past it; otherwise, the data file will not be found.

7. If you are familiar with the rules for the standard home tape recording of music selections, etc. you can apply these same concepts for the storing, adding and overwriting Home Inventory data files.

8. After successfully loading Program 1 or 2 into memory it is good practice to rewind your tape as soon as you have finished using it. If, for any reason, you must reload the program, you could waste much time before realizing that the program has not been found because the tape should have been rewound.

9. In order to store or record a file onto a tape it is of utmost importance that you push the RECORD and PLAY buttons IN THE CORRECT SEQUENCE. If you depress the buttons in the wrong sequence or incorrectly YOUR DATA WILL ALL BE LOST; it will not be recorded on tape and it will be erased from memory. You will have to retype it all and try again. The correct sequence to store onto tape is to:
   a. Depress and hold down the RECORD button.
   b. While still holding the RECORD button down, then simultaneously depress the PLAY button.
   c. Once both buttons are down and the recording is taking place then you can safely leave the button alone.

10. Exercise care when attempting to add a file to the end of a string of files on a tape. In this case do not rewind your tape until after the newest file has been stored or else you will unintentionally overwrite an existing file.

11. Periodically, it is good practice to "backup" your files by making copies of them as a safeguard.

12. As you gain expertise in LOADing files from and saving files onto tapes (or disk) you will discover techniques which you will prefer to adopt in your "file management".

DATA ENTRY RULES
Each inventory item is described using six pieces of data:

    — Category code   — Purchase price
    — Serial number   — Current price
    — Date of purchase   — Descriptions

The following rules must be followed whenever you enter data inventory items using Part 1 and analyze your inventory using Part 2.

1. Be consistent in how you enter your inventory items. If you identify your categories using capital letters, then use capital letters for all categories to SEARCH correctly, your "search data" must be exactly the same form as your inventory data in order to get a match. For example, if you SEARCH for CAR these will not match: -Car -car

2. Select a form for the purchase date that you like and use it throughout your inventory items. You are not wrong if you use different forms. However, if you mix the way you enter the date, you run the risk of not finding all of the entries

when doing a SEARCH. For example, if these dates are in your inventory items and you search for 1981
   a) 5 JAN 1981
   b) 15 JAN 81
   c) 3 MAR 1981
you would find only (a) and (c). If you do a SEARCH for 81 then you would find (a), (b) and (c).
3. Entering an amount that is in whole dollars and no cents, displays the amount as whole dollars only. The cents value of 00 is not displayed.
   For example, amount entered: 298.00
                   amount displayed: 298
4. If you have a whole dollar amount with no cents, then you can correctly enter it in any one of the following ways:
   379.00
   379.
   379

   In every case the three forms of three hundred seventy-nine dollars and no cents are stored the same. Each is stored as 379.00 and displayed as 379 with cents field not shown because it is zero.
5. If you enter an amount with a cents value greater than zero, then the cents value will always be stored and displayed.
6. When Part 1 is finished and the screen displays
       READY.

   You can start Part 1 by entering
       RUN and hitting RETURN

   The same is true for Part 2; however, the only program that you can restart is the one that just terminated because that is the only one that currently exists in the VIC's memory. To RUN the other program you must first LOAD it into memory by following the procedures described under LOADING.
7. If at any time you mistakenly push the RUN/STOP key you can recover by simply:
       1) Type RUN
       2) Push RETURN button
8. If you mistakenly neglect to fill in either Purchase Price or the Current Value amount, then that field will have UN-PREDICTABLE VALUES (referred to as residue) stored into it.
9. If you mistakenly neglect to fill in either the Current Date or the Description Field then the Catalog Number is automatically copied and stored into these fields for you.

PART 1 (PROGRAM 1)

Program 1, Purchases and Current Values, allows you to enter data on any of your possessions, categorizing them in any way you see fit. The category is determined by a three character code which you make up; you may use any codes you feel are suitable and easy to remember. A sample list is included below.

You may have to a maximum of 25 different categories in memory at one time.

CATEGORY	CODE	CATEGORY	CODE
Automobile & Accessories	AUT	Dining Room Furniture	DRF
Furniture & Fixtures 1st Floor	FF1	Dining Room Antiques	DRA
Furniture & Fixtures 2nd Floor	FF2	Safety Box 1	1
Clothing	C	Safety Box 2	2
Artwork	ART	Stock	S
Summer Clothing	SCL	Bonds	BON
Living Room Rugs	LRR	Insurance Policies	INS
Living Room Furniture	LRF		
Living Room Antiques	LRA		

Each inventory item of data you enter is called a RECORD: each record you enter contains six pieces of data, called FIELDS. The field in each record are presented in Table 1 which describes the allowable contents of each field and shows correct examples.

THE MAXIMUM NUMBER OF RECORDS PERMITTED IN MEMORY AND/OR IN A FILE AT ANY ONE TIME IS 25. Remember, the maximum number of records you can enter at any one time into a data file is 25. However, if you constantly use the maximum number of characters for the description and serial number fields you may receive a message that says:

<div align="center">Filled
ready.</div>

This means that your memory is full, even though you have entered less than the maximum 25 inventory items/records in this file.

Program 1 keeps track of the available memory and forces you to save the items when the memory is full. This prevents memory from overflowing and losing the records. When memory is filled you are automatically placed into the SAVE option and you must permanently save your file onto tape or disk before being allowed to proceed.

You probably need to save more than 25 items. This is easily done with Program 1, by creating a new inventory file for each group of 25. The program allows you to add, change delete, review, and save your items in a data file. You enter and edit your inventory data until you're completely satisfied; you then save this information for use by Program 2, Inventory Analysis.

PART 1 GETTING STARTED

LOAD AND START PART 1
1. Set up your VIC 20 computer, TV set and Commodore cassette recorder (or disk).
2. Place the tape in the recorder, label side up. Most tapes are recorded on both sides, several times on each side.
3. Press the REWIND key on the recorder.

4. When the tape stops moving, press the recorder's STOP key.
5. Type the word LOAD on the VIC's keyboard and hit RETURN. For disk, type LOAD "HD1".
6. The message PRESS PLAY ON TAPE appears on the screen.
7. Press the PLAY key on the tape recorder.
8. The words OK and SEARCHING appear on the screen and the tape runs.
9. After a few seconds, the VIC displays FOUND (filename) and the word LOADING.
10. When the VIC has completed the loading process the word READY is displayed.
    The total accumulation of messages are shown below:
        PRESS PLAY ON TAPE
        OK
        SEARCHING
        FOUND (filename)
        LOADING
        READY
11. To "run" the program, simply type the word RUN on the keyboard and hit the RETURN key. The Home inventory Program 1 starts and informs you that it has started by displaying a message on the screen for 5 seconds. It automatically displays a menu of options from which you select an option to be performed.

IF YOU HAVE TROUBLE LOADING
1. Type the word LOAD and hit RETURN again. (There is a second copy of the program on the same side of tape).
2. Try moving the Datasette so the cord is FULLY EXTENDED (to minimize the possibility of interference from your TV or monitor. Placing the Datassette on or near some sets may cause interference).
3. Turn the VIC off, then on. Rewind the tape and try again.
4. Check the troubleshooting Chart in the VIC Manual.
5. See your Commodore VIC dealer.

MENU OPTIONS (PART 1: Purchases and Current Values)
The menu options are as follows:

1. Load Data	4. Change items
2. Review items	5. Delete items
3. Add items	6. Save data

You select the operation you wish to perform by typing its option number and then pressing the RETURN key. Each of these operations is described in detail below and again in the Table 2, the Menu for Part 1 that appears at the end of this user guide.

LOAD DATA (1)
Option 1 is LOAD and it reads the specified inventory data file from tape or disk into the VIC's memory.

1. If you have previously prepared an inventory data tape, Option 1 enables you to load the data file from the tape (or disk) and store it into the computer's memory. After you have selected this option, the computer displays the message:

    Inv. Name?

2. This means you should insert the data tape into your storage unit. If you are using a tape cassette then you should rewind the tape to the beginning.

3. Type in the file name that you want loaded then press RETURN.

4. The screen displays:

    Inv. Name? (filename)
    OK (y/n)?

5. If the name is spelled wrong, type "n" and press RETURN. This enables you to enter the file name again. You can keep repeating this until the file name is spelled correctly.

6. If the file name is spelled correctly, enter "y" and press RETURN. The screen displays:

    Prepare (filename)
    file
    Hit a key

7. Depress any key on the keyboard and this causes the tape LOADing to start.

8. The following appears on the screen:

    search for (filename)

9. Once the file name is found the following appears on the screen and the LOADing commences:

    found (filename)

10. Let tape motion continue uninterrupted. Tape motion stops by itself. After the data is loaded into the computer's memory the menu reappears on the screen.

REVIEW ITEMS (2)

REVIEW is Option 2. It is used to see what items are currently contained in memory. Each item is displayed one at a time. To view the next item, press the "N" key (for "next") or hit the RETURN key, or the SPACE bar; this displays the next item in the memory. After the last item is displayed the program automatically returns to the menu. If you wish to exit before seeing all the items type "e" (for "end") and the program immediately returns to the menu.

ADD ITEM (3)

Add, Option 3, creates a new inventory file or adds items to an inventory file existing in memory. Use of ADD to create a Home Inventory file.

Memory holds a maximum of 25 items. To ADD an item to memory enter each data field as VIC asks for it. After the data for one inventory record is entered Part 1 asks:

    OK (y/n)?

If correct, type "y" (for "yes") and press RETURN. Any other response means "no" and you must reenter the data. Once the entry is OK'd Part 1 requests the next inventory item.

To exit ADD, Option 3, hit RETURN when prompted for the category code, causing the Menu to return.

If memory is full because 25 entries exist or all available memory is used, ADD forces a file save to occur. To enter more items repeat this procedure and create another new inventory data file.

NOTE: If a mistake exists in an entry being built, continue typing all the data for that entry and then later use the CHANGE option to correct it. OR, press the RETURN key when asked for each additional field until the OK (y/n) occurs. Answer with "n", or any letter other than "y", or by pressing the RETURN key to restart the current record. This avoids retyping all of the fields.

CHANGE ITEMS (4)

CHANGE any inventory item by choosing Option 4, which displays:

        Change
        Next
        End

followed by the contents of the first record.

If the item displayed is not the item to be changed, press "N" (for "next").

To change the item press "C". To change an item re-enter all data fields, even if one field is to be changed for that item.

To terminate changing items, type "E" (for "end") which returns the Menu.

DELETE ITEMS (5)

DELETE any inventory item via Option 5 which displays:

        Delete
        Next
        End

followed by the contents of the first record.

If the record displayed is not the item to be deleted, press "N" (for "next"), which displays the next item.

To DELETE the item being displayed press "D" (for "delete"). DELETING AN ITEM CAUSES ALL OF THE FOLLOWING INVENTORY ITEM COUNTS TO BE RENUMBERED.

To stop the deleting process type "E" (for "end") which displays the menu.

SAVING ITEMS (6)

You can SAVE your items in a data file at any time by entering Option 6. The program prompts you for an inventory file name. The following message is displayed:

        Inv. Name?

1. Prior to starting you should position your tape to the point where you want the new file to be stored.
2. Enter the file name that you want assigned to this and press RETURN. The file name must be 10 characters or less, consisting of letters, numbers or special characters.

3. The screen displays:
   Inv. Name? (filename)
   OK (y/n)?
4. If you spelled the name wrong or simply want to change it you have the chance to fix it now by entering an "n" or any character other than a "y". This causes the file name request to be repeated. You can continue saying "no" repeatedly.
5. Once the file name is spelled correctly or is acceptable to you, enter the letter "y" and press RETURN.
6. The screen then displays:
   Prepare (filename)
   file
   Hit a key
7. Depress any key on the keyboard and press RETURN.
8. The additional message appears:
   Press record and play
9. It is MOST IMPORTANT that you press the correct tape cassette buttons IN THE EXACT ORDER SPECIFIED in steps 10, 11 and 12. If you fail to press the buttons as stated your inventory file data is not recorded onto tape correctly and the copy in memory is erased. You have to completely re-enter all of your data if you make a mistake on this recording step.
10. DEPRESS AND HOLD DOWN the "RECORD" button. Keep holding the RECORD button down.
11. Simultaneously while holding down RECORD, depress the PLAY button.
12. When both buttons are engaged remove pressure from them.
13. The screen displays the following and recording starts:
    ok
14. When the entire inventory file has been stored the following messages appear on the screen:
    Saved
    Ready
15. This means the file exists on the tape (or disk). Saving a file on tape or disk also ends Program 1. READY means that your VIC is ready and available to run another program. To restart Program 1 enter RUN and press RETURN.
16. You can rerun Program 1 and create more files. Or, you can use the file you just created.

Note you may read in one data file and make changes and then save it under a different name. This can be useful for making backup copies or special inventory files.

The option of saving the inventory file onto tape or onto disk erases that copy of the inventory file from memory. You must now load the tape (disk) file back into memory to continue using the data that you just moved onto a permanent storage device (tape or disk).

STEP BY STEP INSTRUCTIONS: PART 1

The following is a step by step lesson which shows you how to enter Home Inventory items and save them on tape (or disk). The lesson then shows you how to retrieve your inventory list from tape (or disk); and enter additional items, or edit the ones you have stored.

To begin with, you have an option of working with cassette tapes on which data can be recorded (saved) and played back ("LOADed") using the Commodore Datassette. Or, you can use the Commodore VIC Single Disk Drive to store your inventory on floppy diskette. The steps shown below apply for both tape and disk.

1. Insert the Part 1, (Program 1) tape into your tape cassette.
2. Rewind the tape.
3. Type the word LOAD and hit the RETURN key. The VIC says:
      READY.
      LOAD
      PRESS PLAY ON TAPE
4. Press PLAY on the tape cassette. The VIC says:
      SEARCHING
      FOUND
      LOADED (and when Program 1 is completely loaded)
      READY
5. Type the word RUN and hit RETURN.
6. A title page comes up briefly on the screen then a menu appears automatically, with the question "OPTION?" and waits for a response.
      Menu Options:
      1. Load data
      2. Review items
      3. Add items
      4. Change items
      5. Delete items
      6. Save data
      OPTION?
7. You should first use the ADD, Option 3. You must ADD data since this is your first introduction to Home Inventory and you do not have any existing data files. Your first step is to start creating inventory data in your VIC's memory.
8. Type the number 3 and hit RETURN. (This lets you ADD inventory items) The VIC says:
      ITEM #1
      Cat:
9. Enter any 3 characters CATEGORY NAME (for example use the word Car - or - the abbreviation AUT for Auto Expenses) then hit RETURN; the VIC says:
      SER #?

10. Type in the item's SERIAL NUMBER or IDENTIFICATION NUMBER. This serial number can consist of any combination of numbers, letters, special characters or any keyboard characters from 1 up to a maximum of 81 of them. The VIC says:

    Pur. date?

11. Type a DATE. Select from one of the many allowed forms of these formats: (Do not exceed 8 characters for date).

    June19/1 (do not use comma)
    19June81
    6/19/81
    61981 (other 8 character formats also possible).
    6.19.81

    Hit the RETURN Key. The VIC says:

    Pur. amt?

12. Enter any PURCHASE VALUE less than 32768. (Do not include dollar sign). Hit the RETURN key. The VIC says:

    Curr value?

13. Enter any CURRENT VALUE less than 32768. (Do not include dollar sign). Hit the RETURN KEY. The VIC says:

    Desc.?

14. Type any DESCRIPTION of 10 characters or less (for example: new tire. Hit the RETURN Key. The VIC says:

    ok (y/n)?

15. Type the letter "n" (no, it is not ok) to correct any type errors - or - the letter "y" (yes) if everything is OK. Hit the RETURN Key. If you type "n" the VIC will repeat steps 9 through 13. A "y" brings you to step 16.

16. You have successfully entered your first inventory item. The VIC now says:

    Item #2
    Cat?

17. You now have a choice of entering another item - or - you can hit the RETURN key to go back to the menu. Press the RETURN key to return to the menu and exercise another option.

18. The VIC displays the menu and says:

    Option?

19. Type a "2" (Option 2, REVIEW) to see the item(s) entered in the VIC's memory. Hit the RETURN key.

20. The VIC shows you the first item in memory and says:

    Next End.

    (These remind you to either type the letter "n" to see the NEXT item, or the letter "e" to EXIT to the Menu again. When the last item is on the screen, typing the letter "n" will also take you back to the Menu).

21. Type the letter "e" to exit and return to the Menu. Hit the RETURN key. The VIC displays the Menu.

22. You have just ADDed and REVIEWed your first home inventory data. Use Table 2 to guide you through the correct procedures for the other options of changing items and deleting items. Use Table 1 to guide you in the correct selection of inventory data.

23. When you are ready to store your newly created inventory data from memory onto tape (disk) then proceed to step 24.
24. To SAVE your information on cassette tape, type the number 6 and hit RETURN. The VIC says:
    Inv. Name?
25. Type the file name you want to give this series of items and hit RETURN. The file name must be 10 characters or less. The VIC says:
    ok (y/n)?
26. Type the letter "y" and hit RETURN. The VIC says:
    Prepare (filename)
    file
    Hit a key
27. Get the tape (disk) you want the items saved on and place it in the tape cassette (disk unit). Note: filename is the name you typed in. Make sure the tape is rewound. Type any key. The VIC says:
    Press record and play
28. Press the RECORD button first then simultaneously press the PLAY button. The VIC says:
    ok
29. Wait for the tape to finish. The following is displayed on the screen:
    Saved.
    Ready
    You now have all the important inventory items, 25 items or less, saved on cassette tape (or disk). Rewind the tape, date and label it and set it aside for use in Home Inventory, Part 2.

PART 2 (Program 2)

Part 2, Inventory Analyses, uses the data you created in Part 1 and gives you a choice of analyses options to choose from and presents the results to you.

Using Part 2 you can select and load any one inventory file and get the total of the Purchase Costs and Current Values of the items in any category. Again loading one inventory file into memory, you can review the contents of memory, or find the records of possessions which meet specific criteria. For example, you can request the items which were purchased in 1978. Most importantly, Program 2 provides a "Value All" option which allows you to enter any number of inventory files of interest to you; this option then sums the Purchase Prices and Current Values of each category and presents a table of sums.

PART 2 GETTING STARTED

LOAD AND START PART 2

The following procedures LOAD the Part 2 Program into the VIC's memory.
1. Place Part 2 tape in cassette.
2. Type LOAD and hit RETURN.

3. The screen displays:
   READY.
   LOAD
   PRESS PLAY ON TAPE
4. Depress the PLAY key on the tape cassette (or disk).
5. The following appears on screen:
   OK
   SEARCHING
   FOUND HT2
   LOADING
6. When Program 2 has been completely loaded the following appears on the display:
   • READY.
7. To start Part 2 type in RUN and press RETURN

IF YOU HAVE TROUBLE LOADING.
   If you encounter difficulties follow the reloading procedures specified for Program 1 in Part 1.

MENU OPTIONS PART 2
   The Menu options for Part 2 are as follows:
1. Load data file
2. Value a Category (for one file)
3. Search/Review Memory (for one file) (Search erases memory)
4. Value All (for multiple files) (erases memory)
5. End.
Select the option you wish to perform by typing the Option number and pressing RETURN. Each option is described below and again in Table 2.

LOAD A DATA FILE (1)
   Option 1 is used to LOAD a data file from tape or disk into memory. LOADing a data file is done in exactly the same way as in Part 1. Please refer to the instructions earlier in this manual which describes how to LOAD in a data file.
   When LOADing a data file into memory all previous items in memory are overwritten. Because of the limited size of the VIC's memory only one data file may be loaded into memory at one time.

VALUING A CATEGORY (2)
   Option 2 is used to calculate the VALUE of one category. This option works on only one file at a time and it analyzes the data residing in the emory at the time you select this option. Option 2, VALUE a Category, displays the Total Purchase Price and Total Current Value of all the inventory items in memory for one category selected by you. It is useful to find out how much all your stereo equipment currently in memory is worth, for example. Before this option can be run you must have previously loaded a data file in memory; otherwise you will see all zeroes displayed for the values.

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1. To request Option 2, Value a Category, type in a "2" and press RETURN.
2. After selecting Option 2, you will be asked which category you wish to have summarized. The screen will display:
   Cat.?
3. Type in the code letter or letters of the category and press RETURN. The sums are instantly displayed on the screen as follows:
   Cat.? ART
   Purch. price:
   3000.00
   Curr value:
   9000.00
   Hit a key
4. If you type a code which doesn't match any of the codes in memory, zeroes are displayed as total amounts. For example, if the category ART exists in memory but you misspell it as AAT, the display appears as follows:
   Cat.? AAT
   Purch price: 0.00
   Curr value: 0.00
   Hit a key
5. To return to the Menu depress any key. You do not need to hit RETURN. Merely depressing a key will return you to the menu.

SEARCH/REVIEW MEMORY (3)

Option 3 is used to either SEARCH memory for a specific item of interest or to browse through and REVIEW it. You can use it to simply REVIEW the information in memory without altering the memory in any way. Or you can use Option 3 to SEARCH the information in memory to find the item that matches the specified data of interest to you; this search does alter the memory contents.

REVIEW (NONDESTRUCTIVE) (3)

Use Option, 3 REVIEW, to perform a non-destructive review of the memory contents. You must either enter a dollar sign ($) and press RETURN, or simply press RETURN without specifying anything as search characters.

When you use Option 3 just to REVIEW the items in memory it does not change, delete or erase anything from memory. You can use this "review" aspect of Option 3 and still be able to request Option 2, Value a Category, without first having to reload the file into memory.

REVIEW memory does not destroy memory. And, REVIEW does not force you to reload a file before returning to Option 2, Value a Category, or before proceeding to Option 4, Value All.

1. If you wish to REVIEW the entire set of inventory items in memory enter a dollar sign ($) as the search characters when VIC asks you Search for?

2. REVIEW displays every record starting with the first, one at a time.
3. Once started you must continue until all items are displayed. You cannot prematurely exit.
4. The last item is displayed as either:
    (Last record contents)
    END
    or simply as
    END

SEARCH (DESTRUCTIVE) (3)

Option 3, SEARCH, erases and changes the data in memory. In order to run other options once you have selected the SEARCH Option 3 you must reload the data. Entering Option 3 enables you to SEARCH your data for whatever characters you specify.

1. When you select Option 3 the VIC asks you:
    Search for?
2. Type in any characters, numbers or special symbols that you wish to SEARCH for and press RETURN. The inventory items currently in memory are checked for matching data. Remember that the data fields in every inventory item (i.e. record) are checked for a match. The computer scans through all of the inventory items (records) in the file; if a match is found the record that satisfied the search is displayed.

For example, if you wanted to search your inventory for your Thunderbird car described as TBIRD you enter TBIRD. Assume you find this match. Then VIC would retrieve and display the matching inventory record as follows:

    Search TBIRD
    Item #: 5
    Category: CAR
    Serial #: FD 128597AJ
    Purch date: 3/1/55
    Purch price: 200.00
    Curr value: 5000.00
    Descr: 1950 TBIRD
    Hit a key

3. SEARCH Option 3 displays the first match found. This SEARCH may be continued by typing any key and you do not need to press RETURN. You can continue until you are told that all of memory has been searched. See step 4 below.
4. If there are no more records to search because the entire file was searched the VIC tells you that fact displaying the following for 5 seconds:
    Search (search characters)
    END

NOTE: If you have run Option 3, SEARCH, in order to use the other options you must again LOAD your inventory file. The SEARCH option rearranges memory and some of your data has been erased in the process. You must reload memory before performing other options.

If you have run Option 3 for REVIEW only, then your memory is safe and memory data has not been erased. You do not need to reload memory before performing any other options.

VALUE ALL INVENTORY (4)

Option 4 calculates the VALUE of ALL inventory items. Although VIC's memory is capable of holding only 25 items at a time, it is possible to calculate totals on all the categories of the many inventory files. To do this the Inventory Analysis program ignores some data, such as serial number and purchase date. This means that the way data is organized in the computer for the Value All Options is different than in the other options. Also, Option 4 contains its own method of reading your files into memory. You do not use LOAD: Option 4 prompts you and leads you through the steps of reading your files.

1. Have your tape (or disk) ready when you select Option 4, Value All. The program prompts you with ERASE and you are given a chance to change your mind, in which case you are returned to the Menu. VIC displays:
    Erase?
2. If you want to stop enter:
    "n" and press RETURN
3. If you want to proceed with calculating the total inventory value enter:
    "y" and press RETURN
4. When proceeding with Option 4, Value All, you are prompted to enter a data file into memory. You can use any of your inventory files by following the standard tape (disk) handling rules.

NOTE: You must have your tape in the cassette and ready to be read into memory before you press the PLAY button. Don't wait until this point to decide to rewind the tape.

5. After the file is read into memory you are asked if you wish to enter another file. You may repeat this procedure as many times as you like until all the desired files are accumulated. VIC asks:
    Another?
6. Enter a "y" for yes, if you want to read in another file. Otherwise, enter an "n", or any other character, for no. Then press RETURN.
7. After you are done loading all the files that are of interest to you, then the Total Purchase Price and Total Current Value of each of the categories of items is calculated and displayed. If there are more than ten categories then they are displayed ten at a time, with the message "Hit a key". Depress any key

to see the remaining category totals. Repeat this process until you have seen them and their total values. After the totals are displayed the last line on the screen displays:
   Hit a key

8. Depress any key on the keyboard and the screen asks if you want to see everything again.
   See again?

9. If yes, enter a "y" and depress RETURN; if no, enter "n" (or any other character but "y") and depress RETURN.

END THE PROGRAM (5)

   Option 5 ends Home Inventory Part 2. When you choose Option 5 you are ready to terminate Program 2 and use your VIC for other programs. If you wish to run the Part 2 program again simply type RUN.

STEP BY STEP INSTRUCTIONS: PART 2

   The following is a step by step lesson which shows you how to use Part 2 to analyze your home inventory data.

1. Type: NEW (to clear old program) The VIC says:
   ready

2. Put the cassette tape with side 2 facing up into the Datassette. REWIND the tape.

3. Type LOAD and hit RETURN. The VIC displays:
   Press play on tape.

4. Press the play button on the Datassette.

5. The VIC displays:
   searching
   found HT2
   loading
   ready
   (Each version of the program is saved on cassette tape twice so if the first version does not load properly, try step 3 again)

6. Type the word RUN and hit RETURN. This starts Program 2, Inventory Analysis.

7. The title page is displayed briefly, then the MENU appears on the screen followed by the word Option? Type the number 1 and hit RETURN. The VIC says:
   Inv. Name?

8. Type the name of your items file EXACTLY AS IT APPEARED IN STEP 20 OF PART 1 INSTRUCTIONS and hit RETURN. The VIC says:
   OK (y/n)?

9. If the name is wrong type the letter "n" to go back and change it. Otherwise, type the letter "y" and hit RETURN. The VIC says:
   Prepare (name)
   file
   Hit a key

10. Type any key. The VIC says:
   press play on tape

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11. Depress PLAY on the tape unit. The VIC displays:

Menu Options:
1. Load data   4. Value all
2. Value a category   5. End
3. Search/Review memory

12. After your file of inventory items is loaded into the VIC, the MENU returns to the screen.
13. Request Option 3 and use the nondestructive memory "Review" to make sure your items are correct. Type the number 3 and hit RETURN. The VIC says:
   Search $ and displays item 1.
NOTE: If you were looking for all categories dealing with auto expenses, for example, you might type AUT to tell the VIC to look through all the items in memory for the letters AUT.
15. Hit a key. This lets you look through all of your items.
16. After you've seen the last item, the MENU re-appears.
17. To TOTAL a CATEGORY, Option 2, type the number 2 and hit RETURN. The VIC says:

18. Type in a category name. If the category doesn't exist the total purchae price and current value of the non-existent category are displayed as zeroes.
19. If you have selected a category that does contain items, the current value and cost totals for that category are displayed. VIC displays both totals on the screen until you hit a key.
20. To proceed hit any key. The VIC displays the Menu once more.
21. To get the TOTAL costs/values for ALL CATEGORIES COMBINED, type the number 4 and hit RETURN. This requests Option 4, Value All. The VIC says:
   Erase Cont.?
22. Type "y' and hit RETURN to calculate total values/costs, category by category. VIC displays:
   INV. Name?
23. Enter a file name and press RETURN. VIC displays:
   OK (y/n)?
NOTE: If you enter "y" (for yes) to proceed and to calculate the values then you have caused description, date of purchase, etc. to be erased from current memory. This was required so Program 2 could calculate the costs and values for each category. This does not mean anything has been lost from your items file. You can still go back and retrieve all item information.
24. Put your tape into cassette and rewind it, if necessary, before proceeding.
25. Enter "y" and hit RETURN. VIC displays:
   Prepare (filename)
   file
   Hit a key

26. Depress any key. VIC displays:
    Press play on tape
27. Press PLAY on tape and let tape play. VIC displays:
    OK
    Searching for (filename)
    found (filename)
    Another?
28. Enter "n" and hit RETURN. The VIC displays the totals per category.
29. To stop the running total, type the letter N or hit the RETURN key to display the MENU
30. To END the program, type the number 5 and hit RETURN

SUMMARY

You have now operated both parts of the Home Inventory Package. You have used Part 1 (Program 1: Purchases and Current Values) to create and store your home inventory items into files on tape or disk. Additionally, you have used Part 2 (Program 2: Inventory Analysis) to calculate and analyze your possessions. Keep this manual with you as you expand your home inventory information and analyze it. It will assist you in your many uses of your inventory package.

RECOVERING FROM ERRORS

ERROR	TO RECOVER
? REDO FROM START ? EXTRA IGNORE	The errors might occur if you type in a letter when the program expects a number or if you had a comma or a colon in the data you entered. Just re-enter the data correctly.
Accidentally pressing the RUN/STOP key	Type CONT and press R E T U R N
? FILE NOT FOUND ERROR ? DEVICE NOT PRESENT ERROR OTHER ERRORS	Any of these errors will require you to restart the program completely. You should press the RUN/STOP key and the RESTORE key simultaneously to reset VIC. Then type RUN to restart the program.
No Error message but the file is not being found.	You had the tape positioned beyond the point where the file resides on tape so it couldn't be found. The file might not exist on that tape (or disk).

RECORD CONTENTS

TABLE 1

RECORD CONTENTS

Field Name	Meaning	Field Size MAXIMUM number of characters	MINIMUM number of characters	Characters Allowed in field
Cat	Category code Maximum number of categories allowed: 25	3	1	Letters Numbers Any keyboard characters spaces
Ser #	Serial number	81	1	Letters Numbers Any keyboard characters spaces
Date	Date of purchase	8	1	Letters Numbers Slash (/)
Pur Price Cur Price	Purchase Price Current Price	8	1	Numbers Period (.) Values allowed are 0 to and including 32767.00
Desc	Description	10	1	Letters Numbers Any keyboard characters spaces

Examples of correct data	Characters not allowed	Results if Exceeded Max. Value or Max. Characters	Results if field is left blank
ART H#1 RM1 DEN RM2 1ST 125 2ND		Characters in excess of 3 are ignored and are lost	Cannot leave this field blank; it returns you to the MENU.
K91-123-25 AK #22135690 B/AX.223 A 1B #25X		Characters in excess of 81 are ignored and lost	Contains blanks or spaces
2/1/82 2 Jan 82 Jan 2 82 Jan282 Jan/2/82 2 Jan.82	Comma (,)	Characters in excess of 8 are ignored and lost	The Catalog name is inserted into here automatically
0 32767.00 0.99 32766.99 0.00 .99 1.	dollar sign ($) letters anything other numbers and a period values over 32767.00 are invalid	Value of zero is used (0) for either price	Either price is filled with ("garbage") unpredictable data
OILPICTURES suits ant. vase tuition		Characters in excess of 8 are ignored and lost	The Catalog name is put into here

Menu Part 1

Table 2

MENU TABLES

PROGRAM 1 — Purchases and Current Value			
MENU OPTION NUMBER	**OPERATION**	**Keyboard INPUT**	
1 LOAD	LOADS an inventory file into memory from tape or disk	Hit a Key y/RETURN n/RETURN Any other key/RETURN	
2 REVIEW	REVIEW the contents of Memory. 1 item at a time, starting with the 1st entry.	n space bar e Any other key	
3 ADD	ADD an item	data/RETURN y/RETURN n/RETURN Any other key/RETURN RETURN	
4 CHANGE	CHANGE an item: reenter an item completely	n c e	
5 DELETE	DELETE an item: Renumbers all items	n d e	
6 SAVE	SAVE this inventory file onto tape or disk. Then Program #1 auto-matically exits	Hit a key y/return n/RETURN any other key	

MEANINGS	Files Allowed	Effects on Memory
Readies tape or disk File name OK; proceed with name File name wrong; reenter file name File name wrong; reenter file name	For 1 file	Stores data item into memory from tape or disk

get next item
  get next item
  exit; return to Menu
  get next item
	For 1 file	N/A

Enters data Data is correct; add this item Data is wrong; reenter this item Data is wrong; reenter this item Exit; no more data to add; then return to MENU	N/A	Adds data item to memory
no change, proceed to next item in file change this item exit; no more changes return to menu	N/A	Changes data items in memory
no change deletes this item; remembers all following items exit; no more deletions, return to menu	N/A	Deletes data item from memory
readies tape or disk file name OK; proceed with save: Program 1 ends file name wrong; reenter file name file name wrong; reenter file name	For 1 file	Save memory onto tape or disk Erases memory when done

Menu Part 2
Table 3

MENU TABLES

PROGRAM 2 — Inventory Analysis				
MENU OPTION NUMBER		**OPERATION**	**Keyboard INPUT**	
1	LOAD	LOADS an inventory file into memory from tape or disk	Hit a Key y/RETURN n/RETURN · Any other key/RETURN	
2	VALUE A CATEGORY	Calculate the VALUE of A CATEGORY for the one inventory file currently loaded into memory	(Category name)/RETURN RETURN	
3	SEARCH REVIEW MEMORY	SEARCHES MEMORY for and displays every record that contains the specified data one at a time. Erases some data so must reload your file after you exit this option. Reviews memory	(Search data)/RETURN Type a key $/RETURN RETURN	
4	VALUE ALL	Calculates the VALUE of ALL inventory files currently loaded into memory	File name y/RETURN n/RETURN any other key/RETURN y/RETURN n/RETURN any other key/RETURN y/RETURN n/RETURN any other key/RETURN	
5	END	END Program #2	Program 2 ends	

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MEANINGS	Files Allowed	Effects on Memory
Readies tape or disk File name OK; proceed with name File name wrong; reenter file name File name wrong; reenter file name	For 1 file	Stores data item into memory from tape or disk
Enters category name and calculates its value Exit; no more categories to be evaluated	For 1 file	N/A
searches for the data entered here searches and displays every inventory item Continues search for next match	For 1 file	Erases memory when done.
reviews memory 1 item at a time reviews memory 1 item at a time	For 1 file	Does not erase or change memory

gives a name to the file
file name OK: proceed to load it
file name wrong; reenter file name
file name wrong; reenter file name
Another file?
  Yes; want to load another file
  No; no more files to be loaded
  No; no more files to be loaded
See again?
  Yes; want to see all matching
     items again
  No; don't show it again, exit to menu
  No; don't show it again, exit to menu
	For as many files as you want to enter	Erases Memory when done.

N/A	N/A	N/A

N/A — not applicable

THE VIC
TYPEWRITER

WORDPROCESSING ON THE
VIC TYPEWRITER

THE VIC TYPEWRITER™

WORDPROCESSING ON THE VIC 20

If this is the first time you've ever used a wordprocessor, start here (if you're an old pro at wordprocessing, you can just skip to the section on commands).

The VIC TYPEWRITER is a very simple wordprocessor, but you will find it has many of the commands that larger, more expensive systems include. All errors can be corrected **before** your text is printed. The VIC TYPEWRITER can be run on any Commodore VIC from the basic 5K machine to the fully expanded 32K VIC. You can save text files to either tape (on the Commodore Datasette) or disk (on the VIC 1540/1541 DISK DRIVE). Your text is printed on the VIC 1515/1525 Graphic Printer.

The VIC TYPEWRITER gives you 45 lines of text on an unexpanded VIC, 185 lines on a VIC with a 3K MEMORY EXPANDER CARTRIDGE (VIC-1210) plugged in, 417 lines with an 8K MEMORY EXPANDER (VIC-1110), 790 lines with the VIC EXPANSION MODULE (VIC-1010) and a 16K RAM PACK (VIC-1111), and 1207 lines when the VIC is fully expanded.

LOADING INSTRUCTIONS

Place the VIC-TYPEWRITER tape in your Datasette.

Type LOAD and hit the RETURN key. The VIC will respond by printing:

    SEARCHING
    FOUND VC TYPE
    C1981 CBM
    LOADING

READY (and a blinking cursor)

Now type RUN (and hit the RETURN key)

The VIC will clear the screen, print an INFORMATION line at the top of the screen, and put a solid blue cursor at the top left hand corner, showing that the VIC is waiting for your letters.

INFORMATION LINE

The top line on the screen is known as the INFORMATION LINE. The number in the upper left corner shows the number of the line you are currently on. The number in the upper right corner of the screen tells you how many lines you have available. When you fill up the available area with text you should SAVE (and possibly print) what you have done, and start a new text file.

If you ever break out of the VIC TYPEWRITER program, you can get back in without losing your text by typing: **GOTO43**

COMMANDS

DIRECT COMMANDS

Direct commands cause something to happen immediately. When you hold down the SHIFT KEY and type RUN/STOP, for example, your entire text is IMMEDIATELY erased. All of the editing commands are direct commands.

f1	Show next screen of text
f2 (SHIFT f1)	Print
f3	Insert a line
F4 (SHIFT f3)	Delete a line
f5	SAVE (to tape or disk)
f6 (SHIFT f5)	LOAD (from tape or disk)
HOME key	Home to top of current page
DELETE key	Delete a character
INSERT key	Insert a character
SHIFT/RUN-STOP	Erase entire text
RUN-STOP key	Home to top of current page
CRSR UP key	Move the cursor one line up
CRSR DOWN key	Move the cursor one line down
CRSR RIGHT key	Move the cursor one space right
CRSR LEFT key	Move the cursor one space left
BACK ARROW key	TAB five spaces from the current position.
SHIFT/RETURN key	Put a carriage return (checkmark) at the end of the line and go to the next line.
RUN-STOP & RESTORE	Exit the VIC TYPEWRITER program.

INDIRECT (EMBEDDED) COMMANDS

Indirect commands are used to provide needed boundaries for certain routines in the TYPEWRITER program. Indirect commands will not be executed immediately; instead, when you type one of them, a character (usually REVERSED) appears on the screen. For example, when you hold down the CTRL key and type a 2, a reversed **e** appears on the screen. Everything you type after that will appear normal on the screen but will print in ENHANCED CHARACTERS (double size) on the printer.

COMMAND	SHOWS AS	RESULT
RETURN	**CHECKMARK**	**carriage return**
CTRL 1	**REVERSED P**	**end of text marker for PRINT**
CTRL 6	**REVERSED UP ARROW**	**end of text marker for SAVE**
CTRL 2	**REVERSED e**	**ENHANCED PRINTING on**
CTRL 3	**REVERSED POUND SIGN**	**ENHANCED PRINTING off**
CTRL 9	**REVERSED r**	**REVERSE PRINTING on**
CTRL 0	**REVERSED R**	**REVERSE PRINTING off**

USING DIRECT COMMANDS

COMMAND: **NEXT SCREEN**
KEY: **f1**
PURPOSE: **To rapidly move from one part of the text area to another**
DESCRIPTION:
   This key lets you see the next 20 lines of text. If you are on line 5, for example, when you hit this key, line 25 will scroll to the top of the screen. When you reach the last line of text, the f1 key will bring you back to the top line (line 0).

COMMAND: **PRINT**
KEY: **f2**
PURPOSE: **Print the current text area**
DESCRIPTION:
   This key PRINTS the text currently in memory to the VIC printer. The text is printed from the current text line (so if you want to print the whole text, you have to go to the top of the text area) to either the END OF PRINT marker (CTRL 1) or to the end of the text area.
   If the END OF PRINT marker is missing, the VIC Typewriter will print whatever is in the text area after your text. In most cases, this will just be spaces, which just wastes time and paper.
   During PRINTing all the indirect (embedded) characters are obeyed.

COMMAND: **LINE INSERT**
KEY: **f3**
PURPOSE: **Insert an entire line**
DESCRIPTION:
   This key opens up a line in the text at the current cursor position, which lets you add more text. The LINE INSERT command will not operate if there is no room to insert (if there is something on the last line of the text area already).

COMMAND: **LINE DELETE**
KEY: **f4**
PURPOSE: **Delete an entire line**
DESCRIPTION:
   This key deletes the line the cursor is on, and moves the entire text up.

COMMAND: **SAVE**
KEY   **f5**
PURPOSE: **Save the current text to tape or disk**
DESCRIPTION:
   This key saves the current text area to tape or disk, from the line the cursor is on to either the END OF SAVE marker (CTRL 6) or to the end of the text area. You must supply a name for the SAVE. The name must be on the first line of the area to be SAVEd. The format of the name should be:

*#:FILENM

Where # is the device number. It should be 1 for tape and 8 for disk.

FILENM is the 6 character filename for the SAVE. It will be filled in with spaces if it is less than 6 characters. It should be all capital letters, otherwise the name will look very strange on a load or directory. If you are SAVING to disk, and a file with that name already exists, the red error light on the drive will flash, and no save will take place. Change the name and try again.

The END of SAVE marker tells the VIC typewriter where the end of the area you want to save is. If the marker isn't there, the VIC will save the entire text area. This could take some time if you have an expansion memory.

COMMAND: **LOAD**
KEY: **f6**
PURPOSE: **Load a text file into the text area**
DESCRIPTION:
This key loads a file from tape or disk into the text area. A name and device number must be given for the LOAD. The format is the same as for SAVE. When loading from tape, the names of the files it finds will be displayed. If there is no file by that name on the disk, the red error light will flash, and the file will not be loaded.

COMMAND: **HOME**
KEY: **HOME (or RUN-STOP)**
PURPOSE: **Put the cursor on the top left corner of the screen**
DESCRIPTION:
This key moves the cursor up to the top left corner of the current screen page.

COMMAND: **DELETE**
KEY: **DELETE**
PURPOSE: **Delete a single character**
DESCRIPTION:
This key removes the character the cursor is currently on, and moves the rest of the text one space left. The checkmark (return) acts as a limit for this key. It moves up to and including the next checkmark. If there are no checkmarks, it will shift up to the end of the text area.

COMMAND: **INSERT**
KEY: **INSERT**
PURPOSE: **Insert a single character**
DESCRIPTION:
This key opens up a one character space in a line, by shifting everything to the right of the cursor on space to the right. The checkmark (return) character acts as a limit for this command. If

there is a checkmark anywhere after the cursor, the INSERT will be allowed only if there is a space after the checkmark. That's why it is a good idea to end a paragraph by putting a check right after the last letter, and on the end of that line. This gives you space to insert. If you need more, go down one past the last line in the paragraph and do a line insert to give you more room.

COMMAND:	**ERASE ALL**
KEY:	**SHIFTed RUN-STOP**
PURPOSE:	**Erase the entire text file in memory**

DESCRIPTION:
   This key erases the entire text area. Be very careful in using this key, because once it's gone, it's gone. Make sure you have saved your text properly before using this key.

COMMAND:	**CURSOR UP**
KEY:	**CRSR UP**
PURPOSE:	**Move the cursor up one line**

DESCRIPTION:
   This key moves the cursor up one line. When the cursor reaches the top line of the screen, it will SCROLL UP, bringing on the next line of text at the top of the screen, unless the cursor is already on line 0.

COMMAND:	**CURSOR DOWN**
KEY:	**CRSR DOWN**
PURPOSE:	**Move the cursor down one line**

DESCRIPTION:
   This key moves the cursor down one line. When the cursor reaches the bottom line of the screen, it will SCROLL down, bringing on the next line of text at the screen bottom, unless the cursor is already on the last line of the text area.

COMMAND:	**CURSOR RIGHT**
KEY:	**CRSR RIGHT**
PURPOSE:	**Move the cursor one space right**

DESCRIPTION:
   This key moves the cursor one space to the right. Letters are not erased as the cursor moves over them. If the cursor is on the last column of the screen and this key is hit, the cursor will go down to the beginning of the next line (unless the cursor is already on the last line of the text area).

COMMAND:	**CURSOR LEFT**
KEY:	**CRSR LEFT**
PURPOSE:	**Move the cursor one space left**

DESCRIPTION:
   This key moves the cursor one space to the left. Letters are not erased as the cursor moves over them. If the cursor is on the first line of the screen and this key is hit, the cursor will move up to the last space of the previous line (unless the cursor is already on line 0).

COMMAND:	TAB
KEY:	BACK ARROW
PURPOSE:	Tab out 5 spaces from the current position

DESCRIPTION:
   This key advances the cursor 5 spaces. It is possible to scroll down using the tab key, but the TABs will be calculated using the start of the line if this happens.

COMMAND:	END OF PARAGRAPH
KEY:	SHIFTed RETURN
PURPOSE:	End a paragraph properly

DESCRIPTION:
   This key places a checkmark (return) at the end of the current line. Since all spaces are printed in the VIC Typewriter, it is necessary to put a checkmark at the end of last line of each paragraph. Otherwise the spacing on the next line will be incorrect. Also, as mentioned in INSERT, it also lets you use the INSERT function more easily.

COMMAND:	EXIT
KEY:	RUN-STOP and RESTORE keys
PURPOSE:	Exit the VIC typewriter program

DESCRIPTION:
   By holding down the RUN-STOP key and hitting the RESTORE key, you can exit the VIC Typewriter program. This is just the thing to stop a printout you know is not correct, or a SAVE, etc. To get back into the VIC typewriter program without destroying your text, type GOTO43 (and hit RETURN). DO NOT TYPE RUN. Typing RUN will erase all of your text.

USING INDIRECT COMMANDS
   The following are the indirect commands which are available.

RETURN This command does a carriage RETURN. A checkmark appears on the screen. It is also used as a limit for the INSERT and DELETE KEYS.

CTRL 1 Type CTRL and the number 1 to specify the end of the text you want to PRINT to printer. A REVERSED P appears on the screen.

CTRL 6 Specifies end of text SAVEd (not required if you want to SAVE entire text area). A REVERSED up arrow appears on the screen.

CTRL 2 Turns ENHANCED PRINTING (double size characters) on. A REVERSED e appears on the screen. Enhanced mode stays on until turned off. The line length is cut in half. However, this does not go into effect until the next RETURN (checkmark). This lets you mix ENHANCED and normal

characters without problems. If you want to type an entire section in ENHANCED mode type CTRL 2 followed by a RETURN (checkmark). That way, wordsplitting will be handled properly.

CTRL 3   Turns ENHANCED PRINTING mode off. A RE-VERSED pound sign will appear on the screen.

CTRL 9   Turns REVERSE mode ON. Like on the normal VIC, REVERSED mode will last until either the next RETURN (checkmark), the printer goes to the next line, or a REVERSE OFF occurs. A REVERSED r will appear on the screen.

CTRL 0   Turns REVERSE mode OFF. A REVERSED R will appear on the screen.

VIC TYPING TUTOR

LOADING INSTRUCTIONS
  Place the tape labeled "VIC TYPEWRITER (SIDE 2)" into your cassette unit and type the word LOAD. The loading sequence is the same as for the VIC TYPEWRITER.

USING THE PROGRAM
  The VIC typing tutor is a program to help improve your typing skills. It puts random sentences on the screen — YOU HAVE TO TYPE THOSE SENTENCES CORRECTLY AS FAST AS YOU CAN. After you've typed each sentence correctly the program will rate you. When you are finished with the typing tutor hold down the RUN/STOP key and hit the RESTORE key.

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