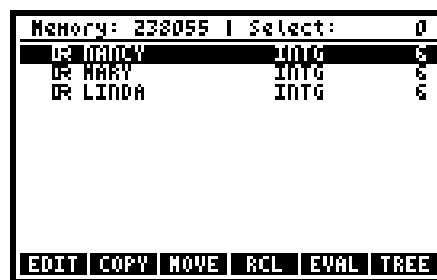
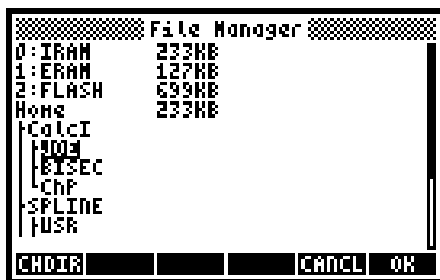


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## Calculator Lesson 9

### Connectivity and Backup

The calculator has certain backup provisions built into it. Suppose you have a directory called JOE and an object in it call MARY, and you would like to create a backup of MARY. MARY can be any type of object, including a subdirectory of JOE. Get into directory JOE and press LS FILES. You will get a screen like the one on the left below. If you have an SD card in the calculator there will also be a row **3: SD**. JOE should be highlighted, but if not, use UA or DA as needed to get it highlighted, then press



F6-OK. You will get a screen similar to the one above on the right. Use UA or DA as needed to highlight MARY then press F2-COPY and you will be back on the screen on the left. Use UA or DA as needed to highlight one of rows 0:, 1:, 2: or 3: (if there is SD card in the calculator), then press F6-OK. MARY will be copied into the chosen memory and you will be back in the screen on the right. To verify that MARY has been copied into the desired memory area press F6-TREE to return to the screen on the left, use UA or DA as needed to highlight the chosen memory area then press F6-OK. When you are done with your backup work press CANCEL to return to normal calculator operations.

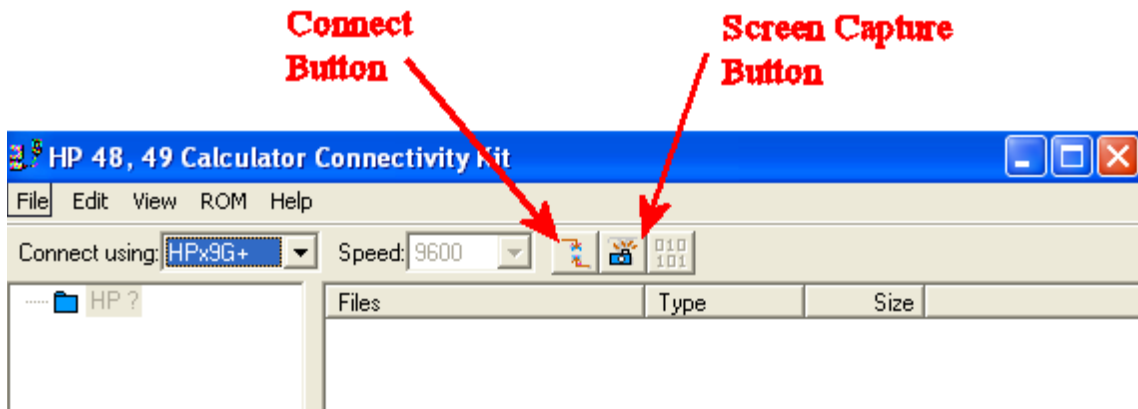
Using 0:IRAM for backup is not a good idea for two reasons. First, this is the calculator's working memory so storing additional files there simply reduces your working capacity and can slow down the calculator. Second, if the calculator memory is cleared the backup will be lost along with the original. Memory areas 1:ERAM and 2:FLASH are better because they are not part of the calculators working memory and are not cleared if the memory is cleared. However, if the calculator is lost or severely damaged, the backup will again be lost with the original. The best choice is an SD card that can be removed and stored in a separate location from the calculator.

An alternative to an SD card is to back up your calculator on your computer. The CD that comes with the calculator has a program called Connectivity Kit that allows the calculator to communicate with a PC or laptop. This program is also available from the HP Web. If possible it is preferable to get the program from the Web site as that will be the most recent version; the one on the CD may be older and some of them do not work properly with some versions of Windows. The first task, of course, is to install the program on your PC as you would any other new software. Go to [hp.com](http://hp.com), and navigate to the connectivity kit download page. Thiel students can get to the correct page on the HP site by going to [k:\hp](http://k:\hp) and double clicking on the internet link to be found in that

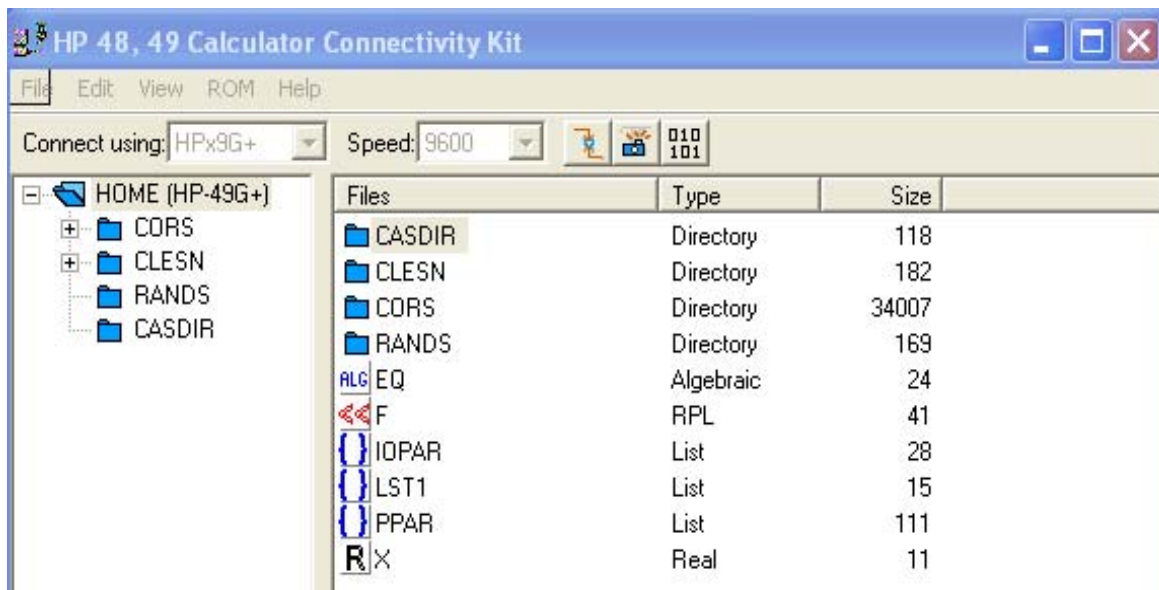
folder. Try to follow the instructions on that page, but don't be surprised if you get lost. The best bet is to call HP calculator support 1-800-443-1254 op3 op 0 and let one of their technicians guide you through the process.

Once the software has been properly installed, use the USB cable that comes with the calculator to connect it to a USB port on the PC and turn the calculator on. Now run the connectivity program and you should get a screen like the one below.

**NOTE:** I was using the HP49g+ when I created this images below. The new version of the software includes the 50 on the list of calculators on the title bar and you should now connect using "AUTO" for any of the applicable calculators.



On the calculator press RS RA then on the computer click on the Connect Button and you will get a screen similar to the one below. Note the change in the Connect Button.



It shows that the calculator and the PC are now connected. To back up the entire calculator working memory click on File then Backup, navigate to the folder on your PC where you want to save the backup, then press Save. NOTE: This process only backs up the working memory, IRAM, not ERAM or FLASH.

You can also copy individual files and directories from the calculator to your computer. Navigate to the desired file on the screen shown above the same as you navigate through Windows Explorer. Now open Windows Explore, navigate to the folder where you want to save your file and drag and drop it into Windows Explorer. You can now e-mail that file to a buddy who can then reverse the drag drop to load on another calculator.

You can also use the connectivity program to capture the calculator screen images. Press the Connect Button to break the electronic connection between the PC and the calculator. Make sure that on the calculator System Flag 33 is OFF and System Flag 34 is ON. Set up the calculator screen exactly as you want it, click on the Screen Capture Button on the PC then press ON(hold) UA on the calculator. After a few seconds an image of the calculator screen will appear in a popup on your PC. This can now be saved as a JPEG or bitmap or copied directly to a document in a word processor. This is how the screen images on these tutorials were created.

Another form of backup, and also a way to share data and programs with a friend, is to transfer the information to another calculator. Make sure that FLAG 33 is checked (Transfer via IR) on both calculators. The calculator that is to send information should be set to the directory containing the file or directory to be sent. The calculator that is to receive the information should be set to the directory where it is to be stored. Place the two calculators with the tops about a half inch apart and the little arrowheads pointing to each other. Press the APPS key and choose "2. I/O functions" and press F6-OK on both calculators. On the calculator that will be sending, choose "1. Send to Calculator"; press F6-OK; press F2-CHOOS; select the item to be sent; press F6-OK. The calculator that will receive should select "2. Get from Calculator". Both calculators should now be ready; on the calculator sending, press F6-SEND, and on the calculator that is receiving press F6-OK. Both calculators will say "Connecting" and once they have made the connections the file or directory will be transferred.

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