DUAL: Master ZIP Disk (OR FLASH Drive) and Its Shadow on Hard Disk

While ZIP disk/FLASH Drive is very convenient for daily re-organization of files and folders, and transfer between computers, it is more vulnerable than the hard disk.   It occasionally suffers a disk damage or a loss.   When your ZIP disk/FLASH Drive has a lot of important files, and is changing every day, this **'Dual'** may prove convenient for you.   Even this 'Dual' don't help you much, if you go through all the steps here, then you may realize the power of simple DOS batch programming which you can write by a simple text editor.   Then you become different.

> I still use a lot of ZIP disks, partly because re-formatting makes ZIP disks a brand new disk (many times, repeatedly).   While I don't know how to re-format a FLASH drive.   But the world is moving to FLASH drive, and by my brief test, the DUAL mechanism and program works exactly in parallel either ZIP or FLASH.   Now, I am gradually editing explanation below from ZIP to ZIP_FLASH.

Mechanism:

This principle is so simple, as you can guess from the title.   The entire ZIP disk/FLASH drive contents are copied onto a hard disk under the name of ZIP_FLASH's label name.   And periodically, say every week or every month, run a scanning program called **'PC Dual.exe/ Mac Dual / Linux_Unix Dual '** (a set of simple executable files) to find out which directories/folders changed its contents (addition or deletion of files).   Then you can re-copy only the changed directories/folders.   By this way you can have a secure backup of ZIP_FLASH in case of a damage or a loss.

ZIP_FLASH has ALL and computers are empty, why?

This is from my experience.   I use multiple computers at various places.   When I organized all my files on ZIP_FLASH, I am ready to go everywhere by just grabbing the pouch of ZIP_FLASH.   The files are even jumping around Macintosh ⇔ Linux_Unix ⇔ PC everywhere, and all vice-versa. Given the situation, how convenient when the ZIP_FLASH has **all** personal files and they are organized.   So, I made ZIP_FLASH to hold **all** files as the **master** disk(s), and computer(s) were always empty.   Wonderful!   For a while I was very happy, then I encountered a terrible accident a few times over years.   Computer said that your ZIP disk couldn't be read.   Something wrong happened on the ZIP disk.   Experts at local computer shops rescued some files by Norton Disk Doctor or alike, but the accidents made me cautious.

Now I developed a simple backup system of valuable ZIP_FLASH in advance to an accident.   The backup system comprises two steps, (1) firstly, the entire ZIP disk/FLASH Drive contents are copied onto a hard disk, and I call it **"shadow"** of the master ZIP_FLASH, and (2) secondly I developed a scanning comparison program **'Dual'** which compares the **master** ZIP_FLASH and its **shadow**.   The shadow's sole purpose is to restore the master ZIP_FLASH when needed, and I recently use an external removable hard disk (plain hard disk, no OS) for the shadow's home.   When a serious damage on or a loss of the **master ZIP_FLASH** happens, still I can safely restore the master from the shadow.   Only the most recent files may be lost.

One master is no predicament

Before the work, files are copied from the **master** ZIP_FLASH to a computer. Then after the work, all files are saved back to the master ZIP_FLASH. With **only one master**, no scatter of multiple files among computers happens, and no predicament. Always, the **master** ZIP_FLASH has the most recently updated files. Since my computers are empty (except software and OS_operating system), crash of Operating System didn't affect me at all. Heaven! Although the system are so good and stable recently, over the years I had OS accidents several times. But my master(s) were always **out of the system**, and I was completely safe about my personal files. The victim of system crash were only a few dozen of e-mails which hadn't been saved to ZIP_FLASH. This is a very secure way all around.

How to use 'Dual':
PC Dual.exe (Windows 95/98/2000/XP) :
Mac Dual (Classic Macintosh Vintage OS 7/8/9) :
'Dual' compares the **master** ZIP_FLASH and its **shadow** on a hard disk. They consist of DOS **batch programs** and simple executable files. You can experience a couple of useful techniques when you go through these set of executable files. You can use this **'Dual'** as your study guide, since DOS batch programs are so easy to understand and the C program codes are posted. For Macintosh users, make sure to read another explanatory file "**Mac-note.pdf**", which has critically important information specific to Macintoshes.

PCDual.exe/MacDual is a self-extracting archives (PC)/ a StuffIt Expander archives (Mac) which will become six (PC) or five (Mac) tiny executable files, and you will need to supply your disk's information, as described details after this table.

PC	Macintosh Vintage OS
'Sample_1.txt' or **'Sample_2.txt'** -> look at inside and edit it. -> change **.txt ▶ .bat** (then double clicks) -> writes 'Dir-ZIP.txt' & 'Dir-SDW.txt' & 'Dir.txt'.	
'0_Adjust.exe' -> needs 'Dir-ZIP.txt' & 'Dir-SDW.txt' -> writes 'RESULT.txt'.	**'1_Get_MPW_first'** -> tells how to get Apple's MPW Shell. -> needs '1_Ref'.
'1stBatch.bat' -> makes a directory structure (\ZIP_FL\, \SHADOW\, & \DIFF\).	**'2_Introduction'** -> needs '2_Ref'.

'2Batch.exe' (Batch files generator)
 -> needs 'DIR.txt'.
 -> makes 'SDWBatch.txt', 'ZIPBatch.Txt',
     and 'LookUp.Txt'.
	'3_MPWBatch' (Batch command lines
	      generator for MPW)
	 -> needs 'Header'.
	 -> makes 'Batch', and 'Path'.

'3Eraser.exe' (DATE-TIME Stamp Eraser) -> needs 'LookUp.Txt'.	**'4_Eraser'** (SIZE Stamp Eraser) -> needs 'Header', and 'Path'.
'4Diff.exe' ('Difference' between SHADOW and ZIP_FL) -> needs 'LookUp.Txt'. -> writes 'GrandSum.Txt'.	**'5_Diff'** ('Difference' between SDW and ZIP) -> needs 'Header'.
'5Rename.exe' (Rename Batch file generator, optional) -> needs 'LookUp.Txt'. -> makes 'Rename.Bat'.	
'DIR.Txt' -> You need to provide your ZIP disk's/FLASH drive's directory information, now it is semi- automatically created when you run 'Sample_1(2).txt' batch file.	**'Header'** -> You need to provide your ZIP disk's content folder names, see below how to make.

PCDual Step by Step Protocol:

(1) Make **.txt** extension visible.

(Win95/98/2000/XP): Explore -> View [Tools (2000/XP)]-> Options... (or Folder Option...) -> View-tab, and do **not** select the line 'Hide file extensions for known file types' [OR 'Hide file extensions for file types that are registered' (Win95)]. Then the **.txt** extensions show up.

(2) Double clicks **'Sample_1.txt'**. You will see something as down below. This is the first DOS batch lesson. We use **Notepad** to edit it. I have a ZIP_FLASH which is labeled "Web-Arch.02" (Web archives volume 2). Its shadow on a hard disk locates at (F:\TO-CD\WEB-ARCH.02\), since I periodically make a CD backup, so I placed the **shadow** under \TO-CD\ directory. Under F:\TO-CD\WEB-ARCH.02\, the entire content of the Web archives volume 2 was copied a few months ago. Now, I want to know whether there are new folders in Web archives volume 2 of ZIP_FLASH since the last update of the shadow. For this convenience, I developed a comparison program which compares just folder/file names between the master ZIP_FLASH and its shadow. The executable file is named "**0_Adjust.exe**" (it stands for folder adjustment). **"0_Adjust.exe"** needs directory listing information from both the master and the shadow ('Dir-ZIP.txt' & 'Dir-SDW.txt'). I can make these two files manually at DOS command lines, but also I can put them together all DOS command lines into one DOS batch program such as 'Sample_1.txt'. Then double-click execution of the DOS batch program makes two file at once. And this DOS batch program can be used later and recyclable.

The lines which start with **::** are comment lines and have no effect, such as following two lines.

```
:: for 0_Adjust.Exe
```

Then actual DOS batch program starts as below,

	Meanings
`G:`	Change to the master ZIP_FLASH drive (in this case the ZIP_FLASH is on G drive).
`cd G:\`	Change the directory to G:\.
`dir /b /on > F:\1dual\dir-zip.txt`	Make a directory listing **dir** with **/b** (I guess b stands for **b**rief or **b**asic), and **/on** (s**o**rt by **n**ame). **>** Output a file of listing to F drive as specified. F:\1dual\dir-zip.txt (Assuming we are running 'Dual' at F-drive, '1dual' directory.)

It isn't so difficult to understand, is it? Please edit the bold parts in order to fit in your ZIP_FLASH drive. Then another set of DOS batch program which makes a directory listing of the shadow.

	Meanings
`F:`	Change to F drive (if your shadow is on F drive).
`cd F:\TO-CD\WEB-ARCH.02`	Change the directory to F:\TO-CD\WEB-ARCH.02.
`dir /b /on > F:\1dual\dir-sdw.txt`	Make the similar directory listing, but in this case, about its shadow in a hard disk.

The last three lines are the same as the first three lines, except the output file name is 'Dir.txt'. Traditionally, **'Dual'** uses **'Dir.txt'** for steps 1 to 5, so I included it in this **'Sample_1.txt'**. Please edit bold parts in the same way to fit your case.

	Meanings
`G:`	Change to the master ZIP_FLASH drive (in this case the ZIP_FLASH is on G drive).
`cd G:\`	
`dir /b /on > F:\1dual\dir.txt`	

When you finished editing of this first lesson of the DOS batch programming, it is time to run the program. Change the extension of the file name from **Sample_1.txt** to **Sample_1.bat**. Ignore the warning message, and go ahead to change to **.bat**, and you will see the change of the icon's appearance, now it looks like executable. Double click it. It should make three files at your designated directory (in this case, above, at F:\1dual\ ). They are : 'Dir-ZIP.txt', 'Dir-SDW.txt', and 'Dir.txt', total three files. Open those .txt files by double clicks to see inside. If they are directory listings, congratulation! Please go ahead to double click "**0_Adjust.exe**", then you will see the result at "RESULT.TXT" file. Make sure, all files are at the same directory ('Dir-ZIP.txt', 'Dir-SDW.txt', and '**0_Adjust.exe**').

(3)   After the adjustment of folders, the steps are as follows.
   `1stBatch.bat`
   `2Batch.exe`
   `SDWBatch.txt & ZIPBatch.txt` -> review and change extension to
      '`SDWBatch`**`.bat`**' & '`ZIPBatch`**`.bat`**' and run.
   `3Eraser.exe`
   `4Diff.exe`
   (**`5Rename.exe`**, optional)

   `1stBatch.bat`
   This makes folder structures \ZIP_FL\, \SHADOW\, and \DIFF\.   You can look at inside of
   this batch file when you change its extension to 1stBatch**.txt**.   Before a run, make sure to
   change back to **.bat** extension.

   `2Batch.exe`
   This one asks you where is **your working directory** for Dual's executable files.   Please
   specify drive name and folder name such as (C:\1temp, D:\Dual, .. F:\1dual ... etc.).   This
   '2Batch.exe' makes a pair of Batch files.   They are,

   `SDWBatch.txt`
   `ZIPBatch.txt`

   These two DOS batch programs must be relocated to the right places.   You will see, for
   example, something like below inside of **'SDWBatch.txt'**,

```
cd DOCS
dir /s /on > C:\1temp\SHADOW\catlg001.txt
cd ..\EMAILS
dir /s /on > C:\1temp\SHADOW\catlg002.txt
cd ..\GRAPHICS
dir /s /on > C:\1temp\SHADOW\catlg003.txt
```

   Here, in this sample, **'SDWBatch.txt'** will make detail contents listing of three directories
   \DOCS\, \EMAIL\, and \GRAPHICS\ into catalog files 001.txt to 003.txt.   Can you guess
   where this **'SDWBatch.txt'** file should be relocated?   Yes, that is the same directory where
   \DOCS\, \EMAIL\ and GRAPHICS\ folders exist in your hard disk's shadow.   Relocate it, and
   change extension from **.txt** to **.bat**, and run it.   Relocate 'ZIPBatch.txt' also in the same way
   where \DOCS\, \EMAIL\ and GRAPHICS\ exist at your master ZIP_FLASH.   Change to **.bat**
   and run it.   Now, you will see several files at,

```
C:\1temp\SHADOW\catlg001.txt - catlg003.txt
C:\1temp\ZIP_FL\catlg001.txt - catlg003.txt
```

   If you don't see any catalog files at your working directories \SHADOW\ and \ZIP_FL\,
   please look at 'SDWBatch.bat' and 'ZIPBatch.bat' files by changing back to **.txt** extension and
   examine carefully.   If necessary, re-run the **'2Batch.exe'** with a care of directory path.

`3Eraser.exe`

Once you see catalog files, the last few steps are easy.   This eraser erase the different paths and time stamps between SHADOW catalogs and ZIP_FL catalogs.   It is better to provide the exact information when '3Eraser.exe' asks, but don't worry details.

`4Diff.exe`

This makes final report 'GrandSum.txt' and details to \DIFF\ directory.   The mechanism of this '4Diff.exe' is to read two files, a pair of catalog files from \SHADOW\Erased\ and \ZIP_FL\Erased\, and when the exact same contents are there, it report **'No change'**.   If there is difference in two pair of catalogs, but when the size of catalogs of the pair (judged by line numbers) are the same, then it reports **'Maybe O.K.'**.   When catalog sizes are different, it reports **'Watch out **** '**.   Those three grade reports are written in 'GRANDSUM.TXT'.

```
 No change
 Maybe O.K.
 Watch out *****
```

"No change" is fine.   "Maybe O.K." is also, you better consider as O.K.   Since **'dir'** DOS command of Windows XP and Windows 2000 works fuzzy, and alphabetical sorting **'dir /s /on'** are poor.   As the result, although the same contents in a pair of catalogs , the order of listing are often juggled up and down, not exactly in the same order, and thus it becomes "Maybe O.K."   You must pay attention on **"Watch out ****"** folders, since they likely have addition of new files/folders or deletion of old files/folders.

Note for the first timer.

If you don't understand well my explanation above, then you may go back to an old version **'Dual6.exe'** of 07-22-2005 in archives, since I explained how to use five executable files (1stBatch.bat, 2Batch.exe, 3Eraser.exe, 4Diff.exe, 5Rename.exe) by internally embedded messages.   Long internal explanations were bothersome for repeated runs, and are completely taken out from the current version **'Dual.exe'**, but those internal messages may be useful for the first timer to get familiar with PC **'Dual'**.

```
www.tunefind.net/htm/exe_archives.html
```


Macintosh Vintage OS Protocol:

(1) Insert your ZIP disk.
(2) Open it by double-clicks -> Select all folders you want to scan by a mouse.
```
Edit(menu)->Copy
(Or, [Apple-command]-key + [C]-key)
Launch SimpleText (OS7/8/9); TextEdit (OSX)
Edit(menu)->Paste
(Or, [Apple-command]-key + [V]-key)
File(menu)-> Save As ...  ->
```
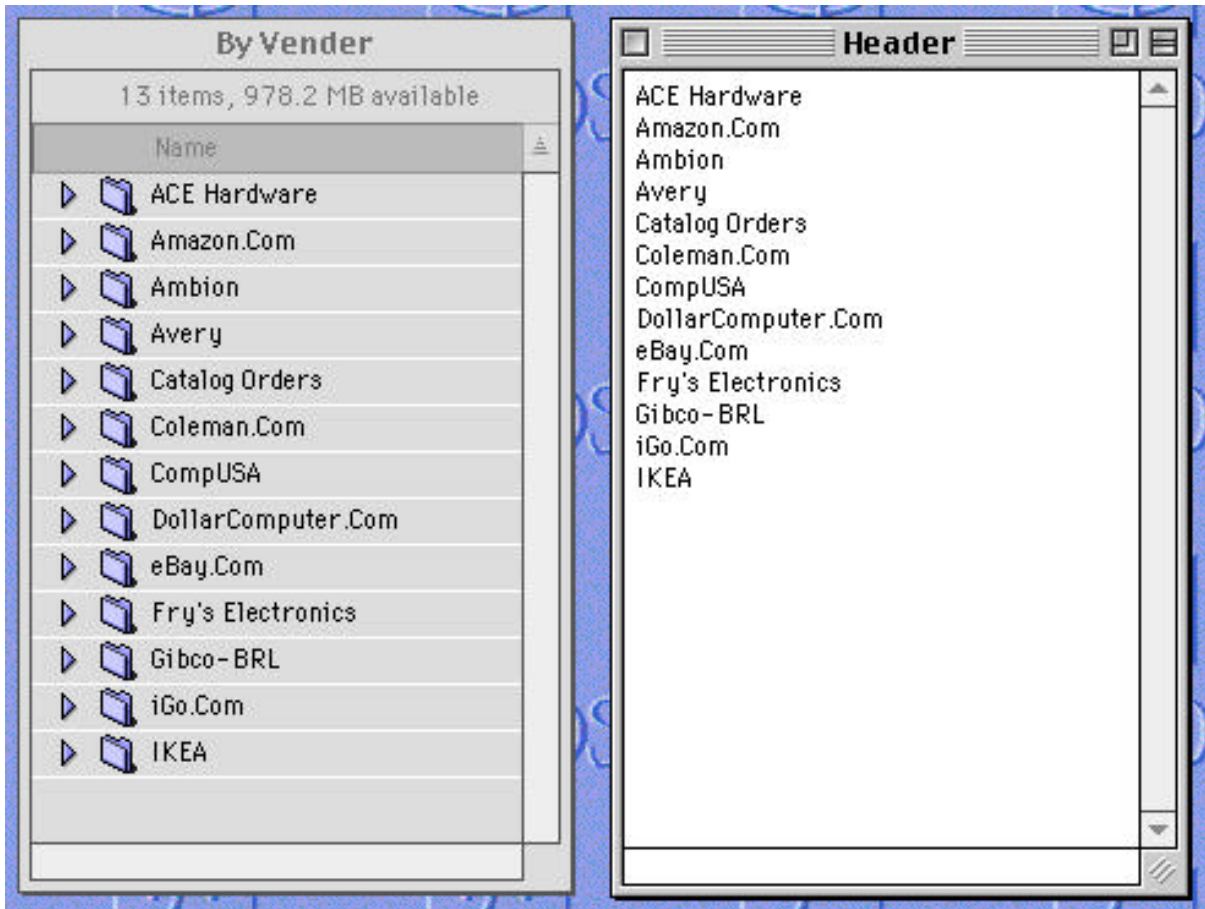Save it as "`Header`" and bring it under your
working folder.

(3) See if your SimpleText **'Header'** file has all folder names which you want to examine (see a sample below). Make sure you bring it to your temporary working folder which has a set of 5 executable files above. Then start 1 to 5.

By Vender	Header
13 items, 978.2 MB available	ACE Hardware
Name	Amazon.Com
▷ ☐ ACE Hardware	Ambion
▷ ☐ Amazon.Com	Avery
▷ ☐ Ambion	Catalog Orders
▷ ☐ Avery	Coleman.Com
▷ ☐ Catalog Orders	CompUSA
▷ ☐ Coleman.Com	DollarComputer.Com
▷ ☐ CompUSA	eBay.Com
▷ ☐ DollarComputer.Com	Fry's Electronics
▷ ☐ eBay.Com	Gibco-BRL
▷ ☐ Fry's Electronics	iGo.Com
▷ ☐ Gibco-BRL	IKEA
▷ ☐ iGo.Com	
▷ ☐ IKEA	

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