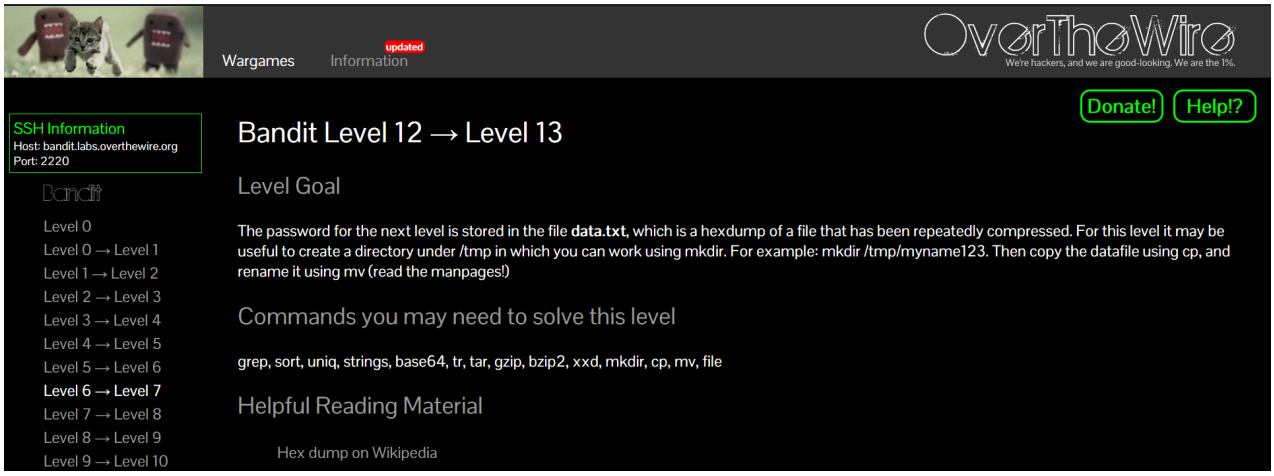
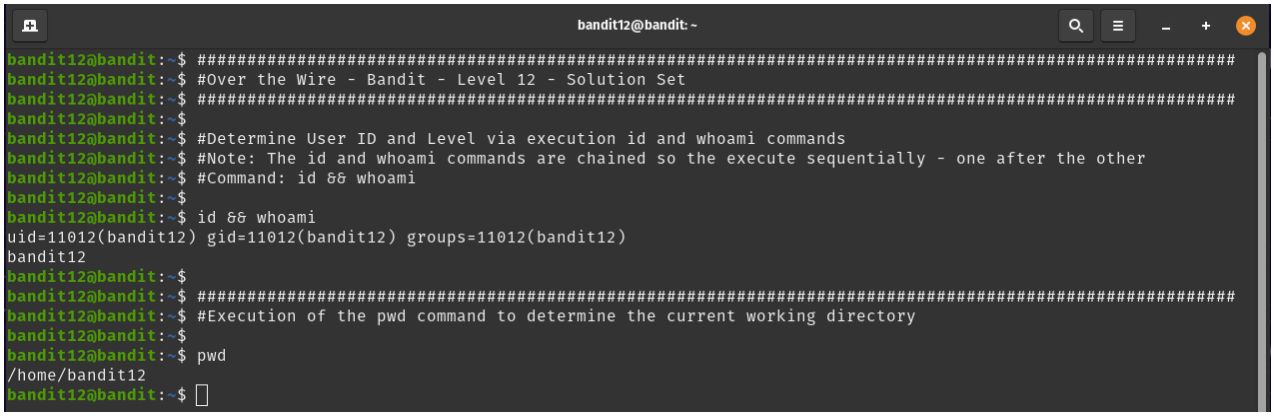
Bandit Level 12 —> Level 13

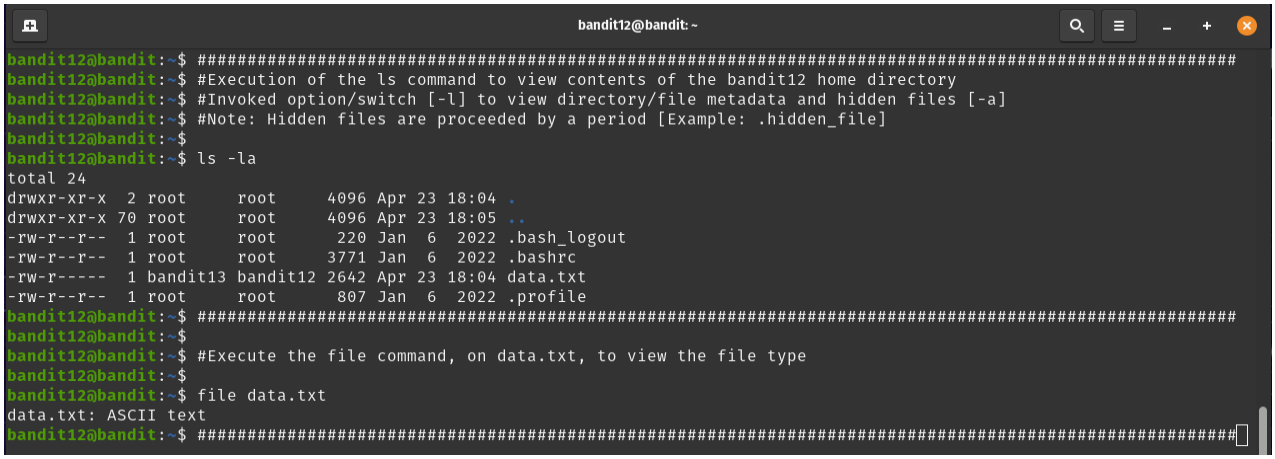
SSH Parameters	
Server:	bandit.labs.overthewire.org
Port:	2220

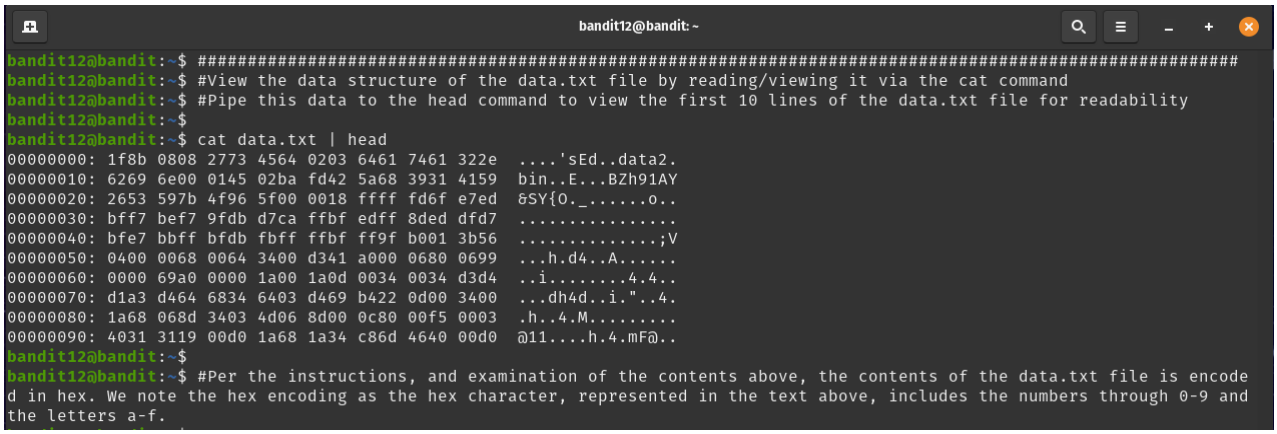
Website URLs	
Level 12—>13	OverTheWire: Level Goal: Bandit Level 12 → Level 13
Level 13—>14	OverTheWire: Level Goal: Bandit Level 13 → Level 14

Passwords		
Level	User Name	Password
Level 12—>13	bandit12	JVNBBFSmZwKKOP0XbFXOoW8chDz5yVRv
Level 13—>14	bandit13	wbWdlBxEir4CaE8LaPhauuOo6pwRmrDw



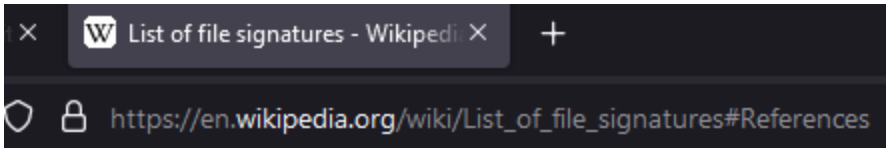

bandit12@bandit: ~
bandit12@bandit:~$ ##
bandit12@bandit:~$ #Over the Wire - Bandit - Level 12 - Solution Set
bandit12@bandit:~$ ##
bandit12@bandit:~$
bandit12@bandit:~$ #Determine User ID and Level via execution id and whoami commands
bandit12@bandit:~$ #Note: The id and whoami commands are chained so the execute sequentially - one after the other
bandit12@bandit:~$ #Command: id && whoami
bandit12@bandit:~$
bandit12@bandit:~$ id && whoami
uid=11012(bandit12) gid=11012(bandit12) groups=11012(bandit12)
bandit12
bandit12@bandit:~$
bandit12@bandit:~$ ##
bandit12@bandit:~$ #Execution of the pwd command to determine the current working directory
bandit12@bandit:~$
bandit12@bandit:~$ pwd
/home/bandit12
bandit12@bandit:~$


bandit12@bandit: ~
bandit12@bandit:~$ ##
bandit12@bandit:~$ #Execution of the ls command to view contents of the bandit12 home directory
bandit12@bandit:~$ #Invoked option/switch [-l] to view directory/file metadata and hidden files [-a]
bandit12@bandit:~$ #Note: Hidden files are proceeded by a period [Example: .hidden_file]
bandit12@bandit:~$
bandit12@bandit:~$ ls -la
total 24
drwxr-xr-x 2 root   root   4096 Apr 23 18:04 .
drwxr-xr-x 70 root   root   4096 Apr 23 18:05 ..
-rw-r--r-- 1 root   root   220 Jan 6 2022 .bash_logout
-rw-r--r-- 1 root   root   3771 Jan 6 2022 .bashrc
-rw-r----- 1 bandit13 bandit12 2642 Apr 23 18:04 data.txt
-rw-r--r-- 1 root   root   807 Jan 6 2022 .profile
bandit12@bandit:~$ ##
bandit12@bandit:~$
bandit12@bandit:~$ #Execute the file command, on data.txt, to view the file type
bandit12@bandit:~$
bandit12@bandit:~$ file data.txt
data.txt: ASCII text
bandit12@bandit:~$ ##


bandit12@bandit: ~
bandit12@bandit:~$ ##
bandit12@bandit:~$ #View the data structure of the data.txt file by reading/viewing it via the cat command
bandit12@bandit:~$ #Pipe this data to the head command to view the first 10 lines of the data.txt file for readability
bandit12@bandit:~$
bandit12@bandit:~$ cat data.txt | head
00000000: 1f8b 0808 2773 4564 0203 6461 7461 322e ....'sEd..data2.
00000010: 6269 6e00 0145 02ba fd42 5a68 3931 4159 bin..E...BZh91AY
00000020: 2653 597b 4f96 5f00 0018 ffff fd6f e7ed &SY{O._......o..
00000030: bff7 bef7 9fdb d7ca ffbf edff 8ded dfd7 ....
00000040: bfe7 bbff bfdb fbff ffbf ff9f b001 3b56 ....;V
00000050: 0400 0068 0064 3400 d341 a000 0680 0699 ...h.d4..A......
00000060: 0000 69a0 0000 1a00 1a0d 0034 0034 d3d4 ..i........4.4..
00000070: d1a3 d464 6834 6403 d469 b422 0d00 3400 ...dh4d..i."..4.
00000080: 1a68 068d 3403 4d06 8d00 0c80 00f5 0003 .h..4.M.........
00000090: 4031 3119 00d0 1a68 1a34 c86d 4640 00d0 @11....h.4.mF@..
bandit12@bandit:~$
bandit12@bandit:~$ #Per the instructions, and examination of the contents above, the contents of the data.txt file is encode
d in hex. We note the hex encoding as the hex character, represented in the text above, includes the numbers through 0-9 and
the letters a-f.


bandit12@bandit: ~
bandit12@bandit:~$ #The Windows operating system associates file type, via extension, with application. In example, files w
ith an .xlsx extension are associated with and opened by Microsoft Excel. Linux does not associate applicaitons based on fi
le extensions. Rather, Linux reads the first few bytes of the file to determine the associated application. These first fe
w bytes are referred to as magic numbers. Websites and databases, such as https://en.wikipedia.org/wiki/List_of_file_signatu
res.

#Through seraching the https://en.wikipedia.org/wiki/List_of_file_signatures website for the first few hex characters (1f8b)
 we noted it a GZIP compressed file.

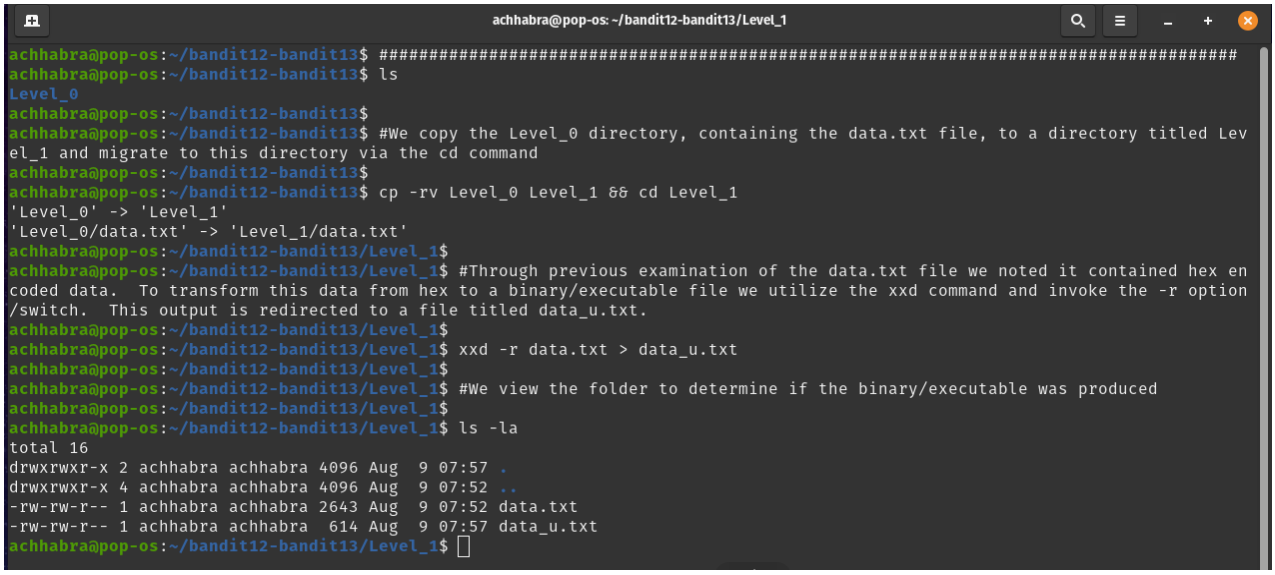


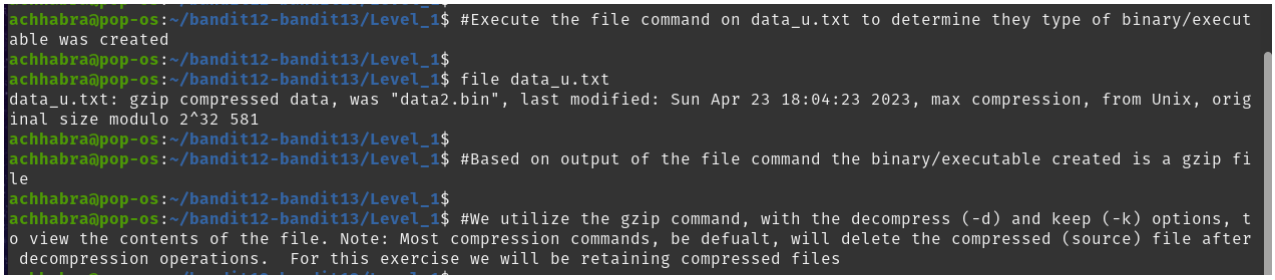
37 7A BC AF 27 1C	7z¼¯'ғs	0	7z	7-Zip File Format

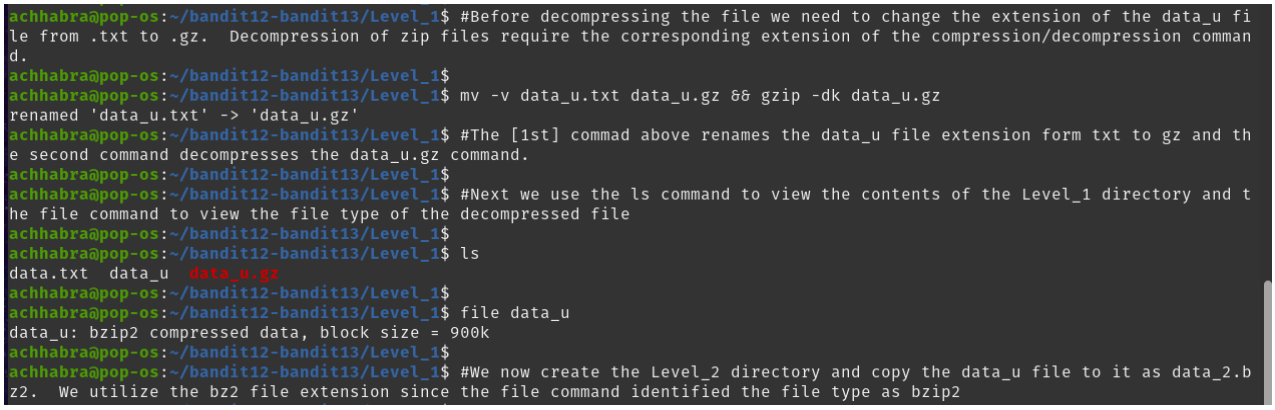
```
bandit12@bandit:~$ #cat the data.txt, from the bandit over the wire server, and copy it (highlight, right click, copy) to lo
cal machine
bandit12@bandit:~$
bandit12@bandit:~$ cat data.txt
00000000: 1f8b 0808 2773 4564 0203 6461 7461 322e  ....'sEd..data2.
00000010: 6269 6e00 0145 02ba fd42 5a68 3931 4159  bin..E...BZh91AY
00000020: 2653 597b 4f96 5f00 0018 ffff fd6f e7ed  &SY{O._......o..
00000030: bff7 bef7 9fdb d7ca ffbf edff 8ded dfd7  ................
00000040: bfe7 bbff bfdb fbff ffbf ff9f b001 3b56  ..............;V
00000050: 0400 0068 0064 3400 d341 a000 0680 0699  ...h.d4..A......
00000060: 0000 69a0 0000 1a00 1a0d 0034 0034 d3d4  ..i........4.4..
00000070: d1a3 d464 6834 6403 d469 b422 0d00 3400  ...dh4d..i."..4.
00000080: 1a68 068d 3403 4d06 8d00 0c80 00f5 0003  .h..4.M.........
00000090: 4031 3119 00d0 1a68 1a34 c86d 4640 00d0  @11....h.4.mF@..
000000a0: 0007 a80d 000d 00e9 a340 d034 0341 a000  .........@.4.A..
000000b0: 0699 07a9 881e a0d0 da80 6834 0c43 4068  ..........h4.C@h
000000c0: 6432 0340 0c80 6800 0346 8006 8000 d034  d2.@..h..F.....4
000000d0: 0001 f0e1 810e 1958 b7a4 92c7 640e 421a  .......X....d.B.
000000e0: a147 6142 a67e 3603 a756 3ba9 1b08 e034  .GaB.~6..V;....4
000000f0: 41fd 1247 661d b380 00b7 cd8c b23e b6b2  A..Gf........>..
00000100: 1947 e803 0be5 6077 a542 e9ea 7810 29f0  .G....`w.B..x.).
00000110: 429d e1d7 ad8b 0b78 056b e37c 06df 4917  B......x.k.|..I.
00000120: 9b46 f69d 4473 80b4 edc2 ee10 04e3 3e52  .F..Ds........>R
00000130: dd34 2244 08cb 5e64 9314 9521 505e e767  .4"D..^d...!P^.g
00000140: 9021 d029 85e7 9ce2 d1ce d44f 5ec5 f6d6  .!.).......O^...
00000150: d918 de31 f1f5 d149 4695 0937 d06b f046  ...1...IF..7.k.F
00000160: 789d 1bd0 ca69 11eb 2c9a 3290 3d9e 0511  x....i..,.2.=...
```

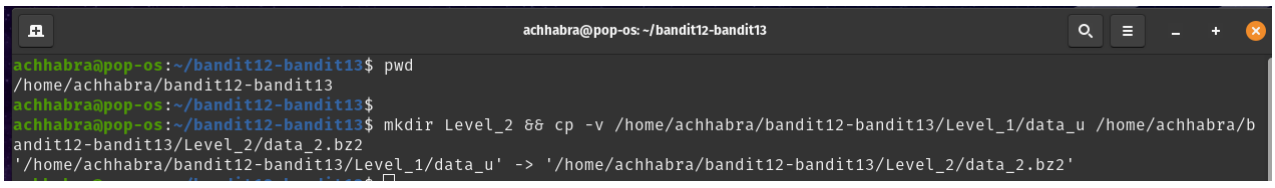
```
achhabra@pop-os:~/bandit12-bandit13/Level_0$ #Copied data, to a file titled data.txt, contained in my home directory to a di
rectory titled Level_0 which is contained in a directory bandit12-13
achhabra@pop-os:~/bandit12-bandit13/Level_0$
achhabra@pop-os:~/bandit12-bandit13/Level_0$ #Execute the ls -la command to view the contents of the Level_0 directory
achhabra@pop-os:~/bandit12-bandit13/Level_0$
achhabra@pop-os:~/bandit12-bandit13/Level_0$ ls -la
total 12
drwxrwxr-x 2 achhabra achhabra 4096 Aug  9 02:21 .
drwxrwxr-x 3 achhabra achhabra 4096 Aug  9 02:20 ..
-rw-rw-r-- 1 achhabra achhabra 2643 Aug  9 02:21 data.txt
```

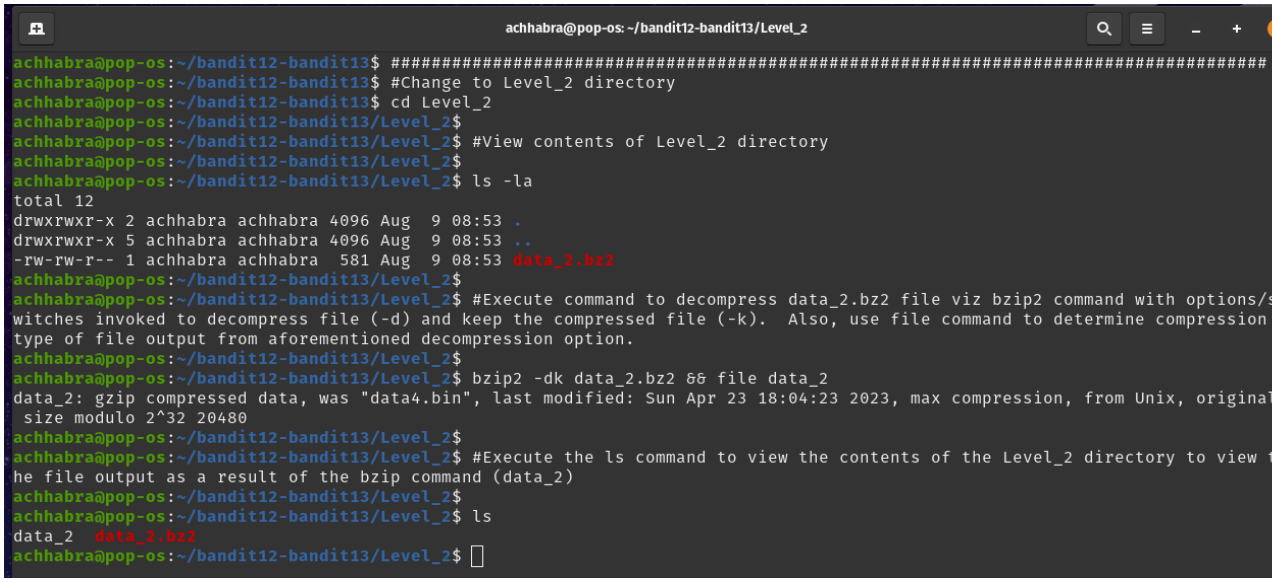
```
achhabra@pop-os: ~/bandit12-bandit13/Level_0

achhabra@pop-os:~/bandit12-bandit13/Level_0$ ################################################################################
achhabra@pop-os:~/bandit12-bandit13/Level_0$ #Utilize the cat command, and pipe the contents to head, to view the first ten
lines of data.txt file
achhabra@pop-os:~/bandit12-bandit13/Level_0$
achhabra@pop-os:~/bandit12-bandit13/Level_0$ cat data.txt | head
00000000: 1f8b 0808 2773 4564 0203 6461 7461 322e  ....'sEd..data2.
00000010: 6269 6e00 0145 02ba fd42 5a68 3931 4159  bin..E...BZh91AY
00000020: 2653 597b 4f96 5f00 0018 ffff fd6f e7ed  &SY{O._......o..
00000030: bff7 bef7 9fdb d7ca ffbf edff 8ded dfd7  ................
00000040: bfe7 bbff bfdb fbff ffbf ff9f b001 3b56  ..............;V
00000050: 0400 0068 0064 3400 d341 a000 0680 0699  ...h.d4..A......
00000060: 0000 69a0 0000 1a00 1a0d 0034 0034 d3d4  ..i........4.4..
00000070: d1a3 d464 6834 6403 d469 b422 0d00 3400  ...dh4d..i."..4.
00000080: 1a68 068d 3403 4d06 8d00 0c80 00f5 0003  .h..4.M.........
00000090: 4031 3119 00d0 1a68 1a34 c86d 4640 00d0  @11....h.4.mF@..
achhabra@pop-os:~/bandit12-bandit13/Level_0$
achhabra@pop-os:~/bandit12-bandit13/Level_0$
achhabra@pop-os:~/bandit12-bandit13/Level_0$ #****Based on the output above the data.txt file appears identical to the file
on the bandit server
```

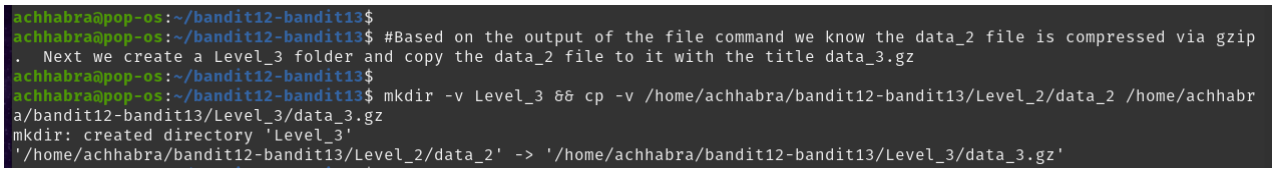

achhabra@pop-os: ~/bandit12-bandit13/Level_1
achhabra@pop-os:~/bandit12-bandit13$ ##
achhabra@pop-os:~/bandit12-bandit13$ ls
Level_0
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ #We copy the Level_0 directory, containing the data.txt file, to a directory titled Lev
el_1 and migrate to this directory via the cd command
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ cp -rv Level_0 Level_1 && cd Level_1
'Level_0' -> 'Level_1'
'Level_0/data.txt' -> 'Level_1/data.txt'
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #Through previous examination of the data.txt file we noted it contained hex en
coded data. To transform this data from hex to a binary/executable file we utilize the xxd command and invoke the -r option
/switch. This output is redirected to a file titled data_u.txt.
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ xxd -r data.txt > data_u.txt
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #We view the folder to determine if the binary/executable was produced
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ ls -la
total 16
drwxrwxr-x 2 achhabra achhabra 4096 Aug 9 07:57 .
drwxrwxr-x 4 achhabra achhabra 4096 Aug 9 07:52 ..
-rw-rw-r-- 1 achhabra achhabra 2643 Aug 9 07:52 data.txt
-rw-rw-r-- 1 achhabra achhabra 614 Aug 9 07:57 data_u.txt
achhabra@pop-os:~/bandit12-bandit13/Level_1$

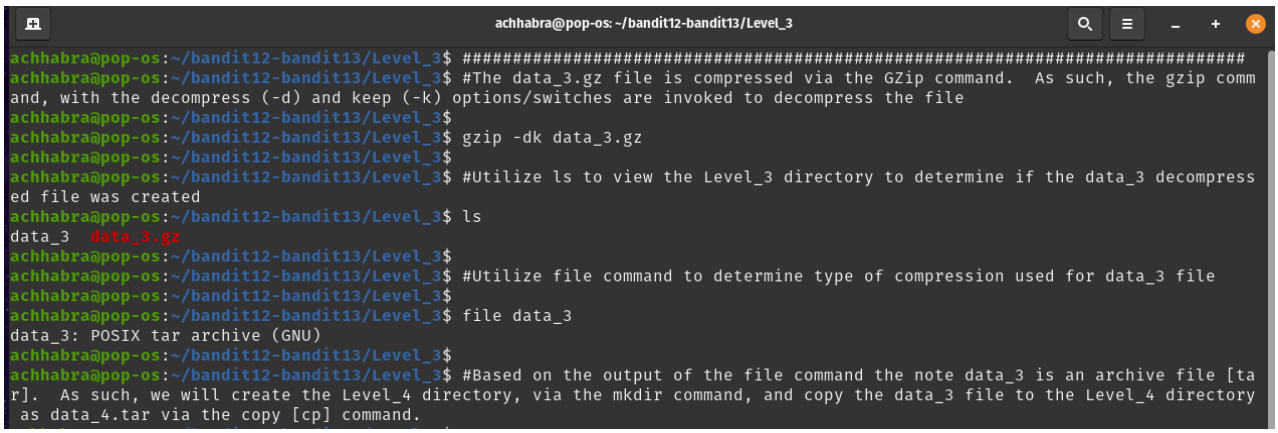

achhabra@pop-os:~/bandit12-bandit13/Level_1$ #Execute the file command on data_u.txt to determine they type of binary/execut
able was created
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ file data_u.txt
data_u.txt: gzip compressed data, was "data2.bin", last modified: Sun Apr 23 18:04:23 2023, max compression, from Unix, orig
inal size modulo 2^32 581
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #Based on output of the file command the binary/executable created is a gzip fi
le
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #We utilize the gzip command, with the decompress (-d) and keep (-k) options, t
o view the contents of the file. Note: Most compression commands, be defualt, will delete the compressed (source) file after
 decompression operations. For this exercise we will be retaining compressed files

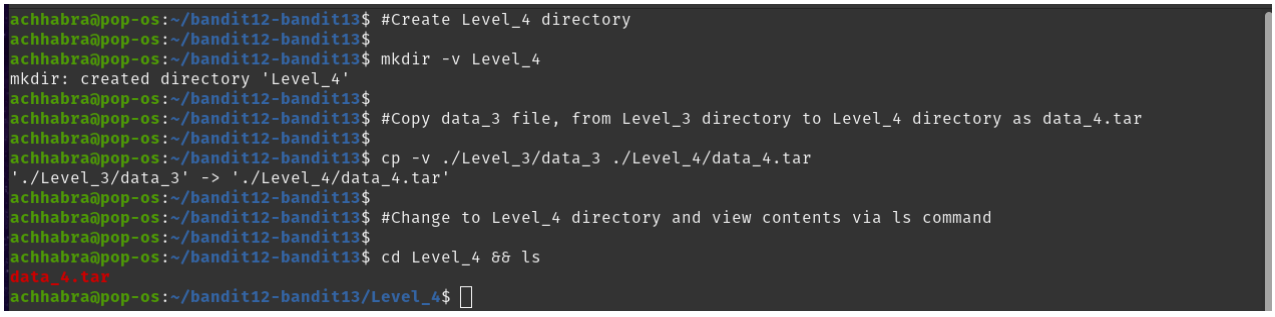

achhabra@pop-os:~/bandit12-bandit13/Level_1$ #Before decompressing the file we need to change the extension of the data_u fi
le from .txt to .gz. Decompression of zip files require the corresponding extension of the compression/decompression comman
d.
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ mv -v data_u.txt data_u.gz && gzip -dk data_u.gz
renamed 'data_u.txt' -> 'data_u.gz'
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #The [1st] commad above renames the data_u file extension form txt to gz and th
e second command decompresses the data_u.gz command.
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #Next we use the ls command to view the contents of the Level_1 directory and t
he file command to view the file type of the decompressed file
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ ls
data.txt data_u data_u.gz
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ file data_u
data_u: bzip2 compressed data, block size = 900k
achhabra@pop-os:~/bandit12-bandit13/Level_1$
achhabra@pop-os:~/bandit12-bandit13/Level_1$ #We now create the Level_2 directory and copy the data_u file to it as data_2.b
z2. We utilize the bz2 file extension since the file command identified the file type as bzip2


achhabra@pop-os: ~/bandit12-bandit13
achhabra@pop-os:~/bandit12-bandit13$ pwd
/home/achhabra/bandit12-bandit13
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ mkdir Level_2 && cp -v /home/achhabra/bandit12-bandit13/Level_1/data_u /home/achhabra/b
andit12-bandit13/Level_2/data_2.bz2
'/home/achhabra/bandit12-bandit13/Level_1/data_u' -> '/home/achhabra/bandit12-bandit13/Level_2/data_2.bz2'


achhabra@pop-os: ~/bandit12-bandit13/Level_2
achhabra@pop-os:~/bandit12-bandit13$ ##
achhabra@pop-os:~/bandit12-bandit13$ #Change to Level_2 directory
achhabra@pop-os:~/bandit12-bandit13$ cd Level_2
achhabra@pop-os:~/bandit12-bandit13/Level_2$
achhabra@pop-os:~/bandit12-bandit13/Level_2$ #View contents of Level_2 directory
achhabra@pop-os:~/bandit12-bandit13/Level_2$
achhabra@pop-os:~/bandit12-bandit13/Level_2$ ls -la
total 12
drwxrwxr-x 2 achhabra achhabra 4096 Aug 9 08:53 .
drwxrwxr-x 5 achhabra achhabra 4096 Aug 9 08:53 ..
-rw-rw-r-- 1 achhabra achhabra 581 Aug 9 08:53 data_2.bz2
achhabra@pop-os:~/bandit12-bandit13/Level_2$
achhabra@pop-os:~/bandit12-bandit13/Level_2$ #Execute command to decompress data_2.bz2 file viz bzip2 command with options/s
witches invoked to decompress file (-d) and keep the compressed file (-k). Also, use file command to determine compression
type of file output from aforementioned decompression option.
achhabra@pop-os:~/bandit12-bandit13/Level_2$
achhabra@pop-os:~/bandit12-bandit13/Level_2$ bzip2 -dk data_2.bz2 && file data_2
data_2: gzip compressed data, was "data4.bin", last modified: Sun Apr 23 18:04:23 2023, max compression, from Unix, original
size modulo 2^32 20480
achhabra@pop-os:~/bandit12-bandit13/Level_2$
achhabra@pop-os:~/bandit12-bandit13/Level_2$ #Execute the ls command to view the contents of the Level_2 directory to view t
he file output as a result of the bzip command (data_2)
achhabra@pop-os:~/bandit12-bandit13/Level_2$
achhabra@pop-os:~/bandit12-bandit13/Level_2$ ls
data_2 data_2.bz2
achhabra@pop-os:~/bandit12-bandit13/Level_2$


achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ #Based on the output of the file command we know the data_2 file is compressed via gzip
. Next we create a Level_3 folder and copy the data_2 file to it with the title data_3.gz
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ mkdir -v Level_3 && cp -v /home/achhabra/bandit12-bandit13/Level_2/data_2 /home/achhabr
a/bandit12-bandit13/Level_3/data_3.gz
mkdir: created directory 'Level_3'
'/home/achhabra/bandit12-bandit13/Level_2/data_2' -> '/home/achhabra/bandit12-bandit13/Level_3/data_3.gz'


achhabra@pop-os: ~/bandit12-bandit13/Level_3
achhabra@pop-os:~/bandit12-bandit13/Level_3$ ##
achhabra@pop-os:~/bandit12-bandit13/Level_3$ #The data_3.gz file is compressed via the GZip command. As such, the gzip comm
and, with the decompress (-d) and keep (-k) options/switches are invoked to decompress the file
achhabra@pop-os:~/bandit12-bandit13/Level_3$
achhabra@pop-os:~/bandit12-bandit13/Level_3$ gzip -dk data_3.gz
achhabra@pop-os:~/bandit12-bandit13/Level_3$
achhabra@pop-os:~/bandit12-bandit13/Level_3$ #Utilize ls to view the Level_3 directory to determine if the data_3 decompress
ed file was created
achhabra@pop-os:~/bandit12-bandit13/Level_3$ ls
data_3 data_3.gz
achhabra@pop-os:~/bandit12-bandit13/Level_3$
achhabra@pop-os:~/bandit12-bandit13/Level_3$ #Utilize file command to determine type of compression used for data_3 file
achhabra@pop-os:~/bandit12-bandit13/Level_3$
achhabra@pop-os:~/bandit12-bandit13/Level_3$ file data_3
data_3: POSIX tar archive (GNU)
achhabra@pop-os:~/bandit12-bandit13/Level_3$
achhabra@pop-os:~/bandit12-bandit13/Level_3$ #Based on the output of the file command the note data_3 is an archive file [ta
r]. As such, we will create the Level_4 directory, via the mkdir command, and copy the data_3 file to the Level_4 directory
as data_4.tar via the copy [cp] command.


achhabra@pop-os:~/bandit12-bandit13$ #Create Level_4 directory
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ mkdir -v Level_4
mkdir: created directory 'Level_4'
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ #Copy data_3 file, from Level_3 directory to Level_4 directory as data_4.tar
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ cp -v ./Level_3/data_3 ./Level_4/data_4.tar
'./Level_3/data_3' -> './Level_4/data_4.tar'
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ #Change to Level_4 directory and view contents via ls command
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ cd Level_4 && ls
data_4.tar
achhabra@pop-os:~/bandit12-bandit13/Level_4$

```
achhabra@pop-os:~/bandit12-bandit13/Level_4$ #A tar file is archived (multiple items grouped together in one file) but does
not compress the data.  tar stands for tape archive and by default works with tape devices. To upack a tar file we invoke th
e extract [-x] option/switch [to extract the contents of the file] and the file option/switch [-f] to specify the command is
 working on a file [vs. a tape device].  Extracting files also requires the verbose [-v] option to be invoked.  Note: Unlike
 many compression commands, that delete the source file post decompression, the tar command retains the original file post e
xtraction operations.
achhabra@pop-os:~/bandit12-bandit13/Level_4$
achhabra@pop-os:~/bandit12-bandit13/Level_4$ #Command: tar -xvf data_4.tar
achhabra@pop-os:~/bandit12-bandit13/Level_4$ #Note: The options/switches need to be keyed in the order specified, "-xvf", in
 order for the command to successfully execute
achhabra@pop-os:~/bandit12-bandit13/Level_4$
achhabra@pop-os:~/bandit12-bandit13/Level_4$ tar -xvf data_4.tar
data5.bin
achhabra@pop-os:~/bandit12-bandit13/Level_4$ #Utilize the file command to determine the archive/compression used on data5.bi
n
achhabra@pop-os:~/bandit12-bandit13/Level_4$
achhabra@pop-os:~/bandit12-bandit13/Level_4$ file data5.bin
data5.bin: POSIX tar archive (GNU)
achhabra@pop-os:~/bandit12-bandit13/Level_4$
```

```
achhabra@pop-os:~/bandit12-bandit13/Level_4$ #Per output of the file command, on data5.bin, the file is a tar archive. As su
ch, we will create a directory titled Level_5 and copy data5.bin to the Level_5 directory  with the file name data5.tar.
achhabra@pop-os:~/bandit12-bandit13/Level_4$
achhabra@pop-os:~/bandit12-bandit13/Level_4$ cd ..
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ mkdir -v Level_5 && cp -v ./Level_4/data5.bin ./Level_5/data5.tar
mkdir: created directory 'Level_5'
'./Level_4/data5.bin' -> './Level_5/data5.tar'
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ #Change directory to Level_5 and view contents of directory via ls command
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ cd Level_5 && ls
data5.tar
achhabra@pop-os:~/bandit12-bandit13/Level_5$
achhabra@pop-os:~/bandit12-bandit13/Level_5$ #Since the file is a tar archive we utilize the tar command to extract the file
s contained within it.  This is accompished through invoking the extract [-x], verbose [-v], and file [-f] options.  The ext
ract [-x] option/switch extracts the files, the verbose [-v] option is required for the command to successfully execute, and
 the file [-f] option to communicate to the tar command that the device being operated on is a file. tar stands for tape arc
hive.  By default, the command attempts to read from tape devices and the file [-f] option redirects that to file.
achhabra@pop-os:~/bandit12-bandit13/Level_5$
achhabra@pop-os:~/bandit12-bandit13/Level_5$ tar -xvf data5.tar
data6.bin
achhabra@pop-os:~/bandit12-bandit13/Level_5$
```

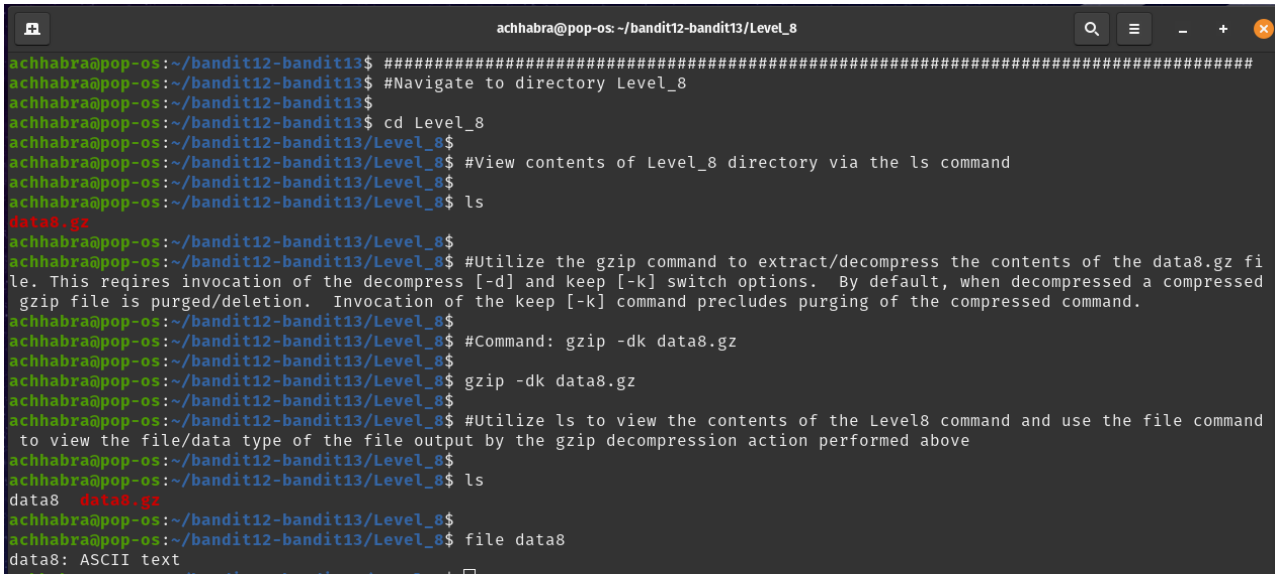
```
achhabra@pop-os:~/bandit12-bandit13/Level_5$ #Execute the file command on data6.bin to determine file/data type.  Create a L
evel_6 directory and copy the data6.bin file to the Level_6 directory.  [Re]name the data6.bin file with the extension outpu
t by the file command executed on the file data6.bin
achhabra@pop-os:~/bandit12-bandit13/Level_5$
achhabra@pop-os:~/bandit12-bandit13/Level_5$ file data6.bin
data6.bin: bzip2 compressed data, block size = 900k
achhabra@pop-os:~/bandit12-bandit13/Level_5$
achhabra@pop-os:~/bandit12-bandit13/Level_5$ #Based on output of the file command, above, data6.bin is a compressed file in
bzip2 format
achhabra@pop-os:~/bandit12-bandit13/Level_5$
achhabra@pop-os:~/bandit12-bandit13/Level_5$ cd ..
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ mkdir -v Level_6 && cp -v ./Level_5/data6.bin ./Level_6/data6.bz2
mkdir: created directory 'Level_6'
'./Level_5/data6.bin' -> './Level_6/data6.bz2'
```

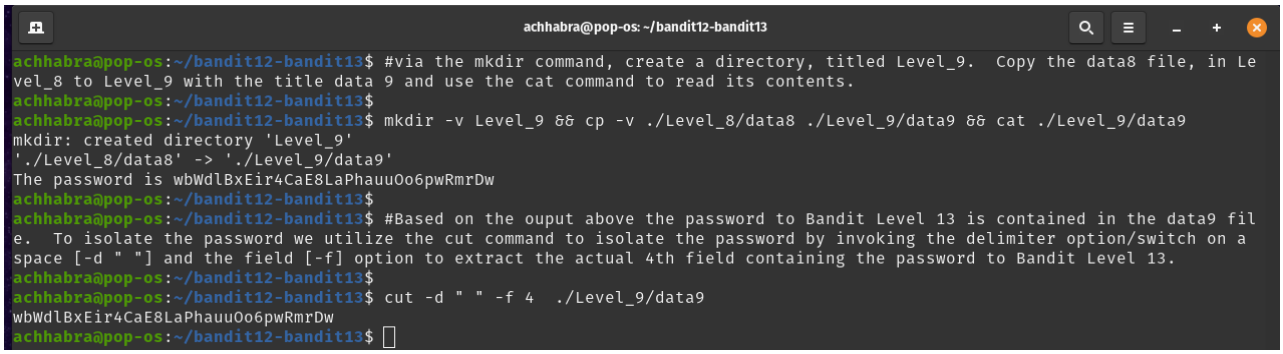
```
achhabra@pop-os:~/bandit12-bandit13$ #Navigate to the Level_6 directory and view its contents
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ cd Level_6 && ls
data6.bz2
achhabra@pop-os:~/bandit12-bandit13/Level_6$ #Utilize the bzip2 command and invoke the decompress [-d] and keep [-k] options
/switches.  The decompress [-d] option/switch extracts file contents and the keep [-k] option/switch does not purge the data
6.bz (compressed) file post decompression operations
```

```
achhabra@pop-os:~/bandit12-bandit13/Level_6$ bzip2 -dk data6.bz2
achhabra@pop-os:~/bandit12-bandit13/Level_6$
achhabra@pop-os:~/bandit12-bandit13/Level_6$ #Utilize the ls command to view Level_6 directory contents
achhabra@pop-os:~/bandit12-bandit13/Level_6$
achhabra@pop-os:~/bandit12-bandit13/Level_6$ ls
data6  data6.bz2
achhabra@pop-os:~/bandit12-bandit13/Level_6$
achhabra@pop-os:~/bandit12-bandit13/Level_6$ #Utilize the file command to view the file/data type of the data6 file
achhabra@pop-os:~/bandit12-bandit13/Level_6$
achhabra@pop-os:~/bandit12-bandit13/Level_6$ file data6
data6: POSIX tar archive (GNU)
achhabra@pop-os:~/bandit12-bandit13/Level_6$
achhabra@pop-os:~/bandit12-bandit13/Level_6$ #Per output of the file command, on the data6 file, is a tar file.  As such, we
 will create a directory titled Level_7 and copy the data6 file to it with the title data7.tar
achhabra@pop-os:~/bandit12-bandit13/Level_6$
achhabra@pop-os:~/bandit12-bandit13/Level_6$ cd ..
achhabra@pop-os:~/bandit12-bandit13$ mkdir -v Level_7 && cp -v ./Level_6/data6 ./Level_7/data7.tar
mkdir: created directory 'Level_7'
'./Level_6/data6' -> './Level_7/data7.tar'
```

```
achhabra@pop-os:~/bandit12-bandit13$ ##############################################################################################
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ #Navigate to directory Level_7 and utilize the ls command to view its contents
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ cd Level_7 && ls
data7.tar
achhabra@pop-os:~/bandit12-bandit13/Level_7$
achhabra@pop-os:~/bandit12-bandit13/Level_7$ #The data7.tar file is archived [via the tar command] but not compressed.  This
 means multiple file(s) were grouped together and aggregated into a single tar file.  To extract the contents of this file w
e call the tar tar command with the extract [-x] option/switch [to extract data from the tar file], the verbose [-v] option/
switch [required for the command to execute] and the file [-f] option/switch.  tar has a default configuration to operate on
 tape devices.  tar stands for tape archive.  To have it operate on a file [vs. tape device] the file [-f] option/switch is
invoked.  Note: Unlike compression commands [tar is an archive file] the tar file does not purge compressed files after deco
mpression.
achhabra@pop-os:~/bandit12-bandit13/Level_7$
achhabra@pop-os:~/bandit12-bandit13/Level_7$ tar -xvf data7.tar
data8.bin
achhabra@pop-os:~/bandit12-bandit13/Level_7$
achhabra@pop-os:~/bandit12-bandit13/Level_7$ #Utilize the file command to determine the file/data type of data8.bin
achhabra@pop-os:~/bandit12-bandit13/Level_7$
achhabra@pop-os:~/bandit12-bandit13/Level_7$ file data8.bin
data8.bin: gzip compressed data, was "data9.bin", last modified: Sun Apr 23 18:04:23 2023, max compression, from Unix, origi
nal size modulo 2^32 49
```

```
achhabra@pop-os:~/bandit12-bandit13/Level_7$ #Create a directory, titled Level_8, via the mkdir command.  Copy the data8.bin
 file to the Level_8 directory with the title data8.gzip.
achhabra@pop-os:~/bandit12-bandit13/Level_7$
achhabra@pop-os:~/bandit12-bandit13/Level_7$ cd ..
achhabra@pop-os:~/bandit12-bandit13$
achhabra@pop-os:~/bandit12-bandit13$ mkdir -v Level_8 && cp -v ./Level_7/data8.bin ./Level_8/data8.gz
mkdir: created directory 'Level_8'
'./Level_7/data8.bin' -> './Level_8/data8.gz'
```





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Level 13 —> Level 14 Password

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wbWdlBxEir4CaE8LaPhauuOo6pwRmrDw