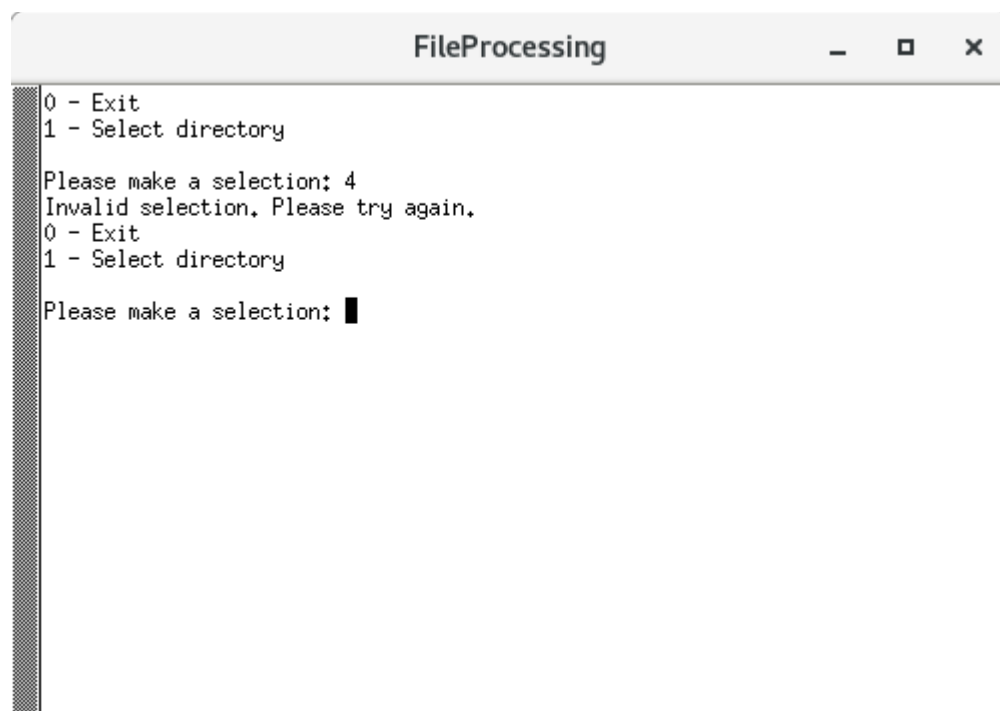


William Kendall  
CMSC 412  
Week 5  
File Processing



```
FileProcessing
0 - Exit
1 - Select directory

Please make a selection: 4
Invalid selection. Please try again.
0 - Exit
1 - Select directory

Please make a selection: █
```

Here I resolved the issues of not having a working directory by only allowing the user two options. The other options are disabled until one is set.

```
FileProcessing
0 - Exit
1 - Select directory
Please make a selection: 4
Invalid selection. Please try again.
0 - Exit
1 - Select directory
Please make a selection: █
```

Here the user tries to enter a directory that does not exist. They are shown an error.

```
FileProcessing
1 - Select directory
Please make a selection: 1
Please enter a directory: asdf
Error: Could not open directory.

Invalid selection. Please try again.
0 - Exit
1 - Select directory

Please make a selection: 1
Please enter a directory: .

Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directory content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)
Please make a selection: █
```

With a correct directory set, the user is now given options.

```
FileProcessing
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)

Please make a selection: 2

Path: .

Directories:
  bin
  obj

Files:
  FileProcessing.cbp
  hello.txt
  FileProcessing.depend
  Homework5 encrypt.pdf
  main.c
  Homework5.pdf

Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directory content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)

Please make a selection: █
```

Here the user selected to list the directory, and all the contents are shown.

```
FileProcessing
Please make a selection: 3
Path: .
Directories:
  bin
  obj
Files:
  FileProcessing.cbp
  hello.txt
  FileProcessing.depend
  Homework5_encrypt.pdf
  main.c
  Homework5.pdf
Path: ./bin
Directories:
  Debug
Files:
Path: ./bin/Debug
Directories:
Files:
  FileProcessing
Path: ./obj
Directories:
  Debug
Files:
Path: ./obj/Debug
Directories:
Files:
  main.o
Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directory content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)
Please make a selection: █
```

Here is a list of the directory with all the sub directories.

```
FileProcessing
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)

Please make a selection: 4
File to delete: awfehawefuhwaef
./awfehawefuhwaef is not a file.

Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directory content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)

Please make a selection: █
```

Deleting a file that does not exist.

\*The way linux deletes files is to unlink the file, the file will not be deleted until it is completely unlinked from all directories.

```
FileProcessing
00204200 : 0D 0A 3C 3C 2F 53 69 7A 65 20 31 33 31 2F 52 6F 6F 74 20 31
00204220 : 20 30 20 52 2F 49 6E 66 6F 20 33 31 20 30 20 52 2F 49 44 5B
00204240 : 3C 38 36 37 33 37 38 44 34 34 42 32 32 41 38 34 36 42 41 37
00204260 : 32 33 34 32 36 36 44 42 30 44 43 46 45 3E 3C 38 36 37 33 37
00204280 : 38 44 34 34 42 32 32 41 38 34 36 42 41 37 32 33 34 32 36 36
00204300 : 44 42 30 44 43 46 45 3E 5D 20 3E 3E 0D 0A 73 74 61 72 74 78
00204320 : 72 65 66 0D 0A 32 30 31 35 36 30 0D 0A 25 25 45 4F 46 0D 0A
00204340 : 78 72 65 66 0D 0A 30 20 30 0D 0A 74 72 61 69 6C 65 72 0D 0A
00204360 : 3C 3C 2F 53 69 7A 65 20 31 33 31 2F 52 6F 6F 74 20 31 20 30
00204380 : 20 52 2F 49 6E 66 6F 20 33 31 20 30 20 52 2F 49 44 5B 3C 38
00204400 : 36 37 33 37 38 44 34 34 42 32 32 41 38 34 36 42 41 37 32 33
00204420 : 34 32 36 36 44 42 30 44 43 46 45 3E 3C 38 36 37 33 37 38 44
00204440 : 34 34 42 32 32 41 38 34 36 42 41 37 32 33 34 32 36 36 44 42
00204460 : 30 44 43 46 45 3E 5D 20 2F 50 72 65 76 20 32 30 31 35 36 30
00204480 : 2F 58 52 65 66 53 74 6D 20 32 30 31 30 34 34 3E 3E 0D 0A 73
00204500 : 74 61 72 74 78 72 65 66 0D 0A 32 30 34 33 34 30 0D 0A 25 25
00204520 : 45 4F 46

Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directory content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decrypt file (XOR with password)

Please make a selection: █
```

Here is the last bit of contents displayed in hex from the Homework5.pdf.

```
FileProcessing
00204480 : 2F 58 52 65 66 53 74 6D 20 32 30 31 30 34 34 3E 3E 0D 0A 73
00204500 : 74 61 72 74 78 72 65 66 0D 0A 32 30 34 33 34 30 0D 0A 25 25
00204520 : 45 4F 46

Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directoy content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decryt file (XOR with pasword)

Please make a selection: 6
Enter filename: wjiefwefji
./wjiefwefji is not a file.

Working directory : .
0 - Exit
1 - Select directory
2 - List directory content (first level)
3 - List directoy content (all levels)
4 - Delete file
5 - Display file (hexadecimal view)
6 - Encrypt file (XOR with password)
7 - Decryt file (XOR with pasword)

Please make a selection: █
```

Inputs 6 and 7 are literally the same function. Here is the error of an invalid file name

```
kei@localhost:~/Documents/School/CMSC412/FileProcessing
File Edit View Search Terminal Help
00031c50: 3030 3030 3131 3520 3635 3533 3520 660d 0000115 65535 f.
00031c60: 0a30 3030 3030 3030 3131 3620 3635 3533 .00000000116 6553
00031c70: 3520 660d 0a30 3030 3030 3030 3131 3720 5 f..00000000117
00031c80: 3635 3533 3520 660d 0a30 3030 3030 3030 65535 f..00000000
00031c90: 3131 3820 3635 3533 3520 660d 0a30 3030 118 65535 f..000
00031ca0: 3030 3030 3131 3920 3635 3533 3520 660d 0000119 65535 f.
00031cb0: 0a30 3030 3030 3030 3030 3020 3635 3533 .00000000000 6553
00031cc0: 3520 660d 0a30 3030 3030 3537 3933 3920 5 f..00000057939
00031cd0: 3030 3030 3020 6e0d 0a30 3030 3030 3538 00000 n..00000058
00031ce0: 3137 3520 3030 3030 3020 6e0d 0a30 3030 175 00000 n..000
00031cf0: 3030 3538 3630 3520 3030 3030 3020 6e0d 0058605 00000 n.
00031d00: 0a30 3030 3031 3633 3435 3820 3030 3030 .0000163458 0000
00031d10: 3020 6e0d 0a30 3030 3031 3633 3838 3020 0 n..0000163880
00031d20: 3030 3030 3020 6e0d 0a30 3030 3031 3634 00000 n..0000164
00031d30: 3232 3220 3030 3030 3020 6e0d 0a30 3030 222 00000 n..000
00031d40: 3031 3634 3534 3920 3030 3030 3020 6e0d 0164549 00000 n.
00031d50: 0a30 3030 3032 3030 3537 3720 3030 3030 .0000200577 0000
00031d60: 3020 6e0d 0a30 3030 3032 3030 3736 3620 0 n..0000200766
00031d70: 3030 3030 3020 6e0d 0a30 3030 3032 3031 00000 n..0000201
00031d80: 3031 3620 3030 3030 3020 6e0d 0a30 3030 016 00000 n..000
00031d90: 3032 3031 3034 3420 3030 3030 3020 6e0d 0201044 00000 n.
00031da0: 0a74 7261 696c 6572 0d0a 3c3c 2f53 697a .trailer..<</Siz
00031db0: 6520 3133 312f 526f 6f74 2031 2030 2052 e 131/Root 1 0 R
00031dc0: 2f49 6e66 6f20 3331 2030 2052 2f49 445b /Info 31 0 R/ID[
00031dd0: 3c38 3637 3337 3844 3434 4232 3241 3834 <867378D44B22A84
00031de0: 3642 4137 3233 3432 3636 4442 3044 4346 6BA7234266DB0DCF
00031df0: 453e 3c38 3637 3337 3844 3434 4232 3241 E><867378D44B22A
00031e00: 3834 3642 4137 3233 3432 3636 4442 3044 846BA7234266DB0D
00031e10: 4346 453e 5d20 3e3e 0d0a 7374 6172 7478 CFE>] >>..startx
00031e20: 7265 660d 0a32 3031 3536 300d 0a25 2545 ref..201560..%E
00031e30: 4f46 0d0a 7872 6566 0d0a 3020 300d 0a74 0F..xref..0 0..t
00031e40: 7261 696c 6572 0d0a 3c3c 2f53 697a 6520 railer..<</Size
00031e50: 3133 312f 526f 6f74 2031 2030 2052 2f49 131/Root 1 0 R/I
00031e60: 6e66 6f20 3331 2030 2052 2f49 445b 3c38 nfo 31 0 R/ID[<8
00031e70: 3637 3337 3844 3434 4232 3241 3834 3642 67378D44B22A846B
00031e80: 4137 3233 3432 3636 4442 3044 4346 453e A7234266DB0DCF>
00031e90: 3c38 3637 3337 3844 3434 4232 3241 3834 <867378D44B22A84
00031ea0: 3642 4137 3233 3432 3636 4442 3044 4346 6BA7234266DB0DCF
00031eb0: 453e 5d20 2f50 7265 7620 3230 3135 3630 E>] /Prev 201560
00031ec0: 2f58 5265 6653 746d 2032 3031 3034 343e /XRefStm 201044>
00031ed0: 3e0d 0a73 7461 7274 7872 6566 0d0a 3230 >..startxref..20
00031ee0: 3433 3430 0d0a 2525 454f 46 4340..%E0F
[kei@localhost FileProcessing]$
```

This is the un-XORed copy of Homework5.pdf, I used xxd to test my program against.



```
kei@localhost:~/Documents/School/CMSC412/FileProcessing
File Edit View Search Terminal Help
00031c50: 406b 0102 0215 0104 0303 026e 6457 037f @k.....ndW..
00031c60: 7e49 4559 5f40 6b01 0302 1214 1200 0304 ~IEY @k.....
00031c70: 6871 1168 7844 4945 595f 406b 0003 0404 hq.hxDIEY @k....
00031c80: 0211 0005 027d 377a 6f42 4449 4559 5f40 .....}7zoBDIEY @
00031c90: 6a00 0a13 1201 1106 0317 3b5c 7d55 4244 j.....;\}UBD
00031ca0: 4945 595f 416a 0812 0511 0117 0016 5150 IEY Aj.....QP
00031cb0: 5b47 5542 4449 4559 5f40 6b11 0406 1107 [GUBDIEY @k.....
00031cc0: 1115 503a 5761 4755 4244 4c42 505c 497b ..P:WaGUBDLBP\I{
00031cd0: 0102 0314 0404 5b3b 3d6d 6147 5542 4141 .....[;=maGUBAA
00031ce0: 445e 5a50 6b01 0203 1414 4a38 3c07 6d61 D^ZPk.....J8<.ma
00031cf0: 4755 474c 4f45 5c4f 406b 0102 0304 5a29 GUGLOE\0@k....Z)
00031d00: 3f06 076d 6146 5341 404c 4d49 5f40 6b01 ?..maFSA@LMI @k.
00031d10: 0213 4a39 2e05 0607 6d60 4156 4a4c 4955 ..J9....m`AVJLIU
00031d20: 595f 406b 0112 5d29 3e14 0506 076c 6743 Y @k..])>....lgC
00031d30: 5740 4659 4559 5f40 6b11 5c3e 2e04 1405 W@FYEY @k.\>....
00031d40: 0606 6b65 4251 4b54 4945 595f 407b 5f3f ..keBQKTIEY @{ ?
00031d50: 3914 0414 0504 076d 6440 5252 4449 4559 9.....md@RRDIEY
00031d60: 5f50 353c 3803 1404 1407 0607 6a67 4145 _P5<8.....jgAE
00031d70: 4244 4945 594f 1e56 3b02 0314 0416 0507 BDIEY0.V;.....
00031d80: 076c 6757 5542 4449 4549 017d 5101 0203 .lgWUBDIEI.}Q...
00031d90: 1406 1404 0603 6971 4755 4244 4955 0762 .....iqGUBDIU.b
00031da0: 7a2f 4353 5a48 5156 383c 0b61 7e24 0c08 z/CSZHQV8<.a~$..
00031db0: 1159 445a 5e5f 095e 5d47 0405 0405 1665 .YDZ^..^]G.....e
00031dc0: 7218 1903 1d54 4a44 495f 5009 1e7b 777f r....TJDI P..{w.
00031dd0: 081c 0301 046a 6933 5146 364b 4728 5744 .....ji3QF6KG(WD
00031de0: 6d73 7304 1607 1007 0001 1913 4721 3132 mss.....G!12
00031df0: 3c4b 5557 466c 0205 0b60 0010 7704 051c <KUWFl...`..w...
00031e00: 6943 5330 354e 475a 5b42 6d07 7671 1470 iCS05NGZ[Bm.vq.p
00031e10: 6773 7309 0071 495b 7f7e 0a01 081d 0423 gss...qI[.~.....#
00031e20: 4357 5529 3e16 0507 026b 617a 6f57 513c CWU)>....kazowQ<
00031e30: 3a2f 627a 2343 5755 293e 1415 063a 5725 :/bz#CWU)>...:W%
00031e40: 0504 1b18 1c07 6465 4c67 1e61 5a5e 5104 .....deLg.aZ^Q.
00031e50: 0405 0672 0318 0a06 5448 5559 4f22 7478 ...r....THUYO"tx
00031e60: 5c55 4b14 1704 1607 7d03 582c 362f 454d \UK.....}.X,6/EM
00031e70: 5f58 436c 0976 0710 7616 0777 0f69 6735 _XCl.v..v..w.ig5
00031e80: 2445 464a 415b 5946 1f73 0277 6772 610b $EFJA[YF.s.wgra.
00031e90: 0a0f 6b66 4452 4a30 4d41 2b5d 421a 0906 ..kfDRJ0MA+]B...
00031ea0: 0566 7513 0705 036f 6741 2130 443d 362f .fu....ogA!0D=6/
00031eb0: 2a4e 0611 1d63 5651 5215 0407 6c64 4155 *N...cVQR...ldAU
00031ec0: 5d2c 2b10 0f3c 0436 1100 0315 0410 0108 ],+...<.6.....
00031ed0: 0950 5b04 1113 060d 0d1b 0a16 563b 0003 .P[.....V;..
00031ee0: 1007 1005 3b3d 7874 322a 34 .....;=xt2*4
[kei@localhost FileProcessing]$
```

Here are the contents of Homework5.pdf after being XORed with Qwertyuiop[123\$4\$567]