More Practice Problems on Shell Scripting

Problem 1

Write a bash script, `script1.sh` that will take filenames as arguments and removes execute permission from the file, however only if the file is a **regular** file. The script must check to see that there is at least one argument, otherwise shows usage message for the script.

If we give the command `ls -l` in the current directory, the output is,

```
drwxrwxr-x 4 cse cse 4096 Mar  9 00:19 a
-rwxrwxr-x 1 cse cse    0 Mar  9 00:37 a.txt
-rw-rw-r-- 1 cse cse    0 Mar  9 00:37 b.txt
-rw-rw-r-- 1 cse cse    0 Mar  9 00:37 c.txt
-rwxr-xr-x 1 cse cse  638 Mar  9 01:36 script1.sh
```

Now, if we give the following commands in turn, the output will be as follows:
`bash script1.sh`

```
Usage script1.sh filename1 filename2 ...
```

`bash script1.sh a.txt sds b.txt a`

```
a.txt is currently executable.
-rwxrwxr-x 1 cse cse 0 Mar 9 00:37 a.txt
a.txt's executable permission is now changing.
-rw-rw-r-- 1 cse cse 0 Mar  9 00:37 a.txt
a.txt is currently not executable.
sds doesnot exist.
-rw-rw-r-- 1 cse cse 0 Mar  9 00:37 b.txt
a is not a regular file.
```

Problem 2

Write a bash script `script2.sh` that will take a line number `n` and a string `PATTERN` as input and delete all the `txt` files in the directory which contains the string `PATTERN` in line `n`.
For example, consider the following files:

- file1.txt

  ```
  Twinkle twinkle little star
  How I wonder what you are
  Up above the world so high
  Like a diamond in the sky
  ```

- file2.txt

```
int i;
for (i=0;i<10;i++)
     printf("%d\n",i);
```

- file3.txt

```
Dear friend,
I haven't seen you for a long time.
Please let me know where you are.
```

Now if you run

`script2.sh 2 "for"`

then `file2.txt` and `file3.txt` will be deleted as both of them contain "for" in line 2. Similarly, if you run

`script2.sh 2  "you"`

then `file1.txt` and `file3.txt` will be deleted.

Problem 3

Write a shell script `script3.sh` that deletes all the files in the current directory that has at least one digit in its file name.
Remember, you cannot delete any directory even if its name contains digit.

Suppose current directory contains the following files:

```
abc.txt     myfile_1.txt     program_v1.01     myfile.txt
```

After running `script3.sh` the contents in the directory will be:

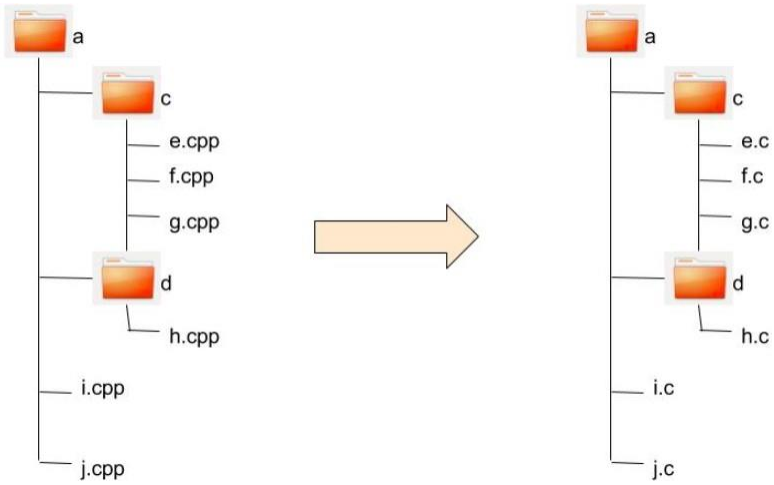
```
abc.txt     myfile.txt
```

Problem 4

Write a shell script `script4.sh` that will recursively go into all the subdirectories of the current directory and rename all the `cpp` files into `c` files.

You might find this https://www.gnu.org/software/bash/manual/html_node/Shell-Parameter-Expansion.html helpful to figure out the extension of a file.

See the image below:


a
c
e.cpp
f.cpp
g.cpp
d
h.cpp
i.cpp
j.cpp
a
c
e.c
f.c
g.c
d
h.c
i.c
j.c