

Question 2:

When we move the binary file output to the directory /usr/local/bin, it will be executed from any working directory.

```
fatmaezzatz@fatma: ~/Videos
fatmaezzatz@fatma:~$ gcc binarySearch.c -o binarySearch
fatmaezzatz@fatma:~$ chmod +x binarySearch
fatmaezzatz@fatma:~$ sudo mv binarySearch /usr/local/bin/
fatmaezzatz@fatma:~$ binarySearch
The index is 4
fatmaezzatz@fatma:~$ ls
binarySearch.c  Documents      file2.c        Pictures      Templates
data1.tar       Downloads     file3.bash     Public        Videos
Day2.docx       'Fatma Ezzat' Music          snap
Desktop         file         myDirectory    task3.bash
docs            file1.c      new            Tasks
fatmaezzatz@fatma:~$ cd Videos
fatmaezzatz@fatma:~/Videos$ binarySearch
The index is 4
fatmaezzatz@fatma:~/Videos$
```

It happens because /usr/local/bin directory has PATH variable which contains a list of directories.

When we try to execute any file in this place, initially, it will look for its directory on this variable.

```
fatmaezzatz@fatma:~/Videos$ printenv PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
fatmaezzatz@fatma:~/Videos$ cd ~
fatmaezzatz@fatma:~$ printenv PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/snap/bin
fatmaezzatz@fatma:~$
```