Programming Assignment (PA) -1
(Shell Command Execution Simulation in C)
Report

CS307 – Operating Systems

23 October 2021
DEADLINE: 24 October 2021,
23:55

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Command Explanation:

Main command:

man touch | grep -A 5 -e --time=WORD

touch command creates an empty file if file does not exist. If the file exists, the last access and modification times of the file change to the current time. "--time" flag takes an argument called WORD. It can be access, atime, modify, mtime. By this command only specified time is changed to the current time.

touch hello.c --time=access
For example, this command only changed the access time of "hello.c" file to the current time which is 2021-10-23 16:02:30

```
[rebahozkoc@flow ~]$ stat hello.c
  File: 'hello.c'
  Size: 461          Blocks: 8          IO Block: 1048576 regular file
Device: 29h/41d Inode: 18745828     Links: 1
Access: (0644/-rw-r--r--)  Uid: (41537/rebahozkoc)   Gid: ( 100/   users)
Access: 2021-02-03 15:29:00.000000000 +0300
Modify: 2021-02-03 15:30:00.000000000 +0300
Change: 2021-10-23 16:01:17.429203320 +0300
 Birth: -
[rebahozkoc@flow ~]$ touch hello.c  --time=access
[rebahozkoc@flow ~]$ stat hello.c
  File: 'hello.c'
  Size: 461          Blocks: 8          IO Block: 1048576 regular file
Device: 29h/41d Inode: 18745828     Links: 1
Access: (0644/-rw-r--r--)  Uid: (41537/rebahozkoc)   Gid: ( 100/   users)
Access: 2021-10-23 16:02:30.889200612 +0300
Modify: 2021-02-03 15:30:00.000000000 +0300
Change: 2021-10-23 16:02:30.889200612 +0300
 Birth: -
```

I chose this command because touch command gives a very wide range of control of file creation with very simple usage. It also allows the change of timestamps of file and provides so many options such as --time, -t, -a and so on. I chose the --time option because it allows users to change timestamps independently.

-A flag of grep command specifies how many lines will be printed after finding the specified word.

-e flag of grep command solves the special character (-) problem. It says that next argument is the pattern not an option.

Process Hierarchy: