Tutorial 1: Intro To Linux

Faculty of Engineering and Applied Science

SOFE 3950U : Operating Systems | CRN: 74171

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Group 8

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Conceptual Questions

1. Write a brief summary of Linux and why you believe it has become so popular in the years since its conception. Provide examples where the Linux operating system has been used.

   Linux is an open-source Unix-like computer operating system which runs a wide variety of hardware from phones, desktops, routers and nearly every supercomputer in the world. It refers to Kernel created by Linus and is commonly used to describe a collection of software, interface and tools that make up the system. Linux, an open-source operating system, uses GNU to implement a copyleft license that requires it to be free, open and very accessible to any user.
   A few examples where Linux can be used are;
   1. Embedded Systems
   2. Servers
   3. Supercomputers
   4. Desktops
   5. Security firewalls
   6. Networking i.e. routers and switches.

2. What does it mean for Software to be considered “Free” or Open Source, why is this significant?

For a Software to be considered “Free” or Open Source it has to be accessible to the general public and users can edit or modify source code within the software. It is significant because it is easily accessible by the public, there is freedom to make changes to a given code, there is transparency and it is easily shareable.

3. What are the benefits of Open Source, what are the drawbacks?
Benefits of Open source

- There is Transparency and Trust
- There is public freedom to access
- There is freedom to modify
- There is access to open source.

- It allows communal collaboration.

Drawbacks

- There could be security issues
- Hardware that supports the software are limited
- Complexity for beginner and non-technical user
- Integration Challenge

4. Name an Open source License.
GPL-GNU General Public License

5. Name the Three Standard Streams, their numeric value and the purpose
   a. STDIN (0)- It is used for receiving input data.
   b. STDOUT (1) -It is used to display the output in a program
   c. STDERR (2) -It is used to display error messages arising from a program.

Application Questions

1. Commands:
    - mkdir tutorials && cd tutorials
    - touch tutorial1
    - cp tutorial1 tutorial_1 && rm tutorial1

```
stanley@stanley-VirtualBox:~$ mkdir tutorials
stanley@stanley-VirtualBox:~$ cd tutorials
stanley@stanley-VirtualBox:~/tutorials$ touch tutorial1
stanley@stanley-VirtualBox:~/tutorials$ cp tutorial1 tutorial_1
stanley@stanley-VirtualBox:~/tutorials$ rm tutorial1
```

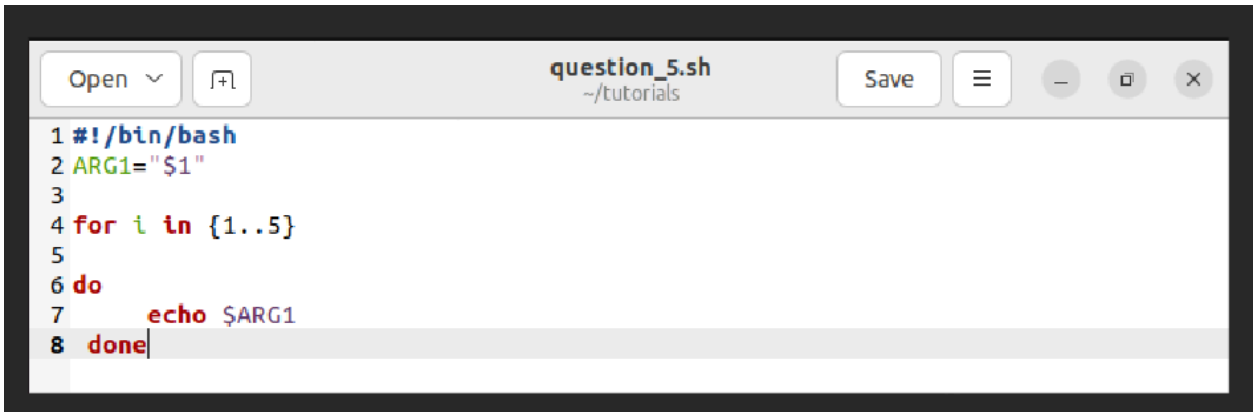
2. cd ~ && ln -s ~/work/tutorials/tutorial_1
3. Commands:
    - grep -r “stdin” ~/work/tutorials/
    - find ~/work/tutorials -type f -exec grep "stdin" {} \;

```
stanley@stanley-VirtualBox:~$ ln -s /work/tutorials/tutorial_1
stanley@stanley-VirtualBox:~$ grep -r "stdin"/work/tutorials
```

4. find . -type f -name “tutorial*” 2> errors.log

```
stanley@stanley-VirtualBox:~$ find /work/tutorials/ -type f -name "tutorial*" 2
> errors.log
```

5.



```
stanley@stanley-VirtualBox:~$ cd tutorials
stanley@stanley-VirtualBox:~/tutorials$ ls
question_5.sh  tutorial_1
stanley@stanley-VirtualBox:~/tutorials$ chmod +x question_5.sh
```

```
stanley@stanley-VirtualBox:~/tutorials$  ./question_5.sh hello
hello
hello
hello
hello
hello
stanley@stanley-VirtualBox:~/tutorials$
```