

CS 213: System Software Lab
Autumn 2023, IIT Dharwad
Lab-3 Exercise
Linux and Bash

1. Write a shell script to compare the file1.txt and file2.txt byte by byte.

```
sysad@sysad-OptiPlex-7080:~/bash/Lab-3$ bash 1.sh
f1.txt f2.txt differ: byte 6, line 2
```

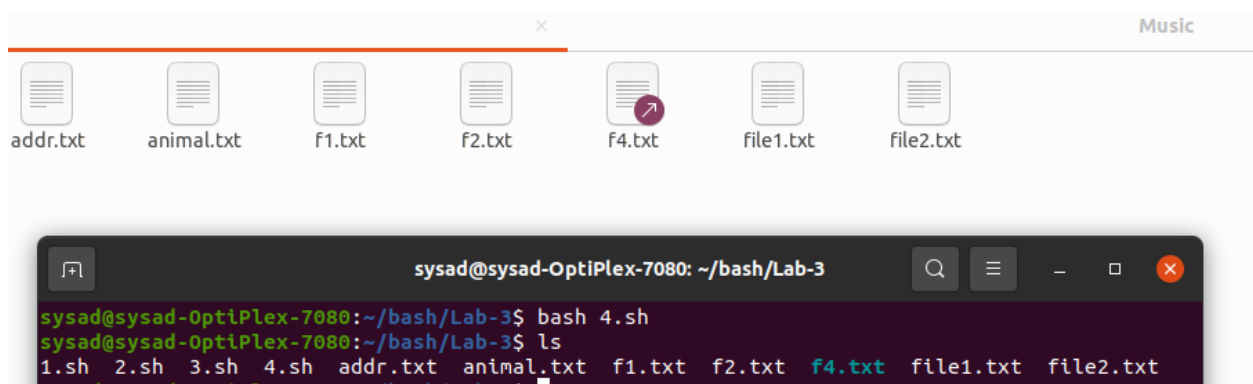
2. Write a shell script to compare two files side by side (parallel comparison).

```
sysad@sysad-OptiPlex-7080:~/bash/Lab-3$ bash 2.sh
Axoloti | Armadillo
Blue Jay | Ass
        > Bat
        > Bear
        > Blue whale
Cats     | Cats
Diplocaulus | Cheetah
Dogs     | Cow
Dolphins | Deer
Dove     | Dog
Duck     | Dolphin
Eagle    | Elephant
Elephants | Fox
Frogmouth | Giant panda
Frogs    | Giraffe
Horses   | Gorilla
Humans   | Hippopotamus
Hummingbird | Horse
Hyla     | Kangaroo
Jaguars  | Koala
Kangaroos | Leopard
Leopards | Lion
Lions    | Monkey
Microsauria | Mouse
Monkeys   | Ox
Newts     | Panda
Owl       | Sheep
Panthers  | Squirrel
Parrot    | Tiger
Pumas     | Wolf
Salamanders | Wolverine
Scarlet Iiwi <
Seagull     <
Shoebill Stork <
Shoveler    <
Sparrow     <
Tigers      <
Toads       <
Toucan      <
Urodela     <
Vulture     <
Whales      <
```

3. Write a shell script to print the message “Files are same” if both files are the same, otherwise it should print the message “Files are different”.

```
sysad@sysad-OptiPlex-7080:~/bash/Lab-3$ bash 3.sh
Enter the path to the first file:
file1.txt
Enter the path to the second file:
file2.txt
Files are different
sysad@sysad-OptiPlex-7080:~/bash/Lab-3$ bash 3.sh
Enter the path to the first file:
file1.txt
Enter the path to the second file:
file1.txt
Files are same
```

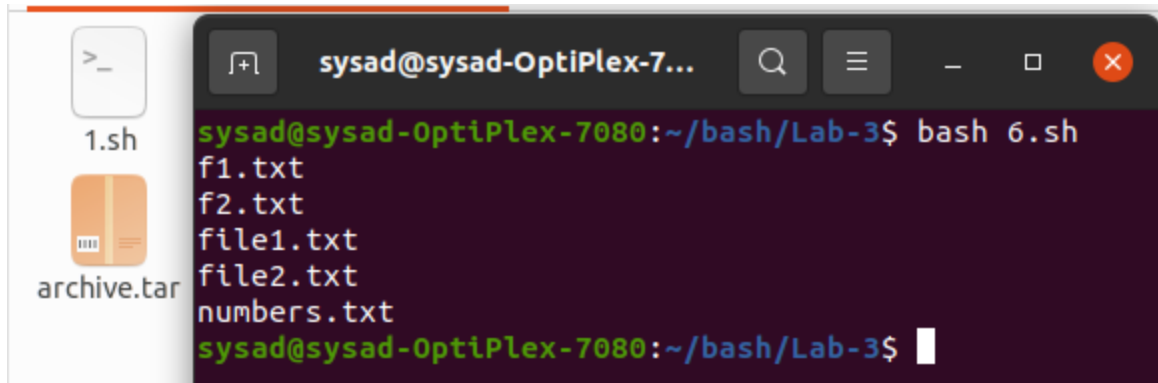
4. Write a shell script to create a soft link to the given file f1.txt as f4.txt.



5. Write a shell script to find the sum of all numbers in numbers.txt using awk command.

```
sysad@sysad-OptiPlex-7080:~/bash/Lab-3$ bash 5.sh
Enter the name of the file containing numbers:
numbers.txt
The sum of numbers in numbers.txt is: 483
```

6. Write a shell script to create a new archive file as archive.tar of the given input files(f1.txt f2.txt file1.txt file2.txt numbers.txt).

A terminal window titled 'sysad@sysad-OptiPlex-7...' with a search icon, menu icon, and window controls. The prompt is 'sysad@sysad-OptiPlex-7080:~/bash/Lab-3\$'. The user has entered 'bash 6.sh', and the terminal displays a list of files: 'f1.txt', 'f2.txt', 'file1.txt', 'file2.txt', and 'numbers.txt'. The prompt returns to 'sysad@sysad-OptiPlex-7080:~/bash/Lab-3\$'. To the left of the terminal is a sidebar with a file manager icon and a list of files: '1.sh' and 'archive.tar'.

7. Write a shell script to replace all occurrences of "old" with "new" in the given file "example.txt".

```
sysad@sysad-OptiPlex-7080:~/bash/Lab-3$ bash 7.sh
In the heart of the historic city, you'll find charming cobblestone streets lined with new-fashioned shops and quaint cafes. The towering cathedral, a testament to the city's rich history, stands proudly amidst the new architecture. As you wander through these time-worn streets, you can't help but feel a sense of nostalgia for a bygone era. The new world charm of this place is truly enchanting, drawing visitors from far and wide to experience its timeless beauty. The new oak tree in the center of the village square has been a gathering place for generations, its branches providing shade for the young and new alike. As the sun sets over the horizon, casting a warm golden glow on the new farmhouse, you can hear the sounds of laughter and stories being shared by the fireplace. This town has a deep-rooted sense of community, where the new traditions are honored and passed down to the next generation. It's a place where the new and the new seamlessly coexist, creating a unique blend of history and progress.
```

8. Write a shell script to ssh to your neighbor or known machine and execute "echo 'Hello World'" on the connected terminal.

```
sysad@sysad-OptiPlex-7050:~/bash$ bash 8.sh
user@10.250.65.101's password:
Welcome to Ubuntu 20.04.2 LTS (GNU/Linux 5.15.0-78-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:       https://ubuntu.com/advantage

229 updates can be installed immediately.
0 of these updates are security updates.
To see these additional updates run: apt list --upgradable

New release '22.04.3 LTS' available.
Run 'do-release-upgrade' to upgrade to it.

Your Hardware Enablement Stack (HWE) is supported until April 2025.
Last login: Wed Aug 23 10:58:29 2023 from 10.250.65.164
user@sysad-OptiPlex-7050-1:~$
```

9. Write a shell script to copy from one of your local directory to another directory using rsync command.

```
sysad@sysad-OptiPlex-7050:~/bash$ bash 9.sh
sending incremental file list
bash/
bash/8.sh
bash/9.sh

sent 270 bytes  received 58 bytes  656.00 bytes/sec
total size is 67  speedup is 0.20
sysad@sysad-OptiPlex-7050:~/bash$
```

10. Create a makefile which will print “Hello world” if I run ‘make say_hello’ and which will execute a C program if I run ‘make run_program’.

```
sysad@sysad-OptiPlex-7050:~/bash$ make say_hello
Hello world...!!!
sysad@sysad-OptiPlex-7050:~/bash$ make run_program
This C program...!!!
```