ASSIGNMENT 1 - Running Linux Commands

Part - 1

```
1000  ls
1001  pwd
1002  mkdir linux-a
1003  cd linux-a
1004  touch file1.txt
1005  cat > file1.txt
1006  cat
1007  cat file.txt
1008  cat file1.txt
1009  cp file1.txt file2.txt
1010  cat file2.txt
1011  rename 's/file1.txt/renamed.txt/' files
1012  head file2.txt
1013  tail file2.txt
1014  tac file2.txt
1015  more file2.txt
1016  less file2.txt
1017  su temp_user
1018  id
1019  useradd temp
1020  passwd temp
1021  groupadd group1
1022  cat file2.txt | tac
1023   cat file2.txt | tac | cat \n
1024  cut -d= -f2 file2.txt
1025  cat file2.txt | grep h
1026  comm file1.txt file2.txt
1027  echo class7 | sed 's/class/jtp/\nclass7
1028  who
1029  whoami
1030  cal
1031  date
1032  cat file1.txt | tee new.txt | cat
1033  cat file1.txt | tr 'hello' 'HELLO'
1034  sort file1.txt |uniq
1035  wc file2.txt
1036  od -b file2.txt
1037  gzip file1.txt file2.txt
1038  ls
1039  gunzip file1.txt file2.txt
1040  find. -name ".txt"
1041  find . -name *.txt"
1042  locate file1.txt
1043  sleep 2
1044  rm file1.txt
1045  rm file2.txt
1046  rmdir linux-a
kshama@Kshamas-MacBook-Air linux-a %
```

Directory commands

1. pwd-display the location of the current working directory
2. mkdir - create new directory
3. rmdir -delete directory
4. ls - display list of contents
5. cd - change directory

File commands

6. touch - create file
7. cat > filename - write into file
8. cat - display contents of file
9. cp - copy file contents
10. mv - move file

User commands

11. su - administrative access to another use
12. id - display user ID
13. useradd - add or remove user
14. passwd - create or change password
15. groupadd - create a user group

Filter commands

16. comm - compare 2 files
17. wc - count words
18. cut - select specific column
19. gzip - compress file
20. gunzip - decompress file

Utility commands

21. cal - current months calendar
22. date - display date, time

Part - 2

1. Swap two numbers without using third variable

Code:

```
  UW PICO 5.09                                        File: swap.sh

#! /bin/sh
echo "Enter first number:"
read a
echo "Enter second number:"
read b
b=$((a+b))
a=$((b-a))
b=$((b-a))
echo "The swapped numbers are:"
echo $a
echo $b
```

Output:

```
kshama@Kshamas-MacBook-Air assignment2 % nano swap.sh
kshama@Kshamas-MacBook-Air assignment2 % ./swap.sh
zsh: permission denied: ./swap.sh
kshama@Kshamas-MacBook-Air assignment2 % chmod +x
usage:  chmod [-fhv] [-R [-H | -L | -P]] [-a | +a | =a  [i][# [ n]]] mode|entry file ...
        chmod [-fhv] [-R [-H | -L | -P]] [-E | -C | -N | -i | -I] file ...
kshama@Kshamas-MacBook-Air assignment2 % chmod +x swap.sh
kshama@Kshamas-MacBook-Air assignment2 % ./swap.sh
Enter first number:
10
Enter second number:
30
The swapped numbers are:
30
10
kshama@Kshamas-MacBook-Air assignment2 %
```

2. Accept one integer argument and print its multiplication table

Code:

```
  UW PICO 5.09                                        File: multi.sh

#! /bin/bash
echo "Enter a number:"
read n
echo "The multiplication table of $n is:"
for((i=1;i<=10;i++))
do
        echo -n "$n * $i = `expr $n \* $i`"
        echo ""
done
```

Output:

```
kshama@Kshamas-MacBook-Air assignment2 % chmod +x multi.sh
kshama@Kshamas-MacBook-Air assignment2 % ./multi.sh
Enter a number:
10
The multiplication table of 10 is:
10 * 1 = 10
10 * 2 = 20
10 * 3 = 30
10 * 4 = 40
10 * 5 = 50
10 * 6 = 60
10 * 7 = 70
10 * 8 = 80
10 * 9 = 90
10 * 10 = 100
kshama@Kshamas-MacBook-Air assignment2 %
```

ASSIGNMENT 2 - Running a simple C program on linux

Instructions given had a straight forward approach and followed the same.

Created a C file and printed a text.

Code:

```
#include <stdio.h>
int main(){
    printf("Kshama 12345\n");
return 0;
}
```

Output:

```
kshama@Kshamas-MacBook-Air lab0 % nano hello.c
kshama@Kshamas-MacBook-Air lab0 % gcc hello.c -o hello.o
kshama@Kshamas-MacBook-Air lab0 % ls
hello.c hello.o
kshama@Kshamas-MacBook-Air lab0 % ./hello.o
Kshama 12345
kshama@Kshamas-MacBook-Air lab0 %
```

ASSIGNMENT 3 - Shell scripts - Research on Shell scripts and solve these questions.

1. **Script to Print All .txt and .c Files**

   Code:

```
shopt -s nullglob
# !/bin/bash
txt_files=$(ls *.txt)
c_files=(*.c)
if [[ ${#txt_files[@]} -gt 0 || ${#c_files[@]} -gt 0 ]]; then
        ls *.txt *.c 2>/dev/null
else
        echo "Creating dummy files"
        touch file1.txt file2.txt file1.c file2.c
        echo "created:"
        ls *.txt *.c
fi
```

   Output:

```
kshama@Kshamas-MacBook-Air assignment3 % nano file.sh
kshama@Kshamas-MacBook-Air assignment3 % chmod +x file.sh
kshama@Kshamas-MacBook-Air assignment3 % ./file.sh
add.sh  file.sh
kshama@Kshamas-MacBook-Air assignment3 %
```

2. **Script to Add Two Numbers**

   Code:

```
  UW PICO 5.09                                    File: add.sh

#! /bin/sh
echo "Enter first number:"
read a
echo "Enter second number:"
read b
c=$((a+b))
echo "The sum of 2 numbers is:"
echo $c
```

   Output:

```
kshama@Kshamas-MacBook-Air assignment3 % nano add.sh
kshama@Kshamas-MacBook-Air assignment3 % chmod +x add.sh
kshama@Kshamas-MacBook-Air assignment3 % ./add.sh
Enter first number:
6
Enter second number:
7
The sum of 2 numbers is:
13
kshama@Kshamas-MacBook-Air assignment3 %
```

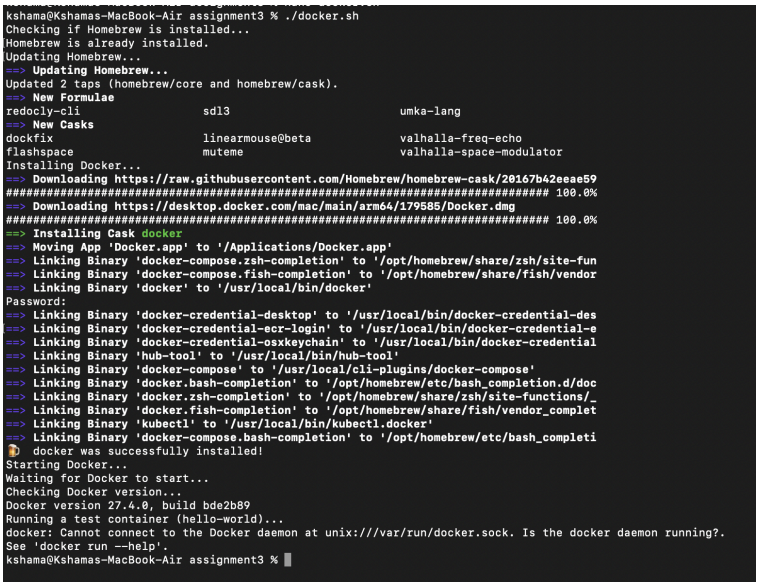
3. **Installing Docker Using a Shell Scripts**

   Code:

```
  UW PICO 5.09

#!/bin/bash
echo "Checking if Homebrew is installed..."
if ! command -v brew &> /dev/null; then
    echo "Homebrew is not installed. Installing Homebrew..."
    /bin/bash -c "$(curl -fsSL
https://raw.githubusercontent.com/Homebrew/install/HEAD/install.sh)"
else
    echo "Homebrew is already installed."
fi
echo "Updating Homebrew..."
brew update
echo "Installing Docker..."
brew install --cask docker
echo "Starting Docker..."
open /Applications/Docker.app
echo "Waiting for Docker to start..."
sleep 10
echo "Checking Docker version..."
docker --version
echo "Running a test container (hello-world)..."
docker run hello-world
```

Output:

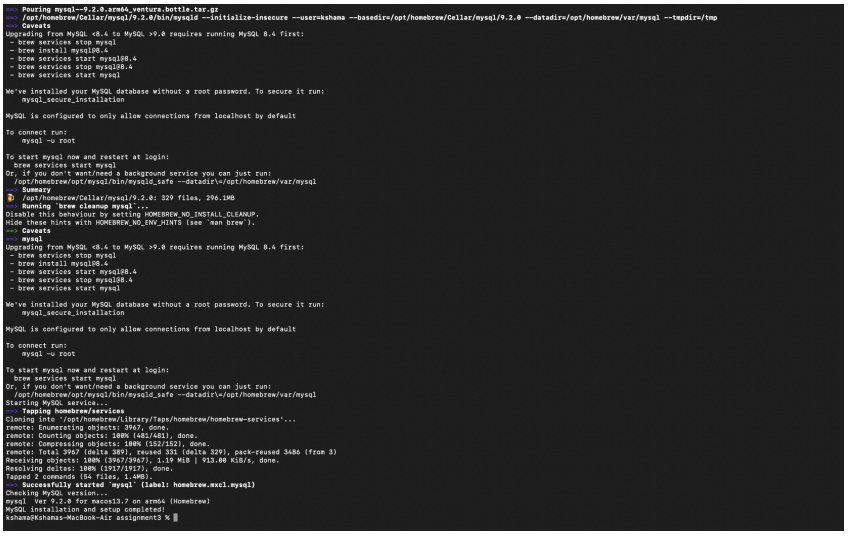


Installed docker using homebrew, opened on applications and ran it.

4. Download and Install MySQL Database

Code:

Output:



Installed Mysql using Homebrew, started sql server and verified installation.