AUTHOR: Surya Seetharaman

Operating System Labsheet one:-

Question one:-

1. Copy poem to your folder
   Try these commands

   Part A:

   Cat poem
   Cat poem | more

   What is the difference between cat and more command?

   Answer:-

   Cat displays file contents(actually for concatenation). If the file is large the contents scroll off the screen before we view it. So command 'more' is like a pager which displays the contents page by page. If file having large number of details that won't fit in output terminal and screen scrolls up very fast, we can use parameters like more(or less) with cat command as show above (second command).

   Part B:

   tail -1 poem
   tail +3 poem
   What is the difference between these 2 commands?

   "tail -1 poem" displays the last line of the text file. So basically numbers having a leading minus sign display that many lines from the end.
   "tail +3 poem" displays from the third line of the document (i.e from the top unlike in the "-1" case).

   Question two:-

2. Copy poem to a new file "*new_poem*". Make some changes in "*new_poem*".
   Try these commands
   Cmp poem new_poem.
   Diff poem new_poem.

   What difference between cmp and diff commands?

AUTHOR: Surya Seetharaman

Answer:-
cmp compares two files byte by byte while diff compares files line by line. “cmp” gives the 1st byte number and line number of file1 which is to be changed to make poem identical to new_poem. Diff gives the text of new_peom which is different from poem.We can use directory name in diff, but not in cmp. “cmp” and “'diff” both command are used to list the differences, the difference between both the command is that 'cmp' is used to find the difference between files whereas 'diff' is used to find the difference between directories.cmp will list the line and column number that are different between two files. diff will list the different files and sub-directories present between two directories.

Question three:-

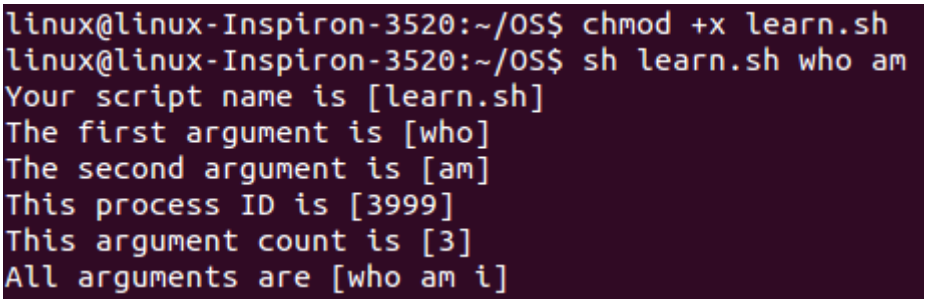
3. Print the following
   Your command, and each and every argument, total number of arguments, all arguments.
   Note: all these in separate lines

   Answer:-

   Code in Shell Script:-

```
#!/bin/sh
echo "The current shell script command is [$0]"
echo "First argument is [$1]"
echo "This process ID is [$$]"
echo "The total argument count is [$#]"
echo "All arguments [$@]"
```

   Output Screen:-



AUTHOR: Surya Seetharaman

Question four:-

4. Print the following
   Today’s lab is shell programming
   We have dd files in /etc
   The value of $x is 100

   Answer:-

   Code in shell scripting:-

   #!/bin/sh

   echo "Today's lab is shell programming"
   echo "We have dd files in \etc"
   echo "The value of \$x is 100"

   Output:-

```
linux@linux-Inspiron-3520:~/OS$ chmod +x learn.sh
linux@linux-Inspiron-3520:~/OS$ ./learn.sh
Today's lab is shell programming
We have dd files in \etc
The value of $x is 100
linux@linux-Inspiron-3520:~/OS$
```

   Question five:-

5. Write a script that would wait 5 seconds and then display the time

   Answer:-

   Code in shell Scripting:-
   #!/bin/sh

   sleep 5
   date +%r

   Output:-

```
linux@linux-Inspiron-3520:~/OS$ chmod +x learn.sh
linux@linux-Inspiron-3520:~/OS$ ./learn.sh
12:03:57 PM IST
```

AUTHOR: Surya Seetharaman

Question six:-

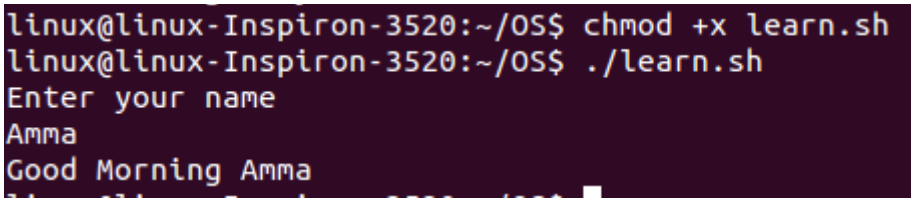
6. Write a script that will take a person's name as a parameter to the program name.
   The script should greet that person, as "Good Day name."

   Answer:-

   Code in Shell Scripting:-

```
#!/bin/sh
echo "Enter your Name"
read name
echo "Good Day $name"
```

   Output:-



   Question seven:-

7. The length and breadth of a rectangle and radius of a circle are input through keyboard.
   Write a script to calculate the area and perimeter of a rectangle and area and circumference of the circle.

   Answer:-
   Code in shell scripting:-

```
#!/bin/sh

echo "Enter the length of the rectangle"
read l
echo "Enter the breadth of the rectangle"
read b
rect_area=`expr "scale=2;$l * $b"|bc`
echo "The area of the rectangle is $rect_area"
f=`expr "scale=2;$l + $b"|bc`
rect_perimeter=`expr "scale=2;2*$f"|bc `
echo "The perimeter of the rectangle is $rect_perimeter"
```

```
echo "Enter the radius of the circle"
read r
circle_area=`expr "scale=2;3.14 * $r * $r"|bc`
echo "The area of the circle is $circle_area"
circle_perimeter=`expr "scale=2;2*3.14 * $r"|bc`
echo "The perimeter of the circle is $circle_perimeter"
```

Output:-

```
linux@linux-Inspiron-3520:~/OS$ chmod +x lab1_Q7.sh
linux@linux-Inspiron-3520:~/OS$ ./lab1_Q7.sh
Enter the length of the rectangle
3
Enter the breadth of the rectangle
3
The area of the rectangle is 9
The perimeter of the rectangle is 12
Enter the radius of the circle
3
The area of the circle is 28.26
The perimeter of the circle is 18.84
```

Question eight:-

8. Write a script that would first verify if file “myfile” exits. If it does not, create it, and then ask the user for confirmation to erase it.

Answer:

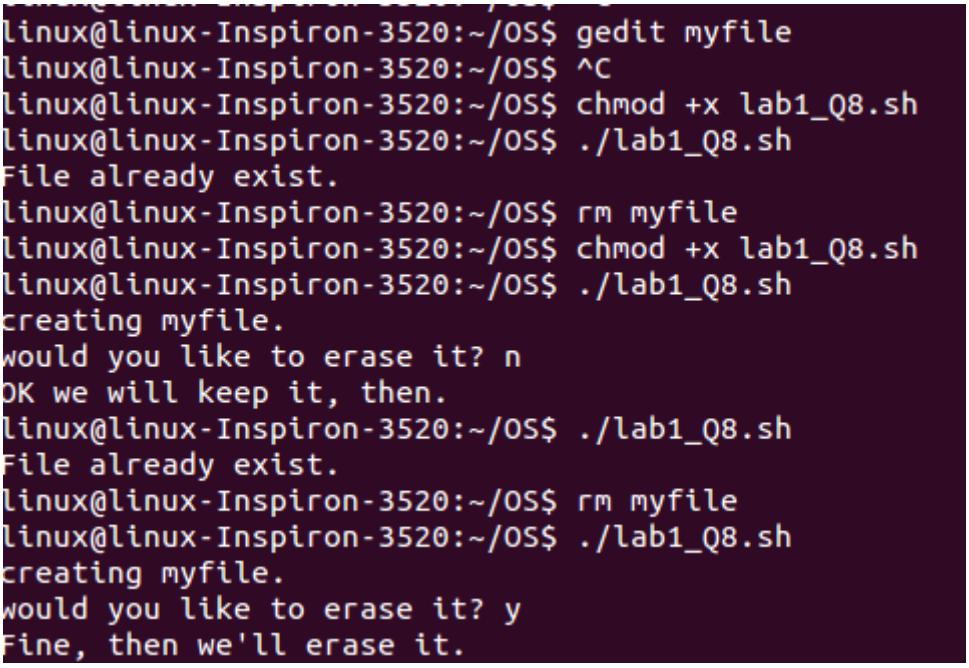
Code:

```
#!/bin/sh
  FILE="myfile"
  if test -f $FILE
  then
    echo "File already exist."
  else
    echo "creating myfile."
    touch myfile
    while :
    do
       echo -e "would you like to erase it? \c"
       read ANS
```

```
        case $ANS in
          [yY] | [yY][eE][sS])  echo "Fine, then we'll erase it."
                rm myfile
                break
                ;;
          [nN] | [nN][oO]) echo "OK we will keep it, then."
                break
                ;;
          *) echo "You must enter a yes or no!"
        esac
      done

    fi
    exit 0
```

Output:-



Question nine:-

9. Given a file of numbers (one per line), write a script that will find the lowest and highest number
(use read, sort, head, tail)

```
file=$1
sort -g $file -o $file
echo -n "The lowest number is: "
```

```
head -1 $file
echo -n "The highest number is: "
tail -1 $file
```

```
linux@linux-Inspiron-3520:~/OS$ chmod +x lab1_Q9.sh
linux@linux-Inspiron-3520:~/OS$ ./lab1_Q9.sh number.txt

The lowest number is: 0
The highest number is: 10
linux@linux-Inspiron-3520:~/OS$
linux@linux-Inspiron-3520:~/OS$
```

10. Write a shell script which will receive any number of filename as arguments. The shell script should check whether every argument supplied is a file or directory. The shell script should check whether every argument supplied is a file or directory.
If it is a directory it should be appropriately reported.
If it is a filename then name of the file as well as the number of lines present in it should be reported.

Answer:-

Code:-

```
echo "There are $# arguments "
echo "The arguments are $* "
for i in $*
        do
        if [ -f $i ]
       then
                echo -n " $i is a file .The number of lines in it: "
                wc -l $i | cut -d ' ' -f1

        fi

        if [ -d $i ]
        then
                echo " $i is a directory "
fi
done
```

```
linux@linux-Inspiron-3520:~/OS$ ./lab1_Q10.sh
There are 0 arguments
The arguments are
linux@linux-Inspiron-3520:~/OS$ ./lab1_Q10.sh amma
There are 1 arguments
The arguments are amma
linux@linux-Inspiron-3520:~/OS$ ./lab1_Q10.sh amma.odt
There are 1 arguments
The arguments are amma.odt
 amma.odt is a file .The number of lines in it: 662
linux@linux-Inspiron-3520:~/OS$
```

AUTHOR: Surya Seetharaman

Output Window:-