Pandit Deendayal Petroleum University
OPERATING SYSTEMS
SEMESTER – V (2019-2020)
Practical Assignment 1 – Shell Scripts

1. Display the following patterns.

a)
```
1
2 2
3 3 3
4 4 4 4
5 5 5 5 5
```

b)
```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5
```

c)
```
|_
|  |_
|  |  |_
|  |  |  |_
|  |  |  |  |_
```

d)
```
*
* *
* * *
* * * *
* * * * *
```

e)
```
*
*   *
*   *   *
*   *   *   *
*   *   *   *   *
*   *   *   *
*   *   *
*   *
*
```

f)
```
    1
    2   2
   3   3   3
 4   4   4   4
5   5   5   5   5
```

g)
```
      *
     *   *
    *   *   *
  *   *   *   *
*   *   *   *   *
  *   *   *   *
    *   *   *
      *   *
        *
```

2. Write a shell script to find the factorial of a given no.

3. Write a shell script to find the largest of three numbers and also find the total and average.

5. Write a shell script to find whether a given year (4 digits) is leap year or not.

6. Write a shell script to find the sum of first n numbers.

7. Write a shell script to check whether a given no. is prime or not.

8. Write a shell script to generate a multiplication table.

9. Write a command file that displays the following:

a) Calendar of the current month and year.
b) Current date in dd/mm/yy and time.
c) Display "Good Morning / Good Afternoon / Good Evening" according to the current login time.
d) User name, user's home directory.
e) Terminal name, terminal type.
f) Machine name.
g) No. of user currently logged in.

10. Write a shell script to find the sum of n numbers which are passed by command line argument.

11. Write a shell script to find the sum of digits of a number entered through command line argument and find whether sum is even or not.

12. Write a shell script to print all the values which are passed by command line argument in reverse way. If total values entered through command line argument are more than 5 print "Invalid number of arguments".

13. Write a shell script to check whether a given user is currently logged in or not.

14. Write a shell script to obtain the effect of COPY CON in DOS.

15. Write a script that constitutes a file by the last three lines of every file specified in the command line arguments.

16. Write a shell script to remove all the zero sized files from the current directory.

17. Combine Emp1 and Emp2 in file Emp3 horizontally and vertically.

18. Write a shell script to make the following file and management operations menu based:

a) Display the current directory.
b) List directory.
c) Make directory.
d) Change directory.
e) Copy of a file.
f) Rename a file.
g) Delete a file.
h) Edit a file.

19. Write a shell script to print contents of file from given line no. to next given line number.

20**.** Write a shell script to make the following operations menu based:

a) Addition
b) Subtraction
c) Multiplication
d) Division

21. Write a shell script to find a given date fall on a weekday or a weekend.

22. Write a shell script to change the suffix of all your *.txt files to .dat.

23. Write a shell script that takes two file names from command line and checks the permissions on both the files. If permissions are same, concatenate both the files in a third file, otherwise display a message “Both files have different permissions”

24. Write a shell script that accept two directory names as an argument and delete all the files from the second directory which have identical content in the first directory.

25. Write a shell script that read a file named 'student' which contains student data roll_no, name, marks_of_sub1, marks_of_sub2, marks_of_sub3 and generate a file named 'result' which contains roll_no, name, total_marks, average and grade.

26. Write a shell script called see taking a filename name as argument which ls's the file if it's a directory and more's the file otherwise.

27. Write a shell script to count and report the number of entries present in each sub-directory mentioned in the path which is supplied as command-line argument.

28. Write a shell script that reverse the order of lines in the file and replaces spaces with full stop.