BITS Pilani – Hyderabad Campus
Operating Systems (CS F372)

Shell Programming in bash

1. What is a shell program? What is the primary use?

2. Write a "Hello World" program in bash. How is a shell program run?

3. Write a bash shell program to compute the sum of 5 and 7

4. Modify the previous program to take the two numbers as input from the user using the `read` command.

5. Write a bash shell program to find if a number is even or odd. Use conditional constructs in bash

6. Write a bash program to print all files in the pwd. Use loop constructs in bash

7. Write a bash program to print the first 100 natural numbers in:
   a) forward order
   b) reverse order

8. Write a bash program to print all the command line arguments passed to the program

9. Write a C program which takes a positive integer *n* as a command line argument and prints Hello World *n* times. Write a wrapper bash program which takes *n* as an argument and uses it to call the binary of the C program with *n* as an argument.

10. **Exercise:** Write a C program which takes a positive integer as a command line argument and calculates the factorial of the integer and returns the factorial. Write a wrapper bash script which calls the C program with arguments from 1 to 25 in a loop and prints the result returned by the C program. Printing should be done from the bash script.

11. **Exercise:** Write a C program which takes two integers and a mathematical operator as command line arguments (e.g. 2 3 *) and returns the result. Write a bash script to call this C program with different arguments.