

Assignment 11: Programming bash

1. Read a number find if it is even or odd.
2. Write a shell program to check whether a given string is palindrome or not.
3. How would you delete a word from a file using shell scripting?
4. Use 'case' statement to perform math operations (+, -, /, *) as follows:

```
$ ./script 20 / 5
20 / 5 = 4
```
5. Write script to determine whether given file exists or not. File name is supplied as command line argument.
6. Write script called hello.sh. Put this script into your startup file called .bash_profile. The script should run as soon as you logon to system, and it print any one of the following message according to system time:
Good Morning/Good Afternoon/Good Evening, according to system time.
7. Write script to implement background process that will continually print current time in upper right corner of the screen, while user can do his/her normal job at prompt.
8. Write script to implement getopt statement, your script should understand following command line argument called this script.

```
$ ./script -c -d
```

Where options work as:
 - c clear the screen
 - d show list of files in current working directory
9. Using any of the VCF files to do the following operations using functions within in shell script:
 - a. Find the number of gid columns in the VCF file.
 - b. Retain only those lines (plus the header) that have mutations in the given range with file name, minimum and maximum values supplied through the command line as shown below:

```
$ ./filter_mut_range.sh ../data/sample_big.vcf 10 20
```
 - c. Retain only those lines (plus the header) where the REF filed has only any one of the allowed characters (ie., A/C/G/T).
 - d. Retain only those lines (plus the header) where the ALT filed has only the allowed characters (ie., A/C/G/T).
 - e. Merge all the above (a-d) functionalities to produce C1 equivalent output.
 - f. Identify the line with highest mutation rate within the above filtered lines.