

SYSTEM PROGRAMMING ASSIGNMENT QUESTIONS

Note:

- The cover page should contain Name: Section: WASEID: Batch No:
- Specify the question numbers properly as in the question sheet.
- the last date for submission of assignment is strictly: 25th February 2021.

SET-1

TO BE ATTEMPTED BY ALL ODD NUMBER BITS-ID STUDENTS

NOTE: THE ASSIGNMENT SHOULD BE SUBMITTED IN SOFTCOPY ONLY (WITH OUTPUT SCREENSHOTS IF NEEDED) WITH YOUR BITS-ID AS YOUR FILENAME

1. Write a menu driven shell script which accepts a number N and an option to calculate the average of:

- (a) first 'N' odd numbers
- (b) first 'N' even numbers

Hint: Solve the above question using loops

2. Following is the first four records in a file "data.txt".

```
71723 Ram Sen 70 72 75
91924 Raghubir Yadav 82 73 80
53425 Ram Chauhan 93 81 86
44917 Ratan Yadav 95 79 91
```

Each record contains ID (5 chars), 1 space, First name (10 chars), 1 space, Second name (8 chars), 1space, marks in physics (3 chars), 1space, marks in chemistry (3 chars), 1space, marks in mathematics(3 chars) and a newline character.

Write a shell program info.sh to achieve the following

- i) If the program is run without any argument (sh info.sh), it will display the first name, second name and average score of each student in the file.
- ii) If the program is run with numeric argument (sh info.sh 44917), it will assume it as ID of student and output ID, first name, second name and the average score of that student. If ID does not match, the program should display "record not found".
- iii) If the program is run with non-numeric argument (sh info.sh yadav), it will assume it as either first or second name and output the ID's of all the students whose first or last name matches with the argument (irrespective of case)
- iv) If the number of arguments is greater than one, the program should display an error message.

3. Write a shell script to

- (a) count the number of .doc, .txt, .c files in current working directory

(b) convert all the files with extension .c to .doc.

4. Consider a database which contains following fields: Roll number, name, semester and marks in mathematics. Write a menu driven shell script for

- (a) adding a record
- (b) deletion of a record corresponding to a roll number
- (c) finding a record in a database corresponding to a roll number or ID Number
- (d) exit

The shell script should accept a choice from the user and execute the corresponding option until exit option is chosen.

5. Write a shell script to accept 2 matrices [2x2] and perform the following based on the menu option given.

- (a) addition
- (b) subtraction
- (c) multiplication
- (d) transpose
- (e) exit

SET-2

TO BE ATTEMPTED BY ALL EVEN NUMBER BITS-ID STUDENTS

NOTE: THE ASSIGNMENT SHOULD BE SUBMITTED IN SOFTCOPY ONLY (WITH OUTPUT SCREENSHOTS IF NEEDED) WITH YOUR BITS-ID AS YOUR FILENAME

1. Write a Unix shell script which accepts a string and a choice from the user and execute the corresponding option

- a) length of the string
- b) number words in a string
- c) convert all the character in a string to upper case
- d) convert all the character in a string to lower case
- e) convert all the character in a string to title case
- f) to check whether the given string is palindrome or not
- g) exit

2. Write a menu driven shell script to list all the files of the current directory having read, write permission and read write permission to the user.

- a. Read permission
- b. Write permission
- c. Read and write permission
- d. exit

3. Write a menu driven program to calculate area of any geometrical figure. Menu should be as follows:

- (a) Triangle
- (b) Square
- (c) Rectangle
- (d) Circle
- (e) Exit

Hint: Take the menu option and sides from the user. Solve the above question using loops and case statement.

4. Write a shell script to accept either file name or directory name as command line argument. If it is file then it should display the contents of the file and if it is a directory then it should display the list. Error should be displayed in case the name is neither file nor a directory.

5. Write a menu driven Shell Script which prints the following

- (a) Home directory.
- (b) Present working directory
- (c) Current user name.
- (d) Current date. (Should display the message "Today is :" with current date in M/dd/yy format)
- (e) Number of users logged in: (Should display the message "No of users logged in :" with total no of current logged in users)
- (f) Exit