Course **:** CSA09 Programming in Java
Date **:** 26.09.2022

1. **Write a program to reverse a word using loop? (Not to use inbuilt functions)**
   Sample Input:
   String: TEMPLE
   Sample Output:
   Reverse String: ELPMET
Test cases:
   1. SIGN UP
   2. AT-LEAST
   3. 1245
   4. !@#$%
   5. 145*999=144855

2. **Write a program to check the entered user name is valid or not. Get both the inputs from the user.**
   Sample Input:
   Enter the user name: Saveetha@789
   Reenter the user name: Saveetha@123
   Sample Output:
   User name is Invalid

3. **Write a program to find whether the person is eligible for vote or not. And if that particular person is not eligible, then print how many years are left to be eligible.**
   Sample Input:
   Enter your age: 7
   Sample output:
   You are allowed to vote after 11 years
   Test cases:
   1. 25
   2. Eighteen
   3. 12
   4. -18
   5. 34.5

4. **Write a program to print Right Triangle Star Pattern**
Sample Input: n = 5
   Output:
```
    *
   * *
  * * *
  * * * *
```

5. **Write a program for matrix addition?**
   Sample Input:
   Mat1 = 1 2
         5 3
   Mat2 = 2 3
          4 1
   Sample Output:
   Mat Sum = 3   5
             7   4

6. **Write a program using function to calculate the simple interest. Suppose the customer is a senior citizen. He is being offered 12 percent rate of interest; for all other customers, the ROI is 10 percent.**
Sample Input:
   Enter the principal amount: 200000
   Enter the no of years: 3
   Is customer senior citizen (y/n): n
Sample Output:
   Interest: 60000
Test Cases:
   1. Principal: 2000 , Years: 0
   2. Principal: 20000 , Years: -2
   3. Principal: -2000 , Years: 2
   4. Principal: 2 , Years: 2000
   5. Principal: 0 , Years: 5

7. **Find the Mth maximum number and N^{th} minimum number in an array and then find the sum of it and difference of it.**
   Sample Input:
   Array of elements = {14, 16, 87, 36, 25, 89, 34}
   M = 1
   N = 3
   Sample Output:
   1^{st}Maximum Number = 89
   3^{rd}Minimum Number = 25
   Sum = 114
   Difference = 64
Test cases:
   1. {16, 16, 16 16, 16}, M = 0, N = 1
   2. {0, 0, 0, 0}, M = 1, N = 2
   3. {-12, -78, -35, -42, -85}, M = 3 , N = 3
   4. {15, 19, 34, 56, 12}, M = 6 , N = 3
   5. {85, 45, 65, 75, 95}, M = 5 , N = 7

8. **Write a program using choice to check**
   Case 1: Given string is palindrome or not
   Case 2: Given number is palindrome or not

Sample Input:
   Case = 1
   String = MADAM

Sample Output:
   Palindrome

Test cases:
 1. MONEY
 2. 5678765
 3. MALAY12321ALAM
 4. MALAYALAM
 5. 1234.4321

9. **Write a program to convert Decimal number equivalent to Binary number and octal numbers?**

Sample Input:
   Decimal Number: 15

Sample Output:
   Binary Number = 1111
   Octal = 17

Test cases:
   1. 111
   2. 15.2
   3. 1010.011
   4. B12
   5. 1A.2

10. **In an organization they decide to give bonus to all the employees on New Year. A 5% bonus on salary is given to the grade a workers and 10% bonus on salary to the grade B workers. Write a program to enter the salary and grade of the employee. If the salary of the employee is less than $10,000 then the employee gets an extra 2% bonus on salary Calculate the bonus that has to be given to the employee and print the salary that the employee will get.**

Sample Input & Output:
   Enter the grade of the employee: B
   Enter the employee salary: 50000
   Salary=50000
   Bonus=5000.0
   Total to be paid: 55000.0

Test cases:
   1. Enter the grade of the employee: A
      Enter the employee salary: 8000
   2. Enter the grade of the employee: C
      Enter the employee salary: 60000
   3. Enter the grade of the employee: B

Enter the employee salary: 0
4. Enter the grade of the employee: 38000
   Enter the employee salary: A
5. Enter the grade of the employee: B
   Enter the employee salary: -8000

11. Write a Java Program to Convert a Given Number of Days in Terms of Years, Weeks & Days.

Sample Input & Output:
Enter the number of days: 756
No. of years: 2
No. of weeks: 3
No. of days: 5

Test cases:
1. 38
2. 3.6
3. 0
4. -365
5. -45

Given a date, return the corresponding day of the week for that date. The input is given as three integers representing the day, month and year respectively. Return the answer as one of the following values {"Sunday", "Monday", "Tuesday", "Wednesday", "Thursday", "Friday", "Saturday"}.

Example 1:
Input: day = 31, month = 8, year = 2019
Output: "Saturday"
Example 2:
Input: day = 18, month = 7, year = 1999
Output: "Sunday"
Example 3:
Input: day = 15, month = 8, year = 1993
Output: "Sunday"

12. Write a program to find the number of student users in the college, get the total users, staff users (15:1) details from the client. Note for every staff user (3:1) there is one Non-teaching staff user assigned by default.

Sample Input:
Total Users: 856
Staff Users: 126

Sample Output:
Student Users: 688

Test Cases:
1. Total User: 0
2. Total User: -143
3. Total User: 1026, Staff User: 1026
4. Total User: 450, Staff User: 540
5. Total User: 600, Staff User: 450

SAVEETHA SCHOOL OF ENGINEERING
SAVEETHA INSTITUTE OF MEDICAL AND TECHNICAL SCIENCES
Institute of Computer Science and Engineering
DEPARTMENT of Big Data and Network Security

Course Code :   **Course Name** :
Branch : B.Tech CSE/IT/AI&DS   **Academic Year** : 2022-2023
Date :   **Time** : 8.00 a.m to 3.00 p.m
Register No :   **Student Name** :

ExP.No.	FOVP					OPV	POPV	EP	NOP	TOTAL	Faculty Signature
	T1	T2	T3	T4	T5	5	3	2	0	10	
1.											
2.											
3.											
4.											
5.											
6.											
7.											
8.											
9.											
10.											
11.											
12.											

Signature of Student   **Faculty Signature**

Remarks