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
6. Write a program to calculate Pow(x,n), Add(x,n), Sub(x,n), Mul(x,n), Div(x,n)? Get the input and choice from the user.

Sample Input:

X = 2

N = 4

Choice : 2

Sample Output:

Add(X,N) = 6

Test cases:

1. X = 0 , N = 4
2. X = 5 , N = 0
3. X = -3 , N = 3
4. X = 0 , N = 0
5. X = 123, N = 123

3. Write a program to count all the prime and composite numbers entered by the user.

Sample Input:

Enter the numbers

4

54

29

71

7

59

98

23

Sample Output:

Composite number:3

Prime number:5

Test cases:

1. 33, 41, 52, 61,73,90
2. TEN, FIFTY, SIXTY-ONE, SEVENTY-SEVEN, NINE
3. 45, 87, 09, 5.0 ,2.3, 0.4
4. -54, -76, -97, -23, -33, -98
5. 45, 73, 00, 50, 67, 44

4. Find the Mth maximum number and Nth 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:

1st Maximum Number = 89

3rd 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

5.Write a program to print the total amount available in the ATM machine with the conditions applied.

Total denominations are 2000, 500, 200, 100, get the denomination priority from the user and the total number of notes from the user to display the total available balance to the user

Sample Input:

Enter the 1st Denomination: 500

Enter the 1st Denomination number of notes: 4

Enter the 2nd Denomination: 100

Enter the 2nd Denomination number of notes: 20

Enter the 3rd Denomination: 200

Enter the 3rd Denomination number of notes: 32

Enter the 4th Denomination: 2000

Enter the 4th Denomination number of notes: 1

Sample Output:

Total Available Balance in ATM: 12400

Test Cases:

1. Hidden Test cases (Think Accordingly based on Denominations)
2. Write a program to print the following pattern.

1

12

123

1234

12345

1. Write a program to print hollow Square Dollar pattern?

8. Write a program to calculate tax given the following conditions:

* 1. If income is less than or equal to 1,50,000 then no tax
  2. If taxable income is 1,50,001 – 3,00,000 the charge 10% tax
  3. If taxable income is 3,00,001 – 5,00,000 the charge 20% tax
  4. If taxable income is above 5,00,001 then charge 30% tax

Sample Input:

Enter the income:200000

Sample Output:

Tax= 20000

Test cases:

1. 400700
2. 2789239
3. 150000
4. 00000
5. -125486

9. Program to remove duplicates from the sorted array

Sample Input:

Array = {15, 14, 25, 14, 32, 14, 31}

Sample Output:

Sorted Array = {14, 15, 25, 31, 32}

Test cases:

1. {16, 16, 16 16, 16}
2. {0, 0, 0, 0}
3. {-12, -78, -35, -42}
4. {1,2,3,7,8,9,4,5,6}
5. {1-2,2-3,3-4,4-5,5-6}

10. Python Program to create a list of all numbers in a range which are perfect squares and the sum of the digits of the number is less than 10.

Sample Input & Output:

Enter lower range: 1

Enter upper range: 40

[1, 4, 9, 16, 25, 36]

Test case:

1. Enter lower range: 50

Enter upper range: 100

1. Enter lower range: 5

Enter upper range: 8

1. Enter lower range: 10

Enter upper range: 5

1. Enter lower range: 500

Enter upper range: 500

1. Enter lower range: 0

Enter upper range: -100

11. Write a program to print the number of vowels in the given statement?

Sample Input:

Saveetha School of Engineering

Sample Output:

Number of vowels = 12

Test cases:

1. India is my country
2. All are my brothers and sisters
3. Why dry sky
4. Shy Try Cry
5. EDUCATION

12. Write a program to print unique permutations of a given number

Sample Input:

Given Number: 143

Sample Output:

Permutations are:

134

143

314

341

413

431

Test cases:

1. 0
2. 111
3. 505
4. -143
5. -598

13. Python Program to Create a List of Tuples with the First Element as the Number and Second Element as the Square of the Number.

Sample Input:

Enter the lower range:45

Enter the upper range:49

Sample Output:

[(45, 2025), (46, 2116), (47, 2209), (48, 2304), (49, 2401)]

Test case:

1. Enter lower range: 50

Enter upper range: 100

1. Enter lower range: 5

Enter upper range: 8

1. Enter lower range: 10

Enter upper range: 5

1. Enter lower range: 500

Enter upper range: 500

1. Enter lower range: 0

Enter upper range: -100

14.Python Program to Generate Random Numbers from A to B and Append Them to the List

Sample Input & Output:

Enter A Value: 20

Enter B Value:50

Enter number of elements:5

Sample Input & Output:

Randomized list is: [41, 39, 43, 24, 42]

Test Case:

1. A = 10, B = 0, Number of elements = 3
2. A = 100, B = 200, Number of elements = 30
3. A = 30, B = 270, Number of elements = 300
4. A = 0, B = 0, Number of elements = 5
5. A = -420, B = 420, Number of elements = -45

15. Python Program to Remove the Duplicate Items from a List

Sample Input:

Enter the number of elements in list:7

Enter element1:10

Enter element2:20

Enter element3:20

Enter element4:30

Enter element5:40

Enter element6:40

Enter element7:50

Sample Output:

Non-duplicate items:

[10, 20, 30, 40, 50]

16. Find the maximum of three binary values using looping

Sample Input:

Given Numbers: 1101, 1011, 1001

Sample Output:

Maximum Number: 1101

17.Write a program to check if a given year is leap year or not. If it is leap year then print the next leap year, if it is non leap year then print the previous leap year.

Sample Input:

Enter Date : 1947

Sample Output:

Given year is Non Leap Year

Leap Year: 1944

Test cases:

1. 19.47
2. 1936
3. 0
4. 2000
5. -1428

18. Write a program that accepts a string from user and re displays the same string after removing vowels from it.

Sample Input & Output:

Enter a string: we can play the game

The string without vowels is: w cn ply th gm

19. Write a program to find the sum of digits of N digit number (sum should be single digit)

Sample Input:

Enter N value : 3

Enter 3 digit number: 143

Sample Output:

Sum of 3 digit number: 8

Test cases:

1. N = 2, 158
2. N = 3, 14
3. N = 4, 0148
4. N = 1, 0004
5. N = 4, 7263

20. Write a program to arrange the letters of the word alphabetically in reverse order

Sample Input:

Enter the word : MOSQUE

Sample Output:

Alphabetical Order: U S Q O M E

Test Case:

1. HYPOTHECATION
2. MATRICULATION
3. MANIPULATION
4. SATISFACTION
5. DEDICATION

21. Find the LCM and GCD of n numbers?

Sample Input:

N value = 2

Number 1 = 16

Number 2 = 20

Sample Output:

LCM = 80

GCD = 4

Test cases:

1. N = 3, {12, 25, 30}
2. N = 2, {52, 25, 63}
3. N = 3, {17, 19, 11}
4. N = -2, {52, 60}
5. N = 2, {30, 45}

22.Write a program to print numbers from P to Q but except the digit R?

Sample Input:

P = 60

Q = 70

R = 3

Sample Output:

Numbers are = 60, 61, 62, 64, 65, 66, 67, 68, 69, 70

Test cases:

1. P = 200, Q = 200, R = 5
2. P = 100, Q = 200, R = 0
3. P = -100, Q = 100, R = 5
4. P = 1073, Q = 1075, R = 4
5. P = 444, Q = 499, R = 4

23.Write a program to read a character until a **\*** is encountered. Also count the number of uppercase, lowercase, and numbers entered by the users.

Sample Input:

Enter \* to exit…

Enter any character: W

Enter any character: d

Enter any character: A

Enter any character: G

Enter any character: g

Enter any character: H

Enter any character: \*

Sample Output:

Total count of lower case:2

Total count of upper case:4

Total count of numbers =0

Test cases:

1. 1,7,6,9,5
2. S, Q, l, K,7, j, M
3. M, j, L, &, @, G
4. D, K, I, 6, L, \*
5. \*, K, A, e, 1, 8, %, \*

24. 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

25. Write a program to find the number of student users in the college, get the total users, staff users details from the client. Note for every 3 staff user 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