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INSTITUTE OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
DEPRATMENT OF DATA SCIENCE



Course code/Name: CSA08/ Python Programming

1. Write a python program that would sort a list of names in alphabetical order Ascending or Descending, choice get from the user?

Sample Input:

Banana

Carrot

Radish

Apple

Jack

Order(A/D) : A

Sample Output:

Apple

Banana

Carrot

Jack

Radish

Test cases:

1. Zeebra, Abc, bank, apple, fruit
2. Quick, Brown, fox, lazy, dog
3. python, Python, program
4. red,yellow,green, blue, white
5. toys, car, bike, truck, Doll

2. Write a python program to print the number of vowels in the given string?

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

3. Write a python program to find the square, cube of the given decimal number

Sample Input:

Given Number: 0.6

Sample Output:

Square Number: 0.36

Cube Number:0.216

Test cases:

1. 12
2. 0
3. -0.5
4. 14.25
5. -296

4. Write a python 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

5. Write a python 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 python program to print the pattern

Enter the number of rows:4

0.1			
0.1	0.2		
0.1	0.2	0.3	
0.1	0.2	0.3	0.4

Test cases:

- 1) 0
- 2) -1
- 3) 4.5
- 4) 6
- 5) 5

7. How Many Numbers Are Smaller Than the Current Number. Given the list nums, for each nums[i] find out how many numbers in the list are smaller than it. That is, for each nums[i] you have to count the number of valid j's such that j != i and nums[j] < nums[i]. Return the answer in an list.

Test Cases:

1. Input: nums = [8,1,2,2,3]

Output: [4,0,1,1,3]

Explanation:

For nums[0]=8 there exist four smaller numbers than it (1, 2, 2 and 3).

For nums[1]=1 does not exist any smaller number than it.

For nums[2]=2 there exist one smaller number than it (1).

For nums[3]=2 there exist one smaller number than it (1).

For nums[4]=3 there exist three smaller numbers than it (1, 2 and 2).

2. Input: nums = [6,5,4,8]

Output: [2,1,0,3]

3. Input: nums = [7,7,7,7]

Output: [0,0,0,0]

4. nums=[1,2,3,5,5,6]

5. nums=[0,0,0,0]

8. Write a python program to find the Mean, Median, Mode of the list of elements?

Sample Input,:

List of elements = [16, 18, 27, 16, 23, 21, 19]

Sample Output:

Mean = 20

Median = 19

Mode = 16

Test cases:

1. List of elements = [26, 28, 37, 26, 33, 31, 29]

2. List of elements = [1.6, 1.8, 2.7, 1.6, 2.3, 2.1, .19]

3. List of elements = [0, 160, 180, 270, 160, 230, 210, 190, 0]

4. List of elements = [200, 180, 180, 270, 160, 270, 270, 190, 200]

5. List of elements = [100, 100, 100, 100, 100, 100, 100, 100, 100]

9. Write a python program to print consonants and vowels separately in the given string

Sample Input:

Given Word: Engineering

Sample Output:

Consonants: n g n r n g

Vowels: e i e ei

Test cases:

1. TRY

2. MEDIAN

3. ONE

4. KNOWLEDGE

5. EDUCATION

10. Write a python program to reverse a number using loop?(Get the input from user)

Sample Input:

Number: 14567

Sample Output:

Reverse Number: 76541

Test cases:

1. -45721

2. 000

3. AD1947

4. !@#\$%

5. 145*999=144855