

Rajalakshmi Engineering College

Name: Vaishnavi Thiruvengadam
Email: 240701577@rajalakshmi.edu.in
Roll no: 240701577
Phone: 9176000180
Branch: REC
Department: I CSE FF
Batch: 2028
Degree: B.E - CSE

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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 4_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 40

Section 1 : Coding

1. Problem Statement

Implement a program for a retail store that needs to find the highest even price in a list of product prices. Your goal is to efficiently determine the maximum even price from a series of product prices. Utilize the max() inbuilt function in the program.

For example, if the prices are 10 15 24 8 37 16, the even prices are 10 24 8 16. So, the maximum even price is 24.

Input Format

The input consists of a series of product prices separated by a space.

The prices should be entered as a space-separated string of numbers.

Output Format

If there are even prices in the input, the output prints "The maximum even price is: " followed by the maximum even price.

If there are no even prices in the input, the output prints "No even prices were found".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 10 15 24 8 37 16

Output: The maximum even price is: 24

Answer

```
a=input()
b=a.split()
c=list()
for i in b:
    if int(i)%2==0:
        c.append(int(i))
if(len(c)==0):
    print("No even prices were found")
else:
    print("The maximum even price is:",max(c))
```

Status : Correct

Marks : 10/10

2. Problem Statement

Amrita is developing a password strength checker for her website. She wants the checker to consider the length and the diversity of characters used in the password. A strong password should be long and include a mix of character types: uppercase, lowercase, digits, and special symbols.

She also wants the feedback to be user-friendly, so she wants to include the actual password in the output. Help Amrita finish this password checker using Python's built-in string methods.

Character Types Considered:

Lowercase letters (a-z) Uppercase letters (A-Z) Digits (0-9) Special characters (from string.punctuation, e.g. @, !, #, \$)

Input Format

The input consists of a single string representing the user's password.

Output Format

The program prints the strength of the password in this format:

If the password length < 6 characters or fewer than 2 of the 4 character types, the output prints "<password> is Weak"

If password length ≥ 6 and at least 2 different character types, the output prints "<password> is Moderate"

If Password length ≥ 10 and all 4 character types present, the output prints "<password> is Strong"

Refer to the sample output for formatting specifications.

Sample Test Case

Input: password123

Output: password123 is Moderate

Answer

```
password = input()
def check(password):
    lower = False
    upper = False
    digit = False
    special = False
    for ch in password:
        if ch.islower():
            lower = True
        elif ch.isupper():
            upper = True
```

```
elif ch.isdigit():
    digit = True
else:
    special = True
if len(password) >= 10 and lower and upper and digit and special:
    strength = "Strong"
elif (lower or upper) and digit:
    strength = "Moderate"
else:
    strength = "Weak"
print(f"{password} is {strength}")
check(password)
```

Status : Correct

Marks : 10/10

3. Problem Statement

Imagine you are tasked with developing a function for calculating the total cost of an item after applying a sales tax. The sales tax rate is equal to 0.08 and it is defined as a global variable.

The function should accept the cost of the item as a parameter, calculate the tax amount, and return the total cost.

Additionally, the program should display the item cost, sales tax rate, and total cost to the user.

Function Signature: `total_cost(item_cost)`

Input Format

The input consists of a single line containing a positive floating-point number representing the cost of the item.

Output Format

The output consists of three lines:

"Item Cost:" followed by the cost of the item formatted to two decimal places.

"Sales Tax Rate:" followed by the sales tax rate in percentage.

"Total Cost:" followed by the calculated total cost after applying the sales tax, formatted to two decimal places.

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 50.00

Output: Item Cost: \$50.00

Sales Tax Rate: 8.0%

Total Cost: \$54.00

Answer

#

```
SALES_TAX_RATE=0.08
```

```
def total_cost(item_cost):
```

```
    tax_amount=item_cost*SALES_TAX_RATE
```

```
    total_cost= item_cost + tax_amount
```

```
    return total_cost
```

```
item_cost=float(input())
```

```
total_cost = total_cost(item_cost)
```

```
print(f"Item Cost: ${item_cost:.2f}")
```

```
print(f"Sales Tax Rate: {SALES_TAX_RATE * 100}%")
```

```
print(f"Total Cost: ${total_cost:.2f}")
```

Status : Correct

Marks : 10/10

4. Problem Statement

Arjun is working on a mathematical tool to manipulate lists of numbers. He needs a program that reads a list of integers and generates two lists: one containing the squares of the input numbers, and another containing the cubes. Arjun wants to use lambda functions for both tasks.

Write a program that computes the square and cube of each number in the input list using lambda functions.

Input Format

The input consists of a single line of space-separated integers representing the list of input numbers.

Output Format

The first line contains a list of the squared values of the input numbers.

The second line contains a list of the cubed values of the input numbers.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 1 2 3

Output: [1, 4, 9]

[1, 8, 27]

Answer

```
numbers=list(map(int,input().split()))
squares=list(map(lambda x : x**2,numbers))
cubes=list(map(lambda x : x**3,numbers))
print(squares)
print(cubes)
```

Status : Correct

Marks : 10/10