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NeoColab_REC_CS23221_Python Programming

REC_Python_Week 6_CY

Attempt : 1
Total Mark : 40
Marks Obtained : 40

Section 1 : Coding

1. Problem Statement

Alice is developing a program called "Name Sorter" that helps users organize and sort names alphabetically.

The program takes names as input from the user, saves them in a file, and then displays the names in sorted order.

File Name: sorted_names.txt.

Input Format

The input consists of multiple lines, each containing a name represented as a string.

To end the input and proceed with sorting, the user can enter 'q'.

Output Format

The output displays the names in alphabetical order, each name on a new line.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: Alice Smith
John Doe
Emma Johnson
q
Output: Alice Smith
Emma Johnson
John Doe

Answer

```
filename = "sorted_names.txt"
names = []

while True:
    name = input()
    if name == 'q':
        break
    names.append(name)

with open(filename, "w") as file:
    for name in names:
        file.write(name + "\n")

names.sort()

for name in names:
    print(name)
```

Status : Correct ***Marks : 10/10***

2. Problem Statement

Implement a program that checks whether a set of three input values can form the sides of a valid triangle. The program defines a function is_valid_triangle that takes three side lengths as arguments and raises a ValueError if any side length is not a positive value. It then checks whether the sum of any two sides is greater than the third side to determine the validity of the triangle.

Input Format

The first line of input consists of an integer A, representing side1.

The second line of input consists of an integer B, representing side2.

The third line of input consists of an integer C, representing side3.

Output Format

The output prints either "It's a valid triangle" if the input side lengths form a valid triangle,

or "It's not a valid triangle" if they do not.

If there is a ValueError, it should print "ValueError: <error_message>".

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 3
4
5
Output: It's a valid triangle

Answer

```
def is_valid_triangle(a, b, c):
    if a <= 0 or b <= 0 or c <= 0:
        raise ValueError("Side lengths must be positive")
    if (a + b > c) and (b + c > a) and (c + a > b):
        return True
    else:
```

```
    return False

try:
    side1 = int(input())
    side2 = int(input())
    side3 = int(input())

    if is_valid_triangle(side1, side2, side3):
        print("It's a valid triangle")
    else:
        print("It's not a valid triangle")

except ValueError as ve:
    print(f"ValueError: {ve}")
```

Status : Correct **Marks : 10/10**

3. Problem Statement

A shopkeeper is recording the daily sales of an item for N days, where the price of the item remains the same for all days. Write a program to calculate the total sales for each day and save them in a file named sales.txt that can store the data for a maximum of 30 days. Then, read the file and display the total earnings for each day.

Note: Total Earnings for each day = Number of Items sold in that day × Price of the item.

Input Format

The first line of input consists of an integer N, representing the number of days.

The second line of input consists of N space-separated integers representing the number of items sold each day.

The third line of input consists of an integer M, representing the price of the item that is common for all N days.

Output Format

If the number of days entered exceeds 30 (N > 30), the output prints "Exceeding

limit!" and terminates.

Otherwise, the code reads the contents of the file and displays the total earnings for each day on separate lines.

Contents of the file: The total earnings for N days, with each day's earnings appearing on a separate line.

Refer to the sample output for the formatting specifications.

Sample Test Case

Input: 4
5 10 5 0
20

Output: 100
200
100
0

Answer

```
N = int(input())
if N > 30:
    print("Exceeding limit!")
else:
    items_sold = list(map(int, input().split()))
    M = int(input())

    with open("sales.txt", "w") as f:
        for i in range(N):
            total_earning = items_sold[i] * M
            f.write(str(total_earning) + "\n")

    with open("sales.txt", "r") as f:
        for line in f:
            print(line.strip())
```

Status : Correct ***Marks : 10/10***

4. Problem Statement

Write a program to obtain the start time and end time for the stage event show. If the user enters a different format other than specified, an exception occurs and the program is interrupted. To avoid that, handle the exception and prompt the user to enter the right format as specified.

Start time and end time should be in the format 'YYYY-MM-DD HH:MM:SS'If the input is in the above format, print the start time and end time.If the input does not follow the above format, print "Event time is not in the format "

Input Format

The first line of input consists of the start time of the event.

The second line of the input consists of the end time of the event.

Output Format

If the input is in the given format, print the start time and end time.

If the input does not follow the given format, print "Event time is not in the format".

Refer to the sample output for formatting specifications.

Sample Test Case

Input: 2022-01-12 06:10:00
2022-02-12 10:10:12

Output: 2022-01-12 06:10:00
2022-02-12 10:10:12

Answer

```
from datetime import datetime

start_time = input()
```

```
end_time = input()

try:
    datetime.strptime(start_time, "%Y-%m-%d %H:%M:%S")
    datetime.strptime(end_time, "%Y-%m-%d %H:%M:%S")
    print(start_time)
    print(end_time)
except ValueError:
    print("Event time is not in the format")
```

Status : Correct ***Marks : 10/10***