

## DS Assignment

24BEECE05

1. Lets start with a simple problem - you need to write a program which does the following

- Accepts the number of inputs / test cases as 't'
- o The only line of each test case contains 2 integers - declare them as variables A and B
- For each test case, you need to perform the following operations
- o Create a variable - S - the sum of the 2 input integers
- o Create a variable - P - the product of the 2 input integers
- o Output 2 space separated integers - S and P in a single line

### Program

```
t = int(input("Enter the number of test cases:
"))
for i in range(t):
    print("\nTest case", i + 1)
    inputs = input("Enter a,b: ").split(",")

    A, B = int(inputs[0]), int(inputs[1])
    A, B = 1, 2
    S = A + B
    P = A * B
    print(S, P)
```

### Output

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS COMMENTS
● PS D:\Adnan\Computer Science\Data Science\Assignments> python 01.py
Enter the number of test cases: 2

Test case 1
Enter a,b: 1,2
3 2

Test case 2
Enter a,b: 3,4
3 2
❖ PS D:\Adnan\Computer Science\Data Science\Assignments> |
```

2. You are given 2 integers: A and C.

You need to find if there exists any integer B which meets the following condition

- B must be an integer
- B is the average of A and C.

For each test case, output B. If no such integer exists, output -1.

**Program**

```
t = int(input("Enter no. of test cases: "))

for i in range(t):
    inputs = input("Enter A,C: ").split(",")
    A, C = int(inputs[0]), int(inputs[1])
    B = -1
    for j in range(min(A, C), max(A, C) + 1):
        if j == (A + C) / 2:
```

```
B = j
break
print(B)
```

### Output

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  COMMENTS

PS D:\Adnan\Computer Science\Data Science\Assignments> python 02.py
Enter no. of test cases: 2
Enter A,C: 1,4
-1
Enter A,C: 1,5
3
❖ PS D:\Adnan\Computer Science\Data Science\Assignments> |
```

3. You are given a string S consisting of only lowercase English characters.

You need to generate 2 separate strings A and B

- String A needs to be an exact replica of string S - it has to be created by starting with an empty string
- String B is reverse of string S.

Input Format

- The first line will contain t - the number of test cases. Then the test cases follow
- Each line of the test case consists of a single line of input - the string S

Output Format

- Each test case will contain 2 lines of output
  - o Line 1: Output string A
  - o Line 2: Output string B

**Program**

```
t = int(input("Enter no. of test cases: "))

for i in range(t):
    print("\nTest Case ", i + 1)
    S = input("Enter a string: ")
    if not S.islower():
        print("Invalid Input")
        continue
    A = "" + S
    B = S[::-1]
    print(A)
    print(B)
```

**Output**

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

COMMENTS

```
● PS D:\Adnan\Computer Science\Data Science\Assignments> python 03.py  
Enter no. of test cases: 3
```

```
Test Case 1
```

```
Enter a string: adnan
```

```
adnan
```

```
nanda
```

```
Test Case 2
```

```
Enter a string: Mukesh
```

```
Invalid Input
```

```
Test Case 3
```

```
Enter a string: hello
```

```
hello
```

```
olleh
```

```
❖ PS D:\Adnan\Computer Science\Data Science\Assignments> 
```