

Assignment # 2

[Find errors and complete the steps]

Name Formatter and Length Calculator

1. Input your first name and last name

```
first_name = input("")  
last_name = input("")
```

2. Convert first name to uppercase and last name to lowercase

```
first_name = ""  
last_name = ""
```

3. Calculate and print the sum of the letters

```
total_letters = len() + len()
```

4. Print the first name in uppercase, last name in lowercase, and the total letters

```
print(f"First name (upper): {first_name}")  
print(f"Last name (lower): {last_name}")  
print("Sum of letters in your first and last name:", total_letters)
```

[Example Output]

```
Enter your first name: umair  
Enter your last name: KHAN  
  
First name (upper): UMAIR  
Last name (lower): khan  
Sum of letters in your first and last name: 9
```

Simple Area Calculator for various shapes

1. Input Shape Choice from User

```
print("Calculate the area of following shapes:")
print("1. Circle")
print("2. Rectangle")
print("3. Square")
print("4. Triangle")
shape = input("Find the area of Circle: ")
```

2. Circle area calculation

```
radius = input("Enter the radius of the circle: ")
area = # Formula for area of circle:  $\pi * r^2$ 
print("Find the area of Rectangle: \n")
```

3. Rectangle area calculation

```
length = float(input(""))
width = input("")
area = # Formula for area of rectangle: length * width
print("Find the area of Square: \n")
```

4. Square area calculation

```
side = float("")
area = # Formula for area of square:  $side^2$ 
print("Find the area of Trianlge: \n")
```

5. Triangle area calculation

```
base = input("")
height = float()
area = # Formula for area of triangle:  $0.5 * base * height$ 
print("All the areas are: \n")
```

6. Print all areas

```
print("The area of the circle is:", area, "\n")
print("The area of the rectangle is:", "\n")
print("The area of the square is:", area, "\n")
print("The area of the triangle is:", area, "\n")
```

[Example Output]

```
Calculate the area of following shapes:
```

1. Circle
2. Rectangle
3. Square
4. Triangle

```
Find the area of Circle
```

```
Enter the radius of the circle: 5
```

```
Find the area of rectangle
```

```
Enter the length of the rectangle: 4
```

```
Enter the width of the rectangle: 3
```

```
Find the area of square
```

```
Enter the side length of the square: 6
```

```
Find the area of traingle
```

```
Enter the base of the triangle: 8 Enter the height of the triangle: 5
```

Random Color-Based Password Generator in Python

1. Importing the random module

```
# The random module is imported to use the randint function. This  
allows the program to generate random numbers, which are needed to  
randomly select a color from the list.
```

```
import random
```

2. Defining the list of colors

```
# A list named colors is created, which contains six string elements.  
Each element is a color name: "red", "blue", "green", "yellow",  
"orange", and "purple".
```

```
# This list will be used to select a random color
```

```
colors = ["red", "blue", "green", "yellow", "orange", "purple"]
```

3. Generating a random index

```
# The randint function generates a random integer between 0 and
len(colors) - 1.
    # len(colors) calculates the total number of elements in the
colors list, which is 6 in this case.
    # Subtracting 1 ensures the indices range from 0 to 5 (since list
indices in Python start at 0).
# For example, if random.randint returns 3, the selected index will be
3.

index = random.randint(0, len(colors) - 1)
```

4. Selecting the color

```
The selected_color variable stores the color at the randomly selected
index in the colors list.
# For example:
# If index = 0, selected_color = "red".
# If index = 3, selected_color = "yellow".

selected_color = colors[index]
```

5. Reversing the selected color

```
# The slicing syntax [::-1] is used to reverse the string stored in
selected_color.
# The slice [::-1] starts at the end of the string and moves backward,
creating a reversed version.
# For example:
# If selected_color = "green", then password = "neerg".
# If selected_color = "purple", then password = "elprup".

password = selected_color[::-1]
```

6. Printing the results

```
#The print statements display the selected color and the generated
password (reversed color) to the user.

print("Selected Color:", selected_color)
print("Generated Password:", password)
```

[Example Output]

```
# Selected Color: purple  
Generated Password: elprup
```