Python Solution

13th Batch

Problem: Using python run & write down the codes for the following outputs:

Mashfiqul Alam Jibon
01789-454545

Code:

```
print("Mashfiqul Alam Jibon")
print("01789-454545")
```

Problem: Find maximum and minimum from 25,58,66,89

Code:

```
numbers = [25, 58, 66, 89]

maximum = max(numbers)
minimum = min(numbers)

print(maximum)
print(minimum)
```

Problem: Operate square root of 625.

Code:

```
import math

square_root = math.sqrt(625)
print(f"Square root of 1089: {square_root}")
```

Problem: SDG 2030 goals are: Eliminate Poverty, Erase Hunger, Establish Good Health and 5 Well-Being, Provide Quality Education, Enforce Gender Equality, Improve Clean Water and Sanitation, Grow Affordable and Clean Energy.

Use backslash and print them into separate lines.

Code:

```
print("Eliminate Poverty \\\n",
      "Erase Hunger \\\n",
      "Establish Good Health and Well-Being \\\n",
      "Provide Quality Education \\\n",
      "Enforce Gender Equality \\\n",
      "Improve Clean Water and Sanitation \\\n",
      "Grow Affordable and Clean Energy")
```

Problem: Use "name", "age" and "cgpa" as variables and put "Karim","21" and "3.87" 5 respectively into the following paragraph.

Rahim is a good man. Rahim lives in Bangladesh. His age is about 22 years. At the age of 22 he completed his Msc. He scored 3.88 in his Msc.

Code:

```
name = "Karim"
age = 21
cgpa = 3.87

paragraph = f"{name} is a good man. {name} lives in Bangladesh. His
age is about {age} years. At the age of {age+1} he completes his MSc.
He scored {cgpa} in his MSc."

print(paragraph)
```

Problem: Let X = 8 and Y = 4
Then operate X+Y, X-Y, X*Y, X/Y, X%Y, X**Y

Code:

```
X = 8
Y = 4

print("X + Y =", X + Y)
print("X - Y =", X - Y)
print("X * Y =", X * Y)
print("X / Y =", X / Y)
print("X % Y =", X % Y)
print("X ** Y =", X ** Y)
```

Problem: Using input function, write down the code for the following outputs:

Student Information
——------------------------
Name: Rana
ID:2245465
Age:25
GPA:4.88
Group: Science

Code:

```
# Input prompts
print("Enter your details below:")

name = input("Name: ")
student_id = input("ID: ")
age = input("Age: ")
gpa = input("GPA: ")
group = input("Group: ")

# Displaying the entered information
print("\nStudent Information")
print("--------------------")
print(f"Name: {name}")
print(f"ID: {student_id}")
```

```
print(f"Age: {age}")
print(f"GPA: {gpa}")
print(f"Group: {group}")
```

Problem:

Enter first number: 22
Enter second number: 33
Enter third number: 44
Enter fourth number: 55

The sum is: 154
The average is: 38.5
The multiple is: 1756920

Code:

```
num1 = float(input("Enter first number: "))
num2 = float(input("Enter second number: "))
num3 = float(input("Enter third number: "))
num4 = float(input("Enter fourth number: "))

# Calculations
sum = num1 + num2 + num3 + num4
average = sum / 4
multiple = num1 * num2 * num3 * num4

# Displaying results
print(f"\nThe sum is: {sum}")
print(f"The average is: {average}")
print(f"The multiple is: {product}")
```

Problem: Calculate the following:

Area of Trapezoid (parallel length are 5,10 and vertical height=18)
Area of Circle (r = 5)
Area of Sector (r = 5) and theta = 47 degree)

[.5(a+b)h], [pi*r^2], [.5r^2 theta]
Code:

```
import math

# Area of trapezoid
a, b, h = 5, 10, 18
area_trapezoid = 0.5 * (a + b) * h
print("Area of Trapezoid:", area_trapezoid)

# Area of circle
r = 5
area_circle = math.pi * r**2
print("Area of Circle:", area_circle)

# Area of sector
theta = 47  # in degrees
area_sector = 0.5 * r**2 * math.radians(theta)
print("Area of Sector:", area_sector)
```

Problem: For the value of 40 and 70 use the following operators Less than, Greater than, Less than 5 equal, Greater than equal, Not equal

Code:

```
# Values
Value1 = 40
value2 = 70

# Comparison
print(value1 < value2)
print(value1 > value2)
print(value1 <= value2)
print(value1 >= value2)
print(value1 != value2)
```

Problem: Using If, else if and else statement group your gpa from "A+" to "F"

Code:

```
gpa = float(input("Enter GPA: "))
```

```
if gpa >= 4.0:
    grade = "A+"
elif gpa >= 3.75:
    grade = "A"
elif gpa >= 3.5:
    grade = "A-"
elif gpa >= 3.0:
    grade = "B"
elif gpa >= 2.5:
    grade = "C"
elif gpa >= 2.0:
    grade = "D"
else:
    grade = "F"

print(f"Your grade is: {grade}")
```

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