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| **Name of student: Abhay Omprakash Prajapati** | | |
| **Roll no: 41** | **Tutorial No: 1** | |
| **Title of LAB Assignment:** To write, test, and debug Basic Python programs. | | |
| **DOP: 25-09-2023** | **DOS:02-10-2023** | |
| **CO Mapped:** Co1,Co2 | **PO Mapped:** PO3 ,PO6 | **Signature:** |

**1. Add Three Numbers:**

```
num1 = 5
num2 = 8
num3 = 10
sum_of_numbers = num1 + num2 + num3
print("The sum of", num1, "+", num2, "+", num3, "is:", sum_of_numbers)
```

**Output:**


## 2. Swap two Numbers with and without a Third Variable:

```
num1 = 5
num2 = 8
num3 = 10
sum_of_numbers = num1 + num2 + num3
print("The sum of", num1, "+", num2, "+", num3, "is:", sum_of_numbers)
```

## Output:


## 3. Calculate the Area of a Triangle:

```
base = 6
height = 8
area = 0.5 * base * height
print("The area of the triangle with base", base, "and height", height, "is:",
area)
```

## Output:


## 4. Solve Quadratic Equation:

```
import math
```

```
a = 1
b = 5
c = 6

discriminant = b**2 - 4*a*c

if discriminant > 0:
    root1 = (-b + math.sqrt(discriminant)) / (2*a)
    root2 = (-b - math.sqrt(discriminant)) / (2*a)
    print("Two real roots: Root 1 =", root1, "Root 2 =", root2)
elif discriminant == 0:
    root = -b / (2*a)
    print("One real root:", root)
else:
    real_part = -b / (2*a)
    imaginary_part = math.sqrt(-discriminant) / (2*a)
    print("Complex roots: Root 1 =", real_part, "+", imaginary_part, "i and
Root 2 =", real_part, "-", imaginary_part, "i")
```

## Output:


## 5. Use Bitwise Operators:

```
x = 5
y = 3
result_and = x & y
print("Bitwise AND:", result_and)

result_or = x | y
print("Bitwise OR:", result_or)

result_xor = x ^ y
print("Bitwise XOR:", result_xor)
```

## Output:


## 6. Compute Compound Interest:

```python
# Task 6: Compute Compound Interest
principal = 1000
rate = 5
time = 3
n = 12  # Compounded annually

amount = principal * (1 + (rate / (100 * n))) ** (n * time)
interest = amount - principal
print("Principal Amount:", principal)
print("Rate of Interest:", rate)
print("Time (in years):", time)
print("Number of times interest is compounded per year:", n)
print("Amount after compound interest:", amount)
print("Interest earned:", interest)
```


## 7. Generate a Random Number between 0 and 100:

```python
import random

random_number = random.randint(0, 100)
print("Random Number between 0 and 100:", random_number)
```

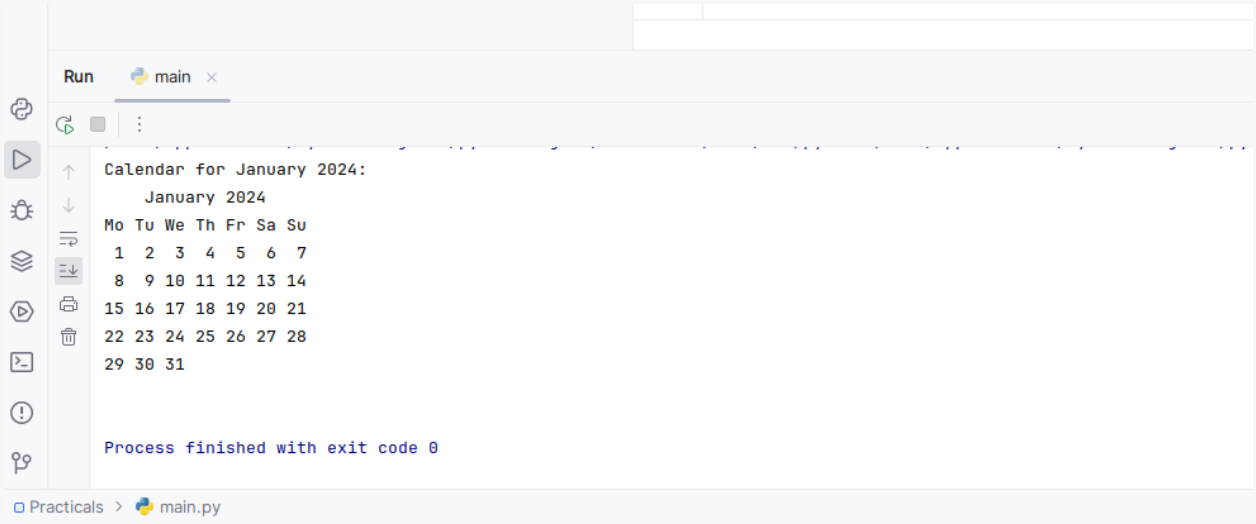
## Output:


## 8. Display Calendar for January 2024:

```
import calendar

year = 2024
month = 1
print("Calendar for January 2024:")
print(calendar.month(year, month))
```

## Output:




## 9. Add Two Binary Numbers:

```
binary1 = "1010"
binary2 = "1101"

decimal1 = int(binary1, 2)
decimal2 = int(binary2, 2)
result_decimal = decimal1 + decimal2
result_binary = bin(result_decimal).replace("0b", "")

print("Binary 1:", binary1)
```

```
print("Binary 2:", binary2)
print("Sum in Binary:", result_binary)
```

## Output: