

Name: Atharva Kesarkar
Class: AI&DS Batch -1
Roll no: 17

Experiment 1

AIM: Experiment based on input and output, variables and operators in python.

Tools: Anaconda Navigator (Jupyter notebook)

◆ Objective

This experiment focuses on helping us:

- Learn how to receive input from the user through the console.
- Understand how to show output using the print() function.
- Use variables to store and manage data in a program.
- Perform calculations and decisions using various Python operators.
- Get comfortable writing simple interactive Python scripts.

■ Theory

◆ 1. Taking Input in Python

Python provides the input() function to accept input from the user. By default, the data is read as a **string**.

```
name = input("Enter your name: ")
```

To take a number as input:

```
age = int(input("Enter your age: "))
```

◆ 2. Displaying Output

To show results or messages to the user, Python uses the print() function.

```
print("Welcome to Python!")
```

You can print both strings and variables:

```
name = "Sam"  
print("Hello", name)
```

◆ 3. Variables in Python

Variables are labels used to store data. In Python, we don't need to define the type — it's detected automatically.

```
x = 10
name = "Anya"
```

◆ 4. Operators in Python

Python offers several types of operators:

- **Arithmetic Operators:** +, -, *, /, //, %, **
- **Assignment Operators:** =, +=, -=, *=, /=
- **Comparison Operators:** ==, !=, <, >, <=, >=
- **Logical Operators:** and, or, not
- **Bitwise Operators:** &, |, ^, ~, <<, >>

Example:

```
a = 5
b = 2
print(a + b)    # 7
print(a > b)    # True
print(a > 0 and b < 5) # True
```

CODE:

```
1. Input from user and Output using print()
name = input("Enter your name: ")
age = int(input("Enter your age: "))

print("Hello", name + "!")
print("You are", age, "years old.")
```

Output:

```
name = input("Enter your name: ")
age = int(input("Enter your age: "))

print("Hello", name + "!")
print("You are", age, "years old.")
```

```
Enter your name: Atharva Kesarkar
Enter your age: 18
Hello Atharva Kesarkar!
You are 18 years old.
```

2. Variable assignment

```
a = 20
```

```
b = 69
```

3. Arithmetic operations

```
print("Addition:", a + b)
```

```
print("Subtraction:", a - b)
```

```
print("Multiplication:", a * b)
```

```
print("Division:", a / b)
```

```
print("Floor Division:", a // b)
```

```
print("Modulus:", a % b)
```

```
print("Exponent:", a ** b)
```

Output:

```
a = 20
b = 2
# 3.    Arithmetic operations
print("Addition:", a + b)
print("Subtraction:", a - b)
print("Multiplication:", a * b)
print("Division:", a / b)
print("Floor Division:", a // b)
print("Modulus:", a % b)
print("Exponent:", a ** b)
```

```
Addition: 22
```

```
Subtraction: 18
```

```
Multiplication: 40
```

```
Division: 10.0
```

```
Floor Division: 10
```

```
Modulus: 0
```

```
Exponent: 400
```

4. Comparison operators

```
print("Is a greater than b?", a > b)
```

```
print("Is a equal to b?", a == b)
```

Output:

```
print("Is a greater than b?", a > b)
print("Is a equal to b?", a == b)
```

```
Is a greater than b? True
```

```
Is a equal to b? False
```

5. Logical operators

```
print("Is a > 5 and b < 10?", a > 5 and b < 10)
```

Output:

```
print("Is a > 5 and b < 10?", a > 5 and b < 10)
```

Is a > 5 and b < 10? True

Conclusion:

This experiment helped me understand the basics of working with Python. I now know how to take user input, show output, use variables to store data, and apply different types of operators to perform operations. These are the key building blocks for writing Python programs and solving real-world problems using code.

For Faculty use only:

Correction Parameters	Formative Assessment [40%]	Timely completion of practical [40%]	Attendance/ Learning Attitude [20%]	
Marks Obtained				