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Python Fundamentals – Data Types, Operations & String Formatting

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Python Basics: Data Types & Operations

1. Data Types in Python

- str (String) → "bilal" (Text data)
- float (Floating-point Number) → 9.9 (Decimal number)
- int (Integer) → 2, 10, 5 (Whole numbers)
- bool (Boolean) → True, False (Logical values)

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2. Using type() to Identify Data Types

python Copy code

```
number = 9.9
print(type(number))  # Output: <class 'float'>
```

✅ Helps check variable type dynamically.

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3. String Formatting in Python

Using f-strings for String Interpolation
name = "bilal"
print(f"My name is {name}") # Output: My name is bilal
✅ f-strings allow dynamic insertion of variables into strings.

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3.1. Multiline Strings using Triple Quotes (""" or ''')

```
print("""In this file:
name = "bilal"
number = 9.9
""")
```

✅ Used for multi-line text display.

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4. Arithmetic Operations in Python

Operation	Example	Symbol	**Operation**	Example	**Symbol**
Addition	2 + 2	+	Division	10 / 5	/
Subtraction	2 + 2	-	Modulus	10 % 3	%
Multiplication	10 * 5	*	Exponent	5 ** 3	**

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Example Code:

```
a = 10
b = 5
result = a * b
print(f"Multiplication: {result}")  # Output: Multiplication: 50
```

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5. Assignment Example: Calculating Total People & Rabri Quantity

```
Total_faculty = 12
Administrative_staff = 4
Students = 100
Absentees = 15
totalpeople = Total_faculty + Administrative_staff + Students - Absentees
Rabri = 250 * totalpeople
totalRabri = f"{Rabri}g"
print(f"""Total People: {totalpeople}
Total Rabri: {totalRabri}
""")
```

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✅ Logic:

- Calculate total people after removing absentees.
- Multiply total people by 250g to find the total Rabri required.

✅ Output:

Total People: 101
Total Rabri: 25250g

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Summary

✅ Python supports various data types (int, float, str, bool).
✅ f-strings simplify string formatting.
✅ Arithmetic operations are essential for calculations.
✅ Logical implementations (like the Rabri example) help solve real-world problems.

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Final Slide: Thank You! 🎉

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