

Assignment 1

1. Basic Variable and Data Type

- Create variables to store your name, age, and height. Print their values using the `print()` statement.

2. Input and Output

- Ask the user to input their name and age. Print a greeting like: `Hello John, you are 20 years old!`

3. Arithmetic Operators

- Ask two numbers from the user and display:
 - Their sum
 - Their difference
 - Their product
 - Their division result
 - Remainder when first is divided by second

4. Relational Operators

- Ask two numbers and check:
 - Which number is greater
 - Whether the two numbers are equal or not

5. Logical Operators

- Create two boolean variables: `has_passport = True` , `has_ticket = False` . Use logical operators to check:
 - Can the person travel?
 - Has the person either a passport or a ticket?

6. String Operators

- Create a string variable `word = "Python"` .
 - Use concatenation to create `PythonProgramming` .
 - Use repetition to repeat the word 3 times.

7. Membership Operator

- Check whether the letter `'a'` exists in the word `"Data"` .
- Check whether `'z'` is in `"Python"` .

8. Formatted Strings using `f""`

- Take name and marks as input from the user.
- Display output like: `Student John scored 95 marks in the exam.`

9. Formatted Multiline String using `f""" """`

- Take input for name, age, and country.
- Display this using multiline formatted string:

```
Hello John!
You are 25 years old and live in Canada.
Nice to meet you!
```

10. Mini Task

- Ask the user to input two numbers and a word.
- Display:
 - Sum and difference of the numbers
 - Whether the numbers are equal or not
 - Whether the word contains the letter `'e'`
 - A final message using formatted string like: `Hey there! You entered numbers 5 and 10, and the word 'Hello'.`

11. Area of a Rectangle

- Ask the user to input the `length` and `width` of a rectangle.
- Calculate and display the area using the formula: `Area = length × width`

12. Area of a Circle

- Ask the user to input the `radius` .
 - Calculate the area using the formula: `Area = 3.1416 × radius × radius`
 - Print the result with a formatted string like: `The area of the circle is 78.5 square units.`
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13. Volume of a Cube

- Input: length of one side.
 - Formula: $\text{Volume} = \text{side}^3$
 - Display the result with proper units and formatting.
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14. Volume of a Cylinder

- Ask for radius and height .
 - Use the formula: $\text{Volume} = 3.1416 \times \text{radius}^2 \times \text{height}$
 - Display result using `f"" ""` multiline string.
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15. Temperature Converter

- Ask user to input temperature in Celsius.
 - Convert it to Fahrenheit using: $F = (C \times 9/5) + 32$
 - Print both values in a single formatted sentence.
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16. Simple Interest Calculator

- Input: Principal, Rate, Time
 - Formula: $SI = (\text{Principal} \times \text{Rate} \times \text{Time}) / 100$
 - Show the result using a formatted string.
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17. Perimeter of a Square

- Ask for the side of the square.
 - Calculate perimeter: $\text{Perimeter} = 4 \times \text{side}$
 - Print with appropriate units.
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18. Kilometers to Meters and Centimeters

- Ask user to enter a distance in kilometers.
 - Convert to meters ($\text{km} \times 1000$) and centimeters ($\text{km} \times 100000$).
 - Print all values in a formatted message.
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19. Minutes to Hours and Minutes

- Input: total minutes (e.g., 135).
 - Output: 2 hour(s) and 15 minute(s)
 - Use division and modulo operator.
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20. Basic Geometry Summary

- Input: base and height of a triangle, side of square, radius of a circle.
- Display:
 - Area of triangle ($0.5 \times \text{base} \times \text{height}$)
 - Perimeter of square ($4 \times \text{side}$)
 - Circumference of circle ($2 \times 3.1416 \times \text{radius}$)
- Use a **neatly formatted multiline string** to show all three results together.