Python Basics - Variables and I/O Functions

# 1. Variables in Python

Variables are containers for storing data values. In Python, you don’t need to declare the type of variable explicitly; the interpreter decides the type at runtime.

## Rules to Declare a Variable:

✔ Must start with a letter or underscore (\_).

✔ Can contain letters, digits, underscores.

✔ Cannot start with a digit.

✔ Cannot use Python keywords (like for, if, class).

✔ Case-sensitive (name ≠ Name).

## Valid Examples:

name = "Ravi"  
\_age = 20  
marks1 = 85

## Invalid Examples:

1name = "Ravi" # starts with number ❌  
for = 10 # keyword ❌  
stu-id = 101 # special character ❌

Diagram: Variable Naming Rules → Start with letter/\_ only, No keywords, Case-sensitive.

# 2. Input and Output Functions in Python

• input() → Reads data from the user (always as a string).  
• print() → Displays data on the screen.

## Q1: Program to Collect Person’s Data

# Program to collect person's data  
name = input("Enter your name: ")  
age = int(input("Enter your age: "))  
city = input("Enter your city: ")  
  
print("\n--- Person's Details ---")  
print("Name:", name)  
print("Age:", age)  
print("City:", city)

## Q2: Program to Read Student Id, Name and 3 Subject Marks

# Program to read student details  
stu\_id = input("Enter Student ID: ")  
stu\_name = input("Enter Student Name: ")  
mark1 = int(input("Enter marks of Subject 1: "))  
mark2 = int(input("Enter marks of Subject 2: "))  
mark3 = int(input("Enter marks of Subject 3: "))  
  
# Calculate total and average  
total = mark1 + mark2 + mark3  
average = total / 3  
  
print("\n--- Student Details ---")  
print("ID:", stu\_id)  
print("Name:", stu\_name)  
print("Marks:", mark1, mark2, mark3)  
print("Total Marks:", total)  
print("Average Marks:", average)