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)
```