



# C++ - A01: Variables, Data Types, and Input Taking

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## 1. Display User Information

Write a program to input the student's name, age, and roll number, then display this information in the following format:

**Example Output:**

```
Name: Ravi  
Age: 18  
Roll Number: 12
```

## 2. Favorite Movie

Input the name of your favorite movie and the year it was released. Display the following message:

**Example Output:**

```
Your favorite movie is: Inception  
It was released in: 2010
```

## 3. Area of a Rectangle

Input the length and width of a rectangle and display the entered values in the format:

**Example Output:**

```
Length: 10  
Width: 5
```

## 4. Combine First and Last Name

Input the first name and last name of a student and display them as a full name.

**Example Output:**

```
First Name: Ramesh
Last Name: Gupta
Full Name: Ramesh Gupta
```

## 5. Birthday Year

Input your age and display your estimated birth year (by subtracting your age from the current year).

**Example Output:**

```
You are 20 years old.
Your estimated birth year is: 2003
```

*(You can hardcode the current year, e.g., 2023.)*

## 6. Simple Interest Calculator

Write a program to calculate and display the simple interest. Input the principal amount, rate of interest, and time (in years). Use the formula:

$$\text{Simple Interest} = \frac{\text{Principal} \times \text{Rate} \times \text{Time}}{100}$$

**Example Input:**

```
Principal: 10000
Rate: 5
Time: 2
```

**Example Output:**

```
Simple Interest: 1000
```

## 7. Swap Two Variables

Write a program to input two numbers and display their values before and after swapping.

**Example Input:**

```
Number 1: 10
Number 2: 20
```

**Example Output:**

```
Before Swapping: Number 1 = 10, Number 2 = 20
After Swapping: Number 1 = 20, Number 2 = 10
```

## 8. Temperature Conversion

Write a program to input a temperature in Celsius and convert it to Fahrenheit using the formula:

$$\text{Fahrenheit} = (\text{Celsius} \times 9/5) + 32$$

**Example Input:**

```
Celsius: 25
```

**Example Output:**

```
Temperature in Fahrenheit: 77
```

## 9. Days to Years, Weeks, and Days

Write a program to input a number of days and convert it into years, weeks, and remaining days. Assume 1 year = 365 days and 1 week = 7 days.

**Example Input:**

```
Enter total days: 800
```

**Example Output:**

```
Years: 2
Weeks: 8
Remaining Days: 5
```

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## 10. Box Dimensions and Volume

Write a program to input the length, width, and height of a box and calculate its volume using the formula:

$$\text{Volume} = \text{Length} \times \text{Width} \times \text{Height}$$

**Example Input:**

```
Length: 5
Width: 4
Height: 3
```

**Example Output:**

```
The volume of the box is: 60
```

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All The Best!