

**Lab # 02**

Programming Fundamentals

***Objectives:***

**Working with Data Types & Variables**

* Basics of variables
* Basics of data types
* Initialization & declaration of variables
* Implementation of variables
* Fundamental Arithmetic Operators

# Variables:

Variables are **containers for storing data** values. In C++, there are different types of variables.

for example:

**int** - stores integers (whole numbers), without decimals, such as 123 or -123.

**double** - stores floating point numbers, with decimals, such as 19.99 or -19.99

# Data Types:

# Each variable in C++ has a specific type, which determines the size and layout of the variable's memory, this type is known as data type of that variable.

# Variable Declaration:

# The variable declaration refers to the part where a variable is first declared or introduced before its first use.

# For example:

# int a;

# float b;

# char c;

# Variable Initialization:

A variable can be initialized at the time of declaration or even after that. Basically initialization means storing some actual meaningful data inside the variable.

For example:

int a=2;

char b=’x’;

float c=2.907;

# Implementation of Variables:

Practice Task-1:

Type and save the following programs in DEV C++. Run these programs and observe their output.

# 

# 

**Fundamentals of Arithmetic Operators:**

# 

**Lab Task:**

1. Write a program to calculate, sum, difference, multiplication and division of two numbers.
2. Write a simple program that calculates the total marks and average of marks obtained by a student in five subjects and prints the grade.