High School Programming

Lecture: 03

WELCOME TO

Mahinur Rahaman Hridoy

BSc in CSE, Diploma
Software Developer

Recap Previous Lecture

- How to do programming using **Mobile Phone**?
- How to do programming using **Computer**?
- Write your first program

Agenda

- C# Introduction
- Types of application
- Program structure, syntax, and comments
- Datatypes
- Variables

C# Programming Language

- C# is pronounced “C-Sharp”
- It is an object-oriented programming language created by Microsoft that runs on the .NET Framework.
- C# has roots from the C family, and the language is close to other popular languages like C++ and Java.
- The first version was released in year 2002. The latest version, C# 11, was released in November 2022.

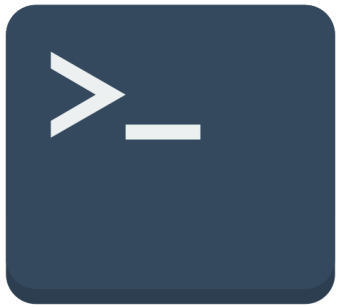
Why Use C#?

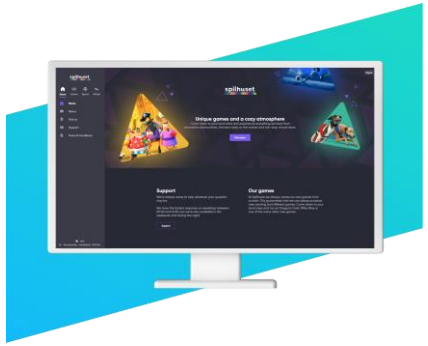
- It is one of the most popular programming language in the world
- It is easy to learn and simple to use
- It has a huge community support
- C# is an object oriented language which gives a clear structure to programs and allows code to be reused, lowering development costs
- As C# is close to C, C++ and Java, it makes it easy for programmers to switch to C# or vice versa

Fig: C-Sharp

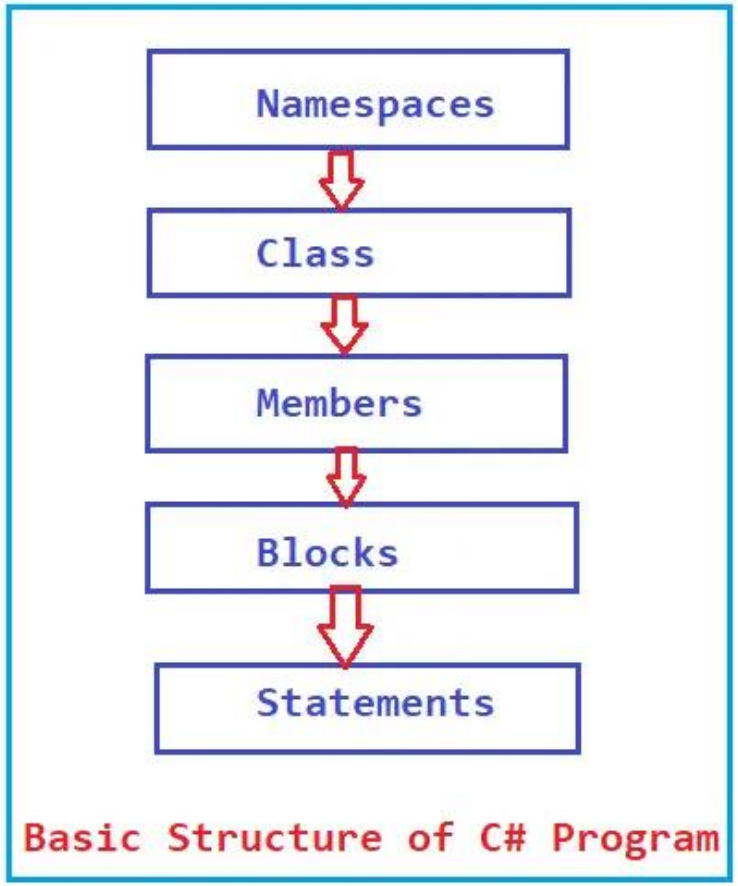
Types of applications

1. Console Application
2. Web Application
3. Android Application
4. Windows Application





Basic Structure and Syntax




```
namespace FirstConsoleApp
{
    class Program
    {
        static void Main(string[] args)
        {
            Console.WriteLine("Hello World");
        }
    }
}
```

Comments

-- Comments can be used to explain C# code, and to make it more readable. It can also be used to prevent execution when testing alternative code.

Single-line Comments:
Single-line comments start with two forward slashes (//).

Example:
```
// This is a comment
Console.WriteLine("Hello World!");
```

C# Multi-line Comments:
-- Multi-line comments start with /* and ends with */.

Example:
```
/* The code below will print the words Hello World
to the screen, and it is amazing */
Console.WriteLine("Hello World!");
```

Fig: Comment

Datatypes

-- The Datatypes are something that gives information about

1. The **Size** of the memory location.
2. The **Range of data** that can be stored inside that memory location
3. Possible **Legal Operations** that can be performed on that memory location.
4. What **Types of Results** come out from an expression when these types are used inside that expression?

Data Type	Size	Description
int	4 bytes	Stores whole numbers from -2,147,483,648 to 2,147,483,647
long	8 bytes	Stores whole numbers from -9,223,372,036,854,775,808 to 9,223,372,036,854,775,807
float	4 bytes	Stores fractional numbers. Sufficient for storing 6 to 7 decimal digits
double	8 bytes	Stores fractional numbers. Sufficient for storing 15 decimal digits
bool	1 bit	Stores true or false values
char	2 bytes	Stores a single character/letter, surrounded by single quotes
string	2 bpc	Stores a sequence of characters, surrounded by double quotes

Variables

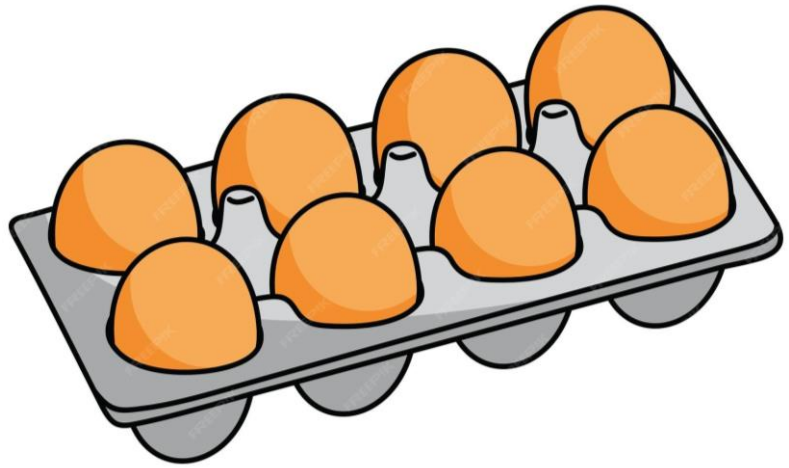
-- Variables are containers for storing data values.

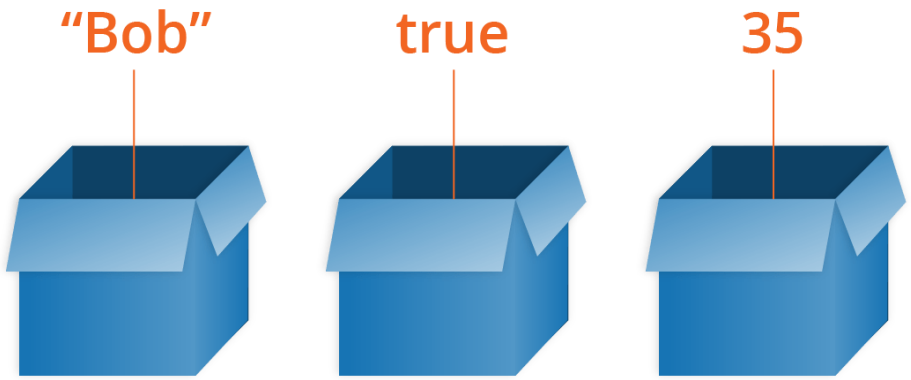
SYNTAX: data_type variable_name;

EXAMPLE: int age; float gpa;

Rules for variable declaration in C#:

- ✓ A variable name must begin with a letter or underscore.
- ✓ Variables in C# are case sensitive
- ✓ They can be constructed with digits and letters.
- ✓ No special symbols are allowed other than underscores.
- ✓ sum, Height, _value, and abc123, etc. are some examples of the variable name





Contact Me

Phone
+8801321869515

Website
www.mrhridoy.me

Mail
mrhridoy.me@gmail.com

Facebook
Mahinur Rahaman Hridoy

Thank You