PROGRAMMING SKILLS II

~ ANURUDDHA ABEYSINGHE

SLIIT ACADEMY

Foundation Certification in IT – Curtin batch
Year 1, Semester 2

LEARNING OUTCOMES

identify the compilation process in a computer architecture

Implement and understand the simple Console Application using C#

○ Assignment	30%	Continuous Assessments
○ Midterm Exam (Online Exam)	20%	
○ Final Exam (Written Paper 2 hours)	50%	
▪ TOTAL	100%	

ASSESSMENT CRITERIA

POINT OF CONTACTS

Email – anuruddha.a@sliit.lk

PHONE NUMBER
0117543600

CONTACT : MAIL

VIRTUAL LEARNING ENVIRONMENT

SAM:-SLITT Academy Moodle

Url: https://sam.sliitacademy.lk/

Enrolment Key : - PS#2023

Accessible areas:12th Hall 05, Lab1,Lab2

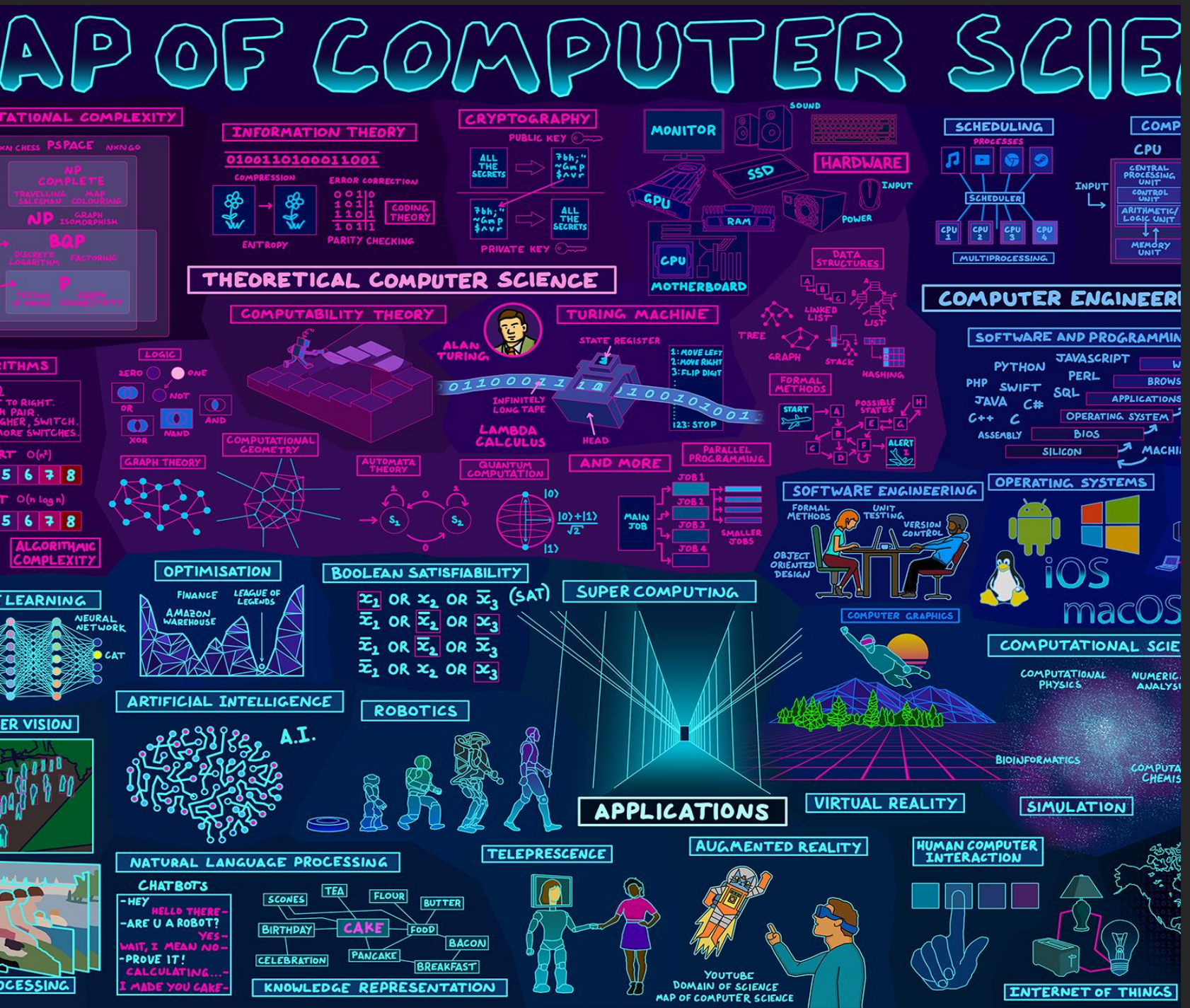
All the lecture slides extra readings will be uploaded to SAM

METHOD OF LEARNING THE SUBJECT

Student centric interactive Lectures

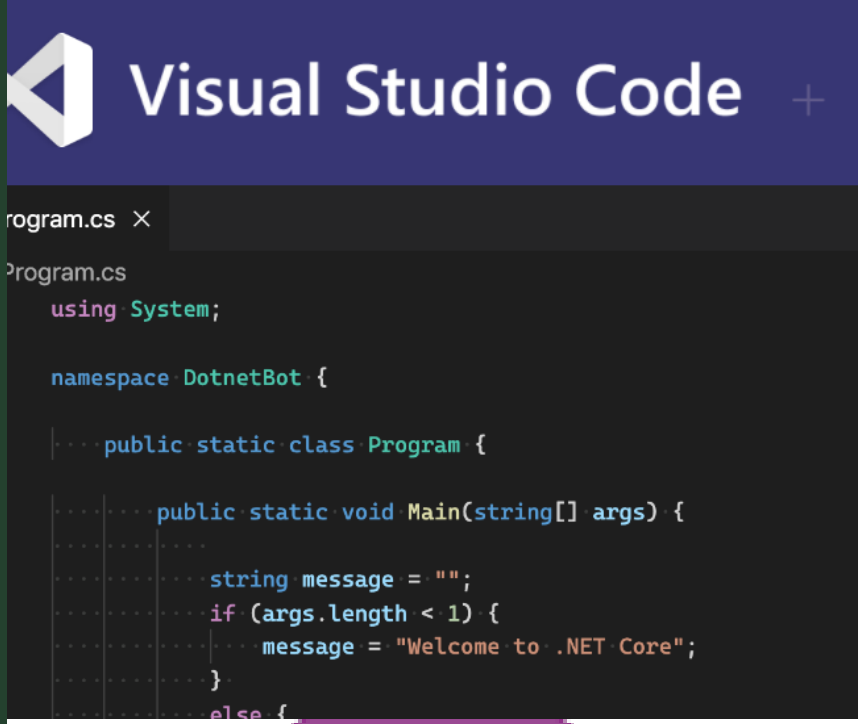
Tutorial session where you can practice exercise.

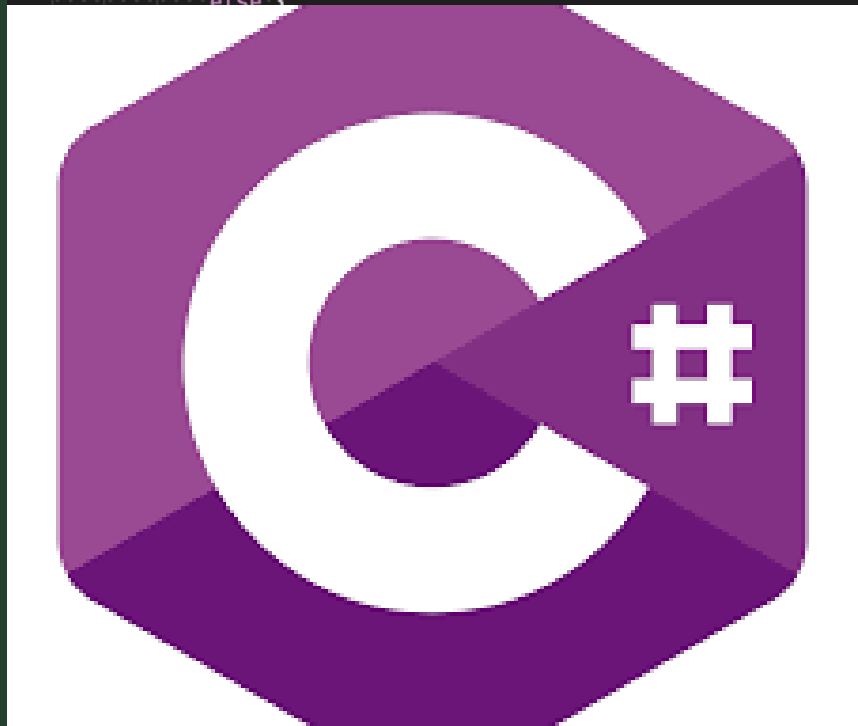
SAM virtual learning environment for additional exercise



DOMAIN OF COMPUTER SCIENCE

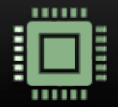
LET'S START TO LEARN C#





THINGS YOU NEED FOR PRACTICING C# IN SLIIT ACADEMY LAB AREA

Ubuntu – Operating System

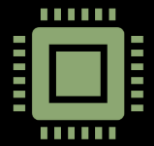


Visual Studio Code - IDE

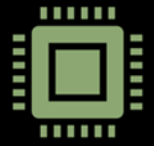
MonoCompiler tool - Compile the program

Interest to learn

WHAT IS A COMPILER?



A computer program translate one language into another.



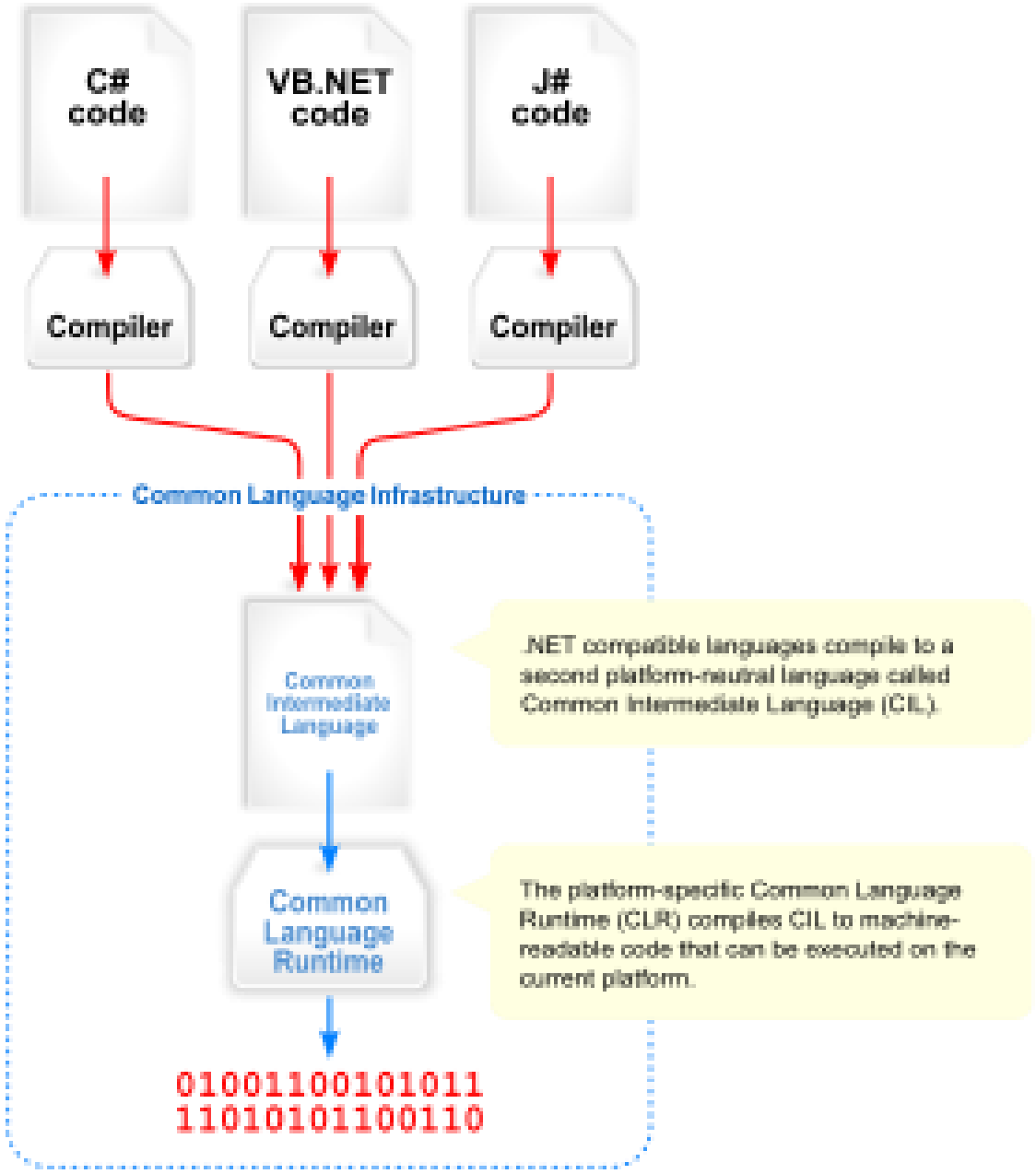
The difference between compiler and an interpreter??

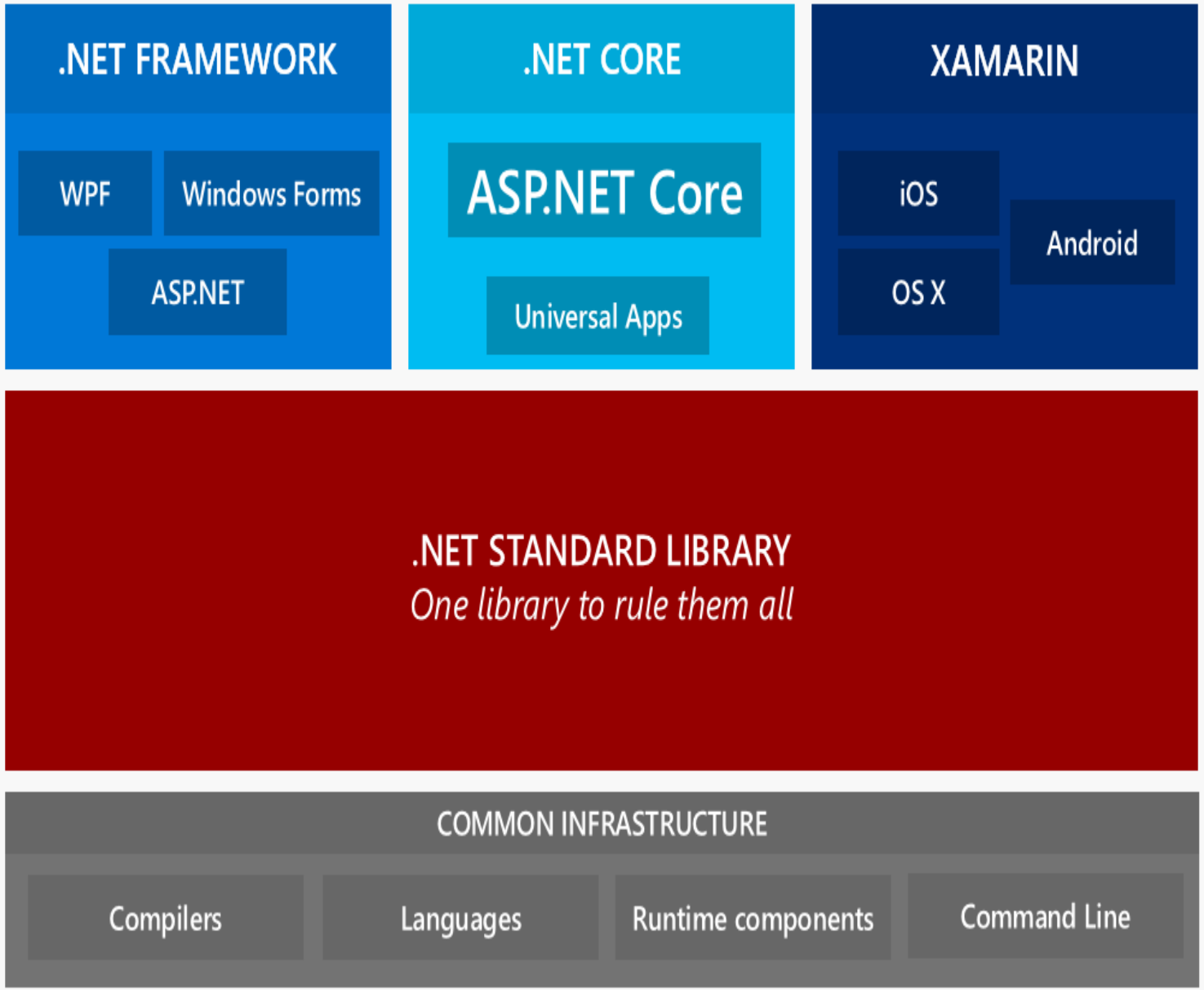
DIFFERENCE BETWEEN COMPILER AND INTERPRETER

Difference between Compiler and Interpreter

No	Compiler	Interpreter
1	Compiler Takes **Entire** program as input	Interpreter Takes **Single** instruction as input .
2	Intermediate Object Code is **Generated**	**No** Intermediate Object Code is **Generated**
3	Conditional Control Statements are Executes **faster**	Conditional Control Statements are Executes **slower**
4	**Memory Requirement** : **More** (Since Object Code is Generated)	**Memory Requirement** is **Less**
5	Program need not be **compiled** every time	Every time higher level program is converted into lower level program
6	**Errors** are displayed after **entire program** is checked	**Errors** are displayed for **every instruction** interpreted (if any)
7	**Example** : C Compiler	**Example** : BASIC

HOW C# COMPILER WORKS





.NET FRAMEWORK ARCHITECTURE

SIMPLE C# PROGRAM

```
using System;

class FCIT
{
        public static void Main()
        {
            Console.WriteLine("Welcome to Programming World”);

        }
}
```

STEP TO EXECUTE YOUR PROGRAM

1. Save your file as whatevername.cs. Remember the extension
2. Open terminal in ubuntu/windows
3. Compile with following command in ubuntu
    - mcs whatervername.cs
4. Execute your program with following command in ubuntu
    - mono whatervername.exe

STRUCTURE OF A C# HELLO, WORLD(EXAMPLE)

The Class

The Main Method

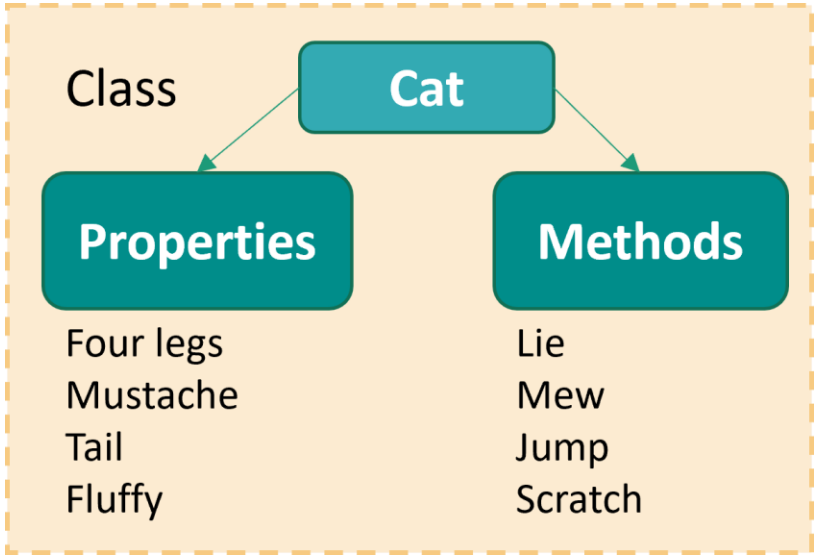
The using Directive and the System Namespace

THE CLASS

- A C# application is a collection of classes, structures, and types
- A class Is a set of data and methods.(Templates)

```
class <<name>>
{
      //Properties / variables
      //Methods

}
```



THE MAIN METHOD

- Starting point of your program.
- When writing Main, you should:
  - Use an uppercase “**M**”, as in “**Main**”
  - Designate one **Main** as the entry point to the program
  - Declare **Main** as **public static void Main**
- There can only be one and it is a static method in a class.
- When Main finishes, or returns, the application quits

THE USING DIRECTIVE AND THE SYSTEM NAMESPACE

```
using System;
…
Console.WriteLine("Hello, World");
```

- The .NET Framework provides many utility classes
- Organized into namespaces
- System is the most commonly used namespace
- Refer to classes by their namespace

```
System.Console.WriteLine("Hello, World");
```

BASIC INPUT/OUTPUT OPERATIONS(THE CONSOLE CLASS)

Write and WriteLine Methods

Read and ReadLine Methods

THE CONSOLE CLASS

01

Provides access to the standard input, standard output, and standard error streams

02

Only meaningful for console applications

- Standard input – keyboard
- Standard output – screen
- Standard error – screen

03

All streams may be redirected

COMMENTING APPLICATIONS

- Comments are important
  - A well-commented application permits a developer to fully understand the structure of the application
- Single-line comments

```
// Get the user's name
Console.WriteLine("What is your name? ");
name = Console.ReadLine( );
```

- Multiple-line comments

```
/* Find the higher root of the
   quadratic equation */
x = (…);
```

LET'S SUMMARIZE

Compiling Process

.Net Framework Architecture

Basic C# program Structure

THANK YOU

SEE YOU NEXT WEEK