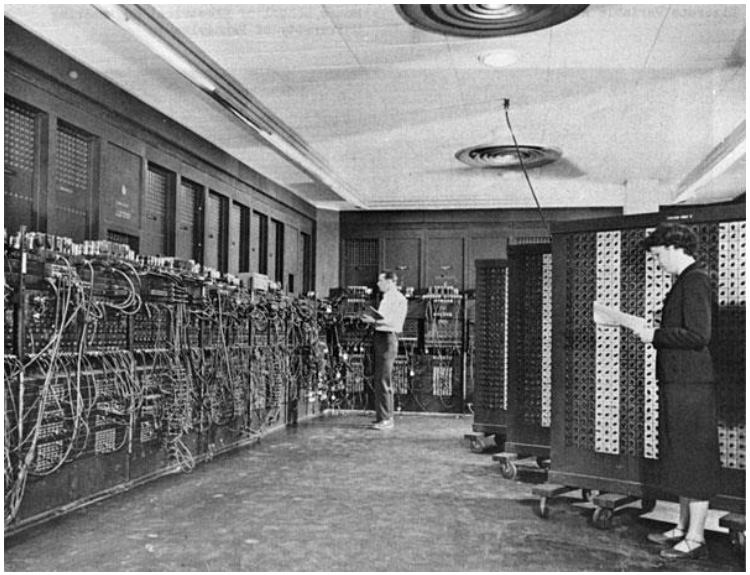
# Module 1
# Part 1

Principles of Programming Language
and a bit of History

# What is a Programming Language?

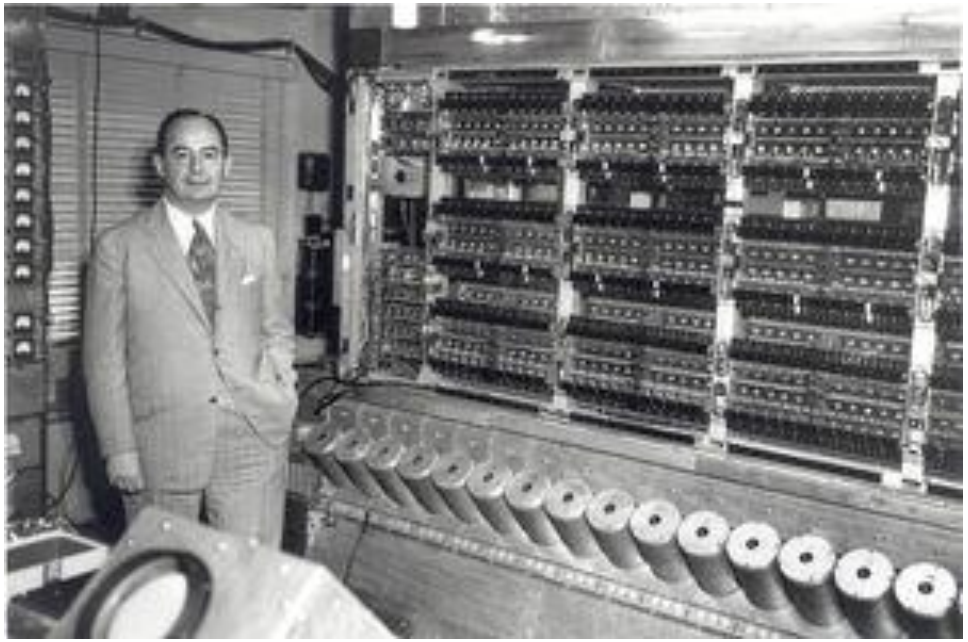
- Lets describe first natural language like English, Filipino etc.
  - Person to person
- In programming language:
  - Person to computer
- Definition by experts:
  - A programming language is a system for describing computation.
  - A system of signs used by a person to communicate a task/algorithm to a computer, causing the task to be performed.

# ENIAC – Electronic Numerical Integrator and Computer



Q1. What is the difference of this machine compared with today's machine?

# John Von Neumann



Q2. What is the difference of this machine compared with today's machine?

**Important of Programming Languages**

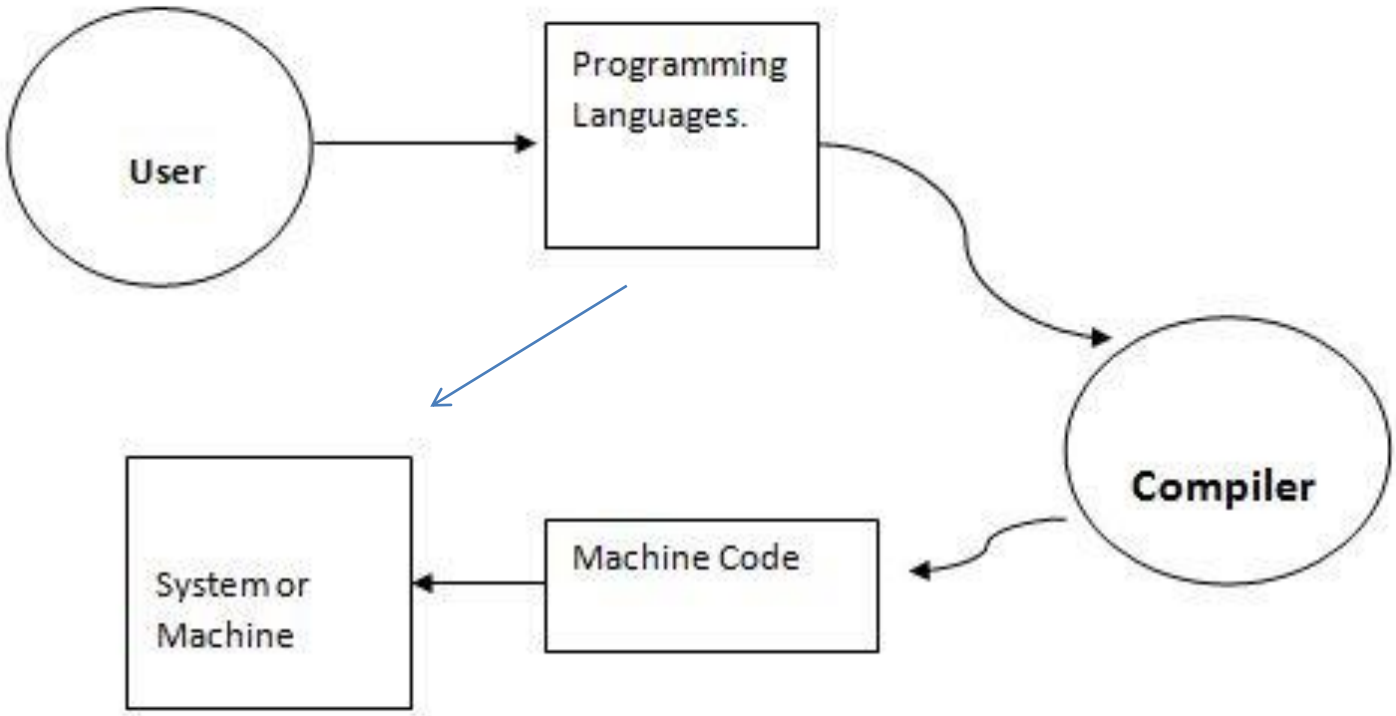
Programming language is the heart of software. Without programming we cannot make many applications and software. Programming Language is a  key factor of software as well as embedded systems. Without programming language we cannot communicate with machines or systems. Systems only know machine code. Machine codes mean some set of series of numbers. Machine code we can call bits.

Humans only know high level languages but machines do not know high level languages.
Humans and machine could not communicate directly. We need one intermediate because humans could not understand machine languages like machines could not understand high level languages.

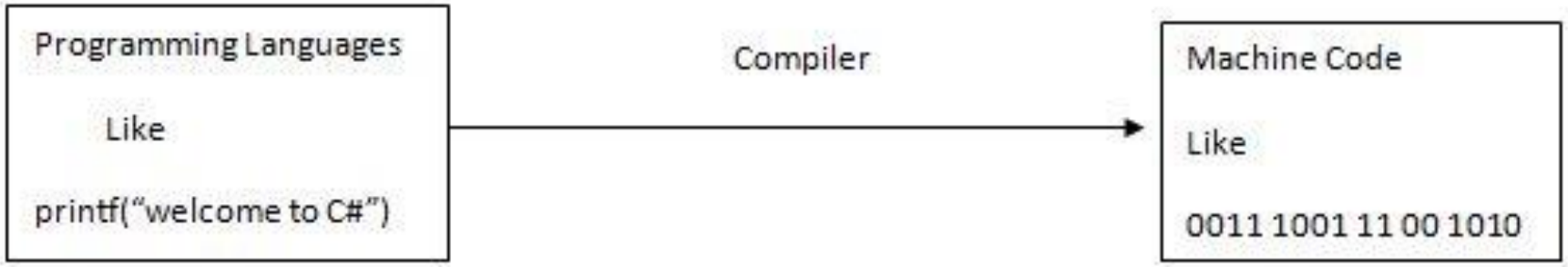
**Compiler**

Compiler is an intermediary to understand each language. Compiler converts  High level languages to low level languages as well as low level languages  convert to high level languages. Each language needs at least one compiler. Without compiler we could not understand low high level language.

# Flow of Programming Language

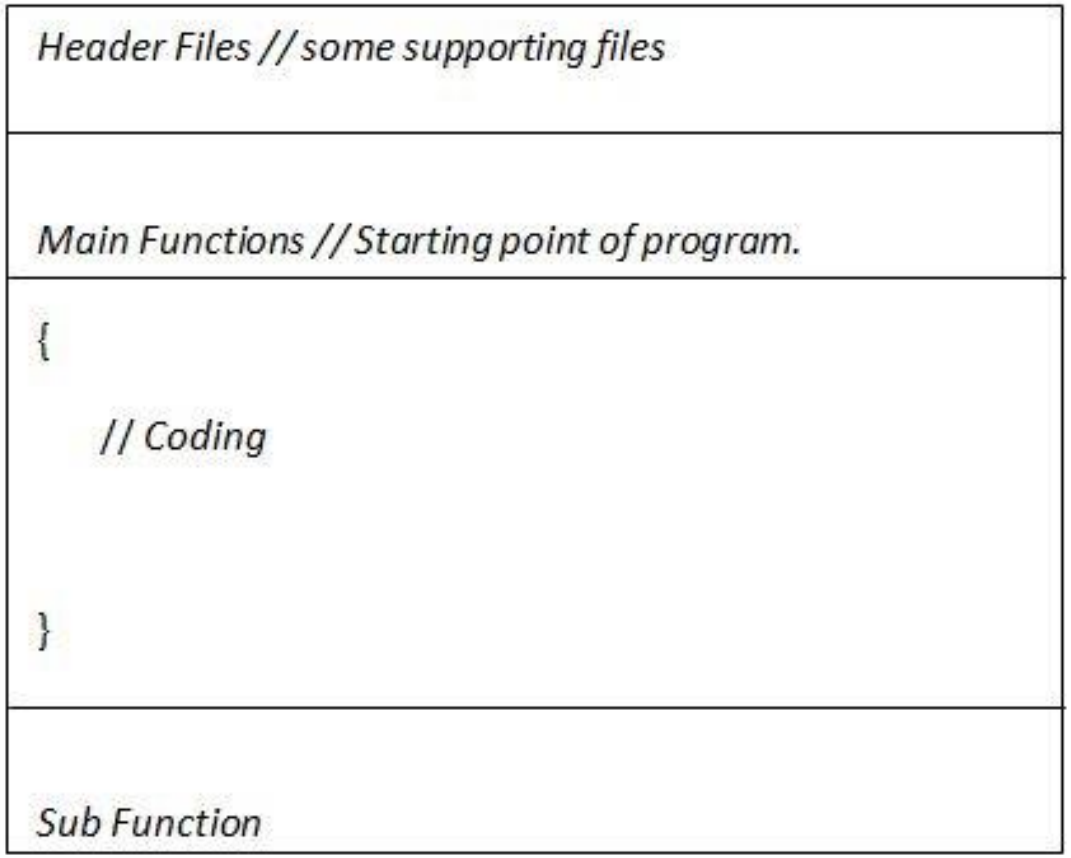


# Compiler Task




Q3. Roughly describe how does the compiler translate this into machine code (In your own words)?

# Structure of Programming Language




Header file is some supporting files. It is located at the top of program. Header file is the head of program. We call header file a different name in different languages. Like bellow.

Header File -> C Language

Header File -> C++ Language

Package -> Java Language

Namespace -> C# Language

Main Function is important part of programming languages. Main function is like our body, each and every function happens in main function section. Main function is starting point of programming languages. Sub function is optional one. If need it we can use, otherwise leave it.

All programming language is syntax wise different apart from others, these are same. For example ifI  need to print one line using any program using below.

| | |
|---|---|
| printf(“Welcome To C# Corner”) | C Language |
| cout<<”Welcome To C# Corner”; | C++ Language |
| System.out.print(“Welcome To C# Corner”); | Java Language |
| Console.WritLine(“Welcome To C# Corner”); | C# language |

**Types of Programming Languages**

There are different types of programming languages available. We can see below.

- C
- C++
- Java
- C#
- Python
- Ruby

These are mainly using programming languages in current trends. We can use whichever language we feel is better. C, C++, Java and C# are having different syntax only but concept wise all are same. If we know any one language we can learn all languages easily.

The only exception I can think of is Prolog.

# Activity 1

In your own words, define a programming language.