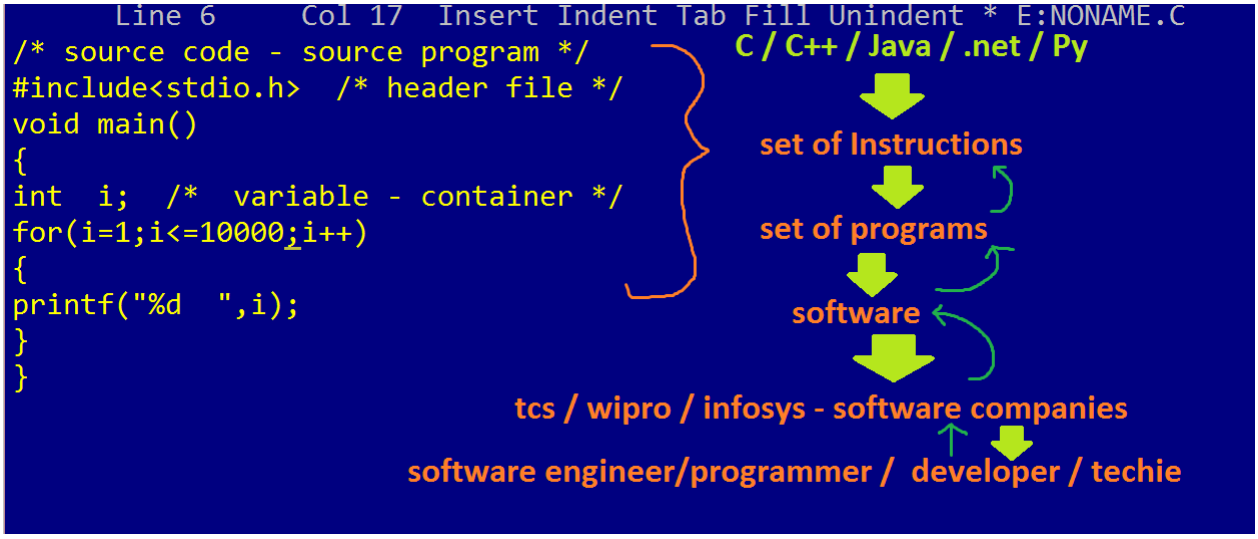
INTRODUCTION TO C

C is a

1. It is a high level / middle level programming language.

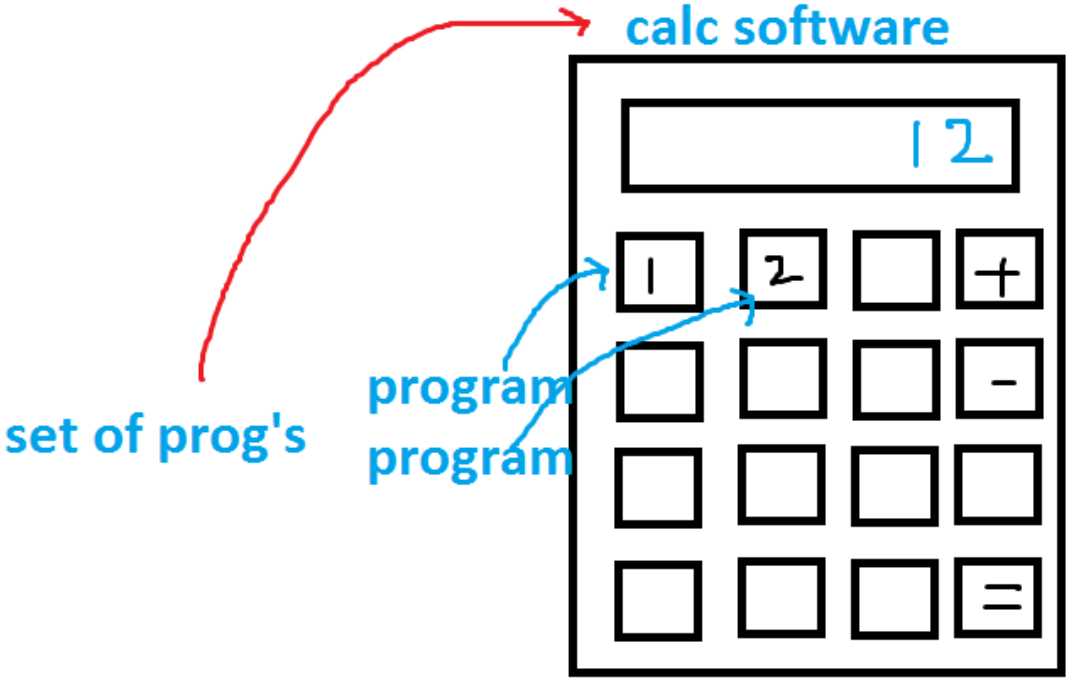


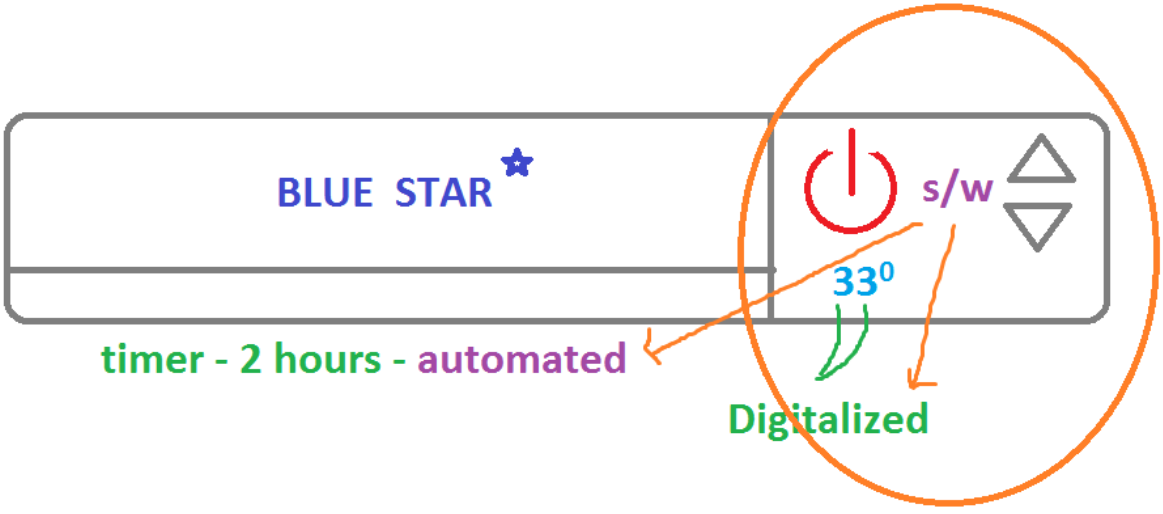
What is a program?

Set of instructions are called program

What is a software?

Set of programs is called software. As per IT Industry software is a digitalized and automated process.





We are having basically 2 type of software.

1. **System software:**

   Eg: os, device drivers, translators

2. **Application software**

   Eg: whatsapp, fb, insta,…

What is a language?

Generally the languages are used to communicate with others. For example the languages like telugu, English, hindi, Marathi etc are called human languages, which are used to communicate only with humans. But by using these languages we can't communicate with the machines. For that we are using the computer programming languages like C / C++ / java / Python / .net / Go / R language etc to create the programs [software]. These software making our work easy, faster and accurate.

Basically these languages are divided into 3 types.

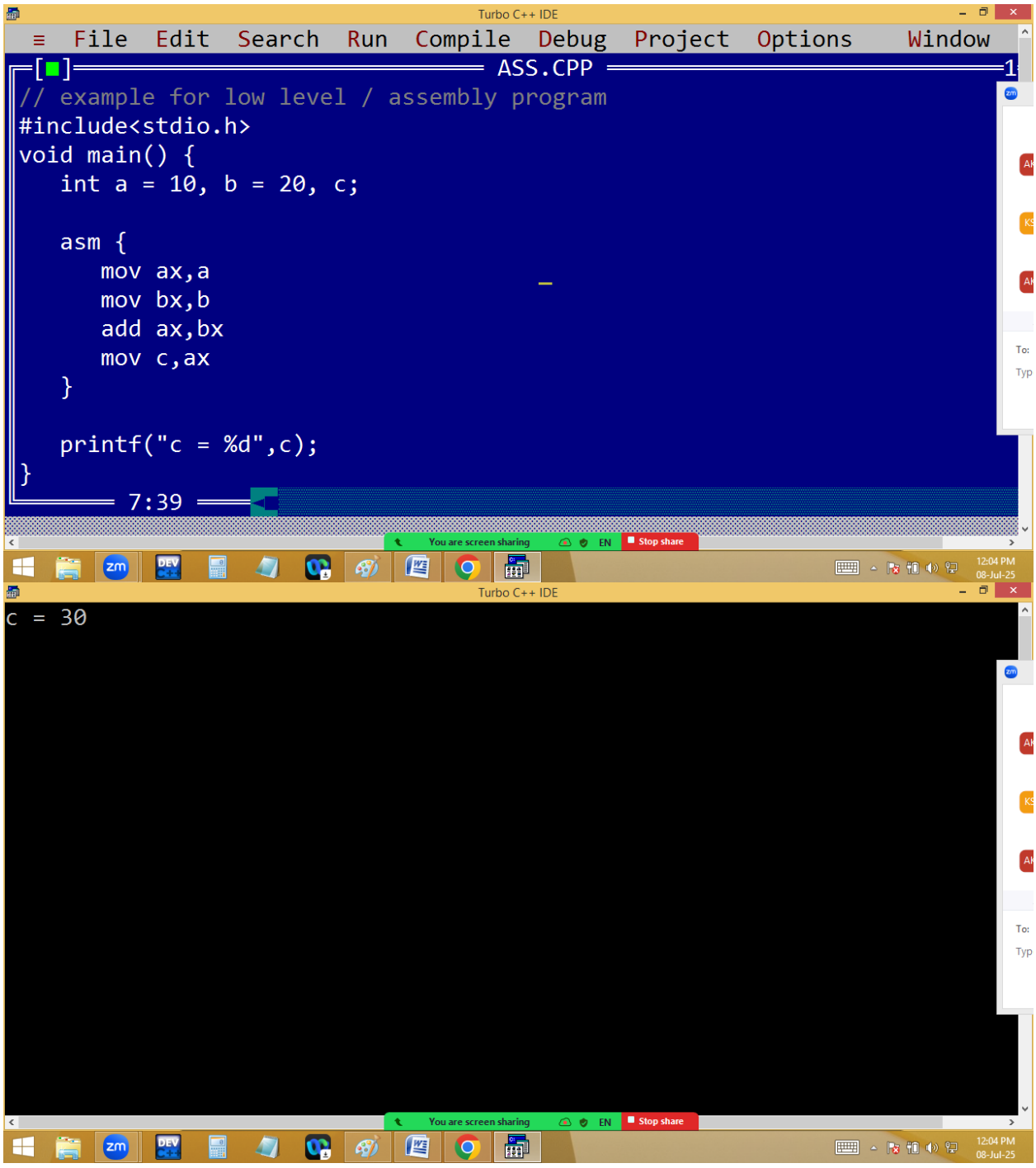
1. **Machine language: Created with binary code and very difficult to read by the user.**

   Eg: 10001111

2. **Low level / assembly language: Created with English like shortcuts called MNEMONICS.**

   Eg: add, sub,…

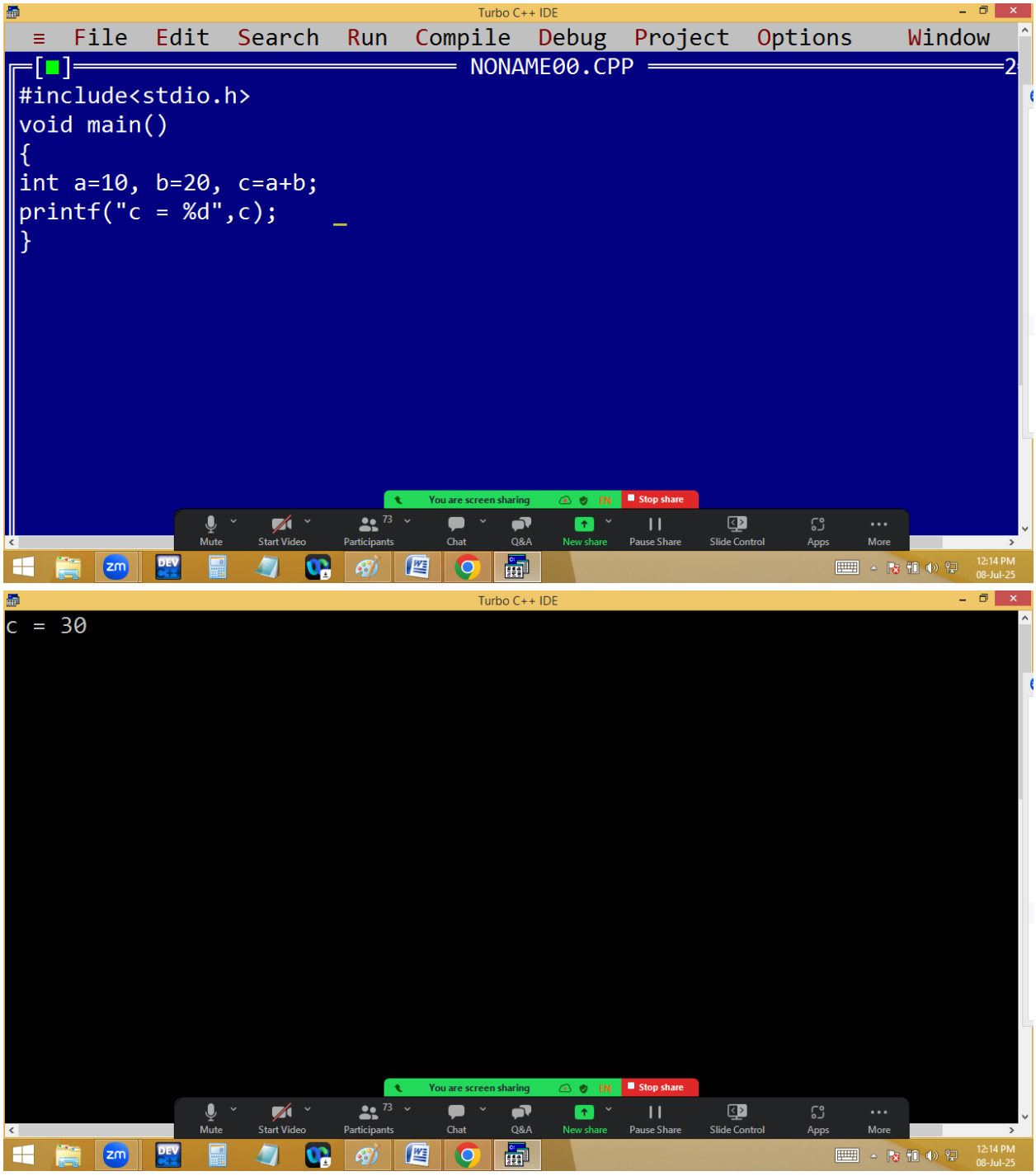
Example for assembly programming:



3.High level language: Created with simple English and easy to understand.

Eg: addition, subtraction,…

Example for high level program:



C is a high level language with low level features.

Hence it is a middle level language.

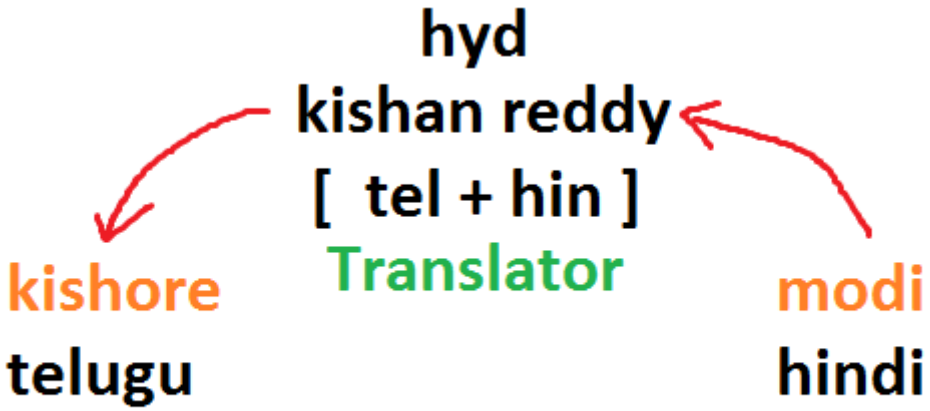
C low level features are used to design system software.

C high level features used to design application software.

Hence C is a Multi-Purpose programming language.

2. C is a compiler based programming language.

What is a translator?



Always the user given instructions are in English, which are called source code / source program. but the computer is not able to understand this English. To convert this English code to binary code

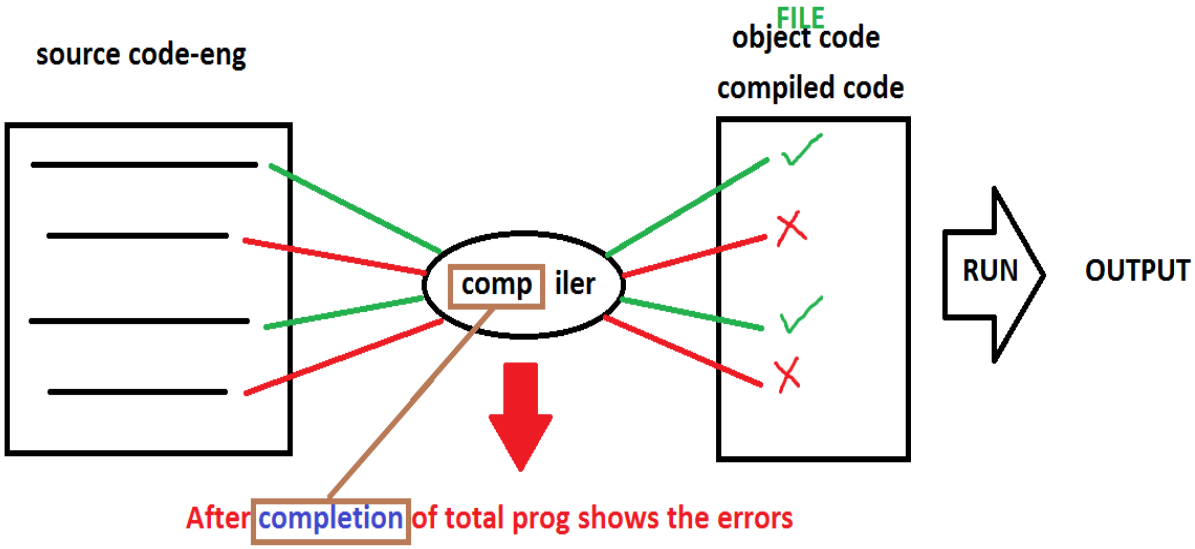
and to check the errors we are using the translators.

We are having 3 types of translators.

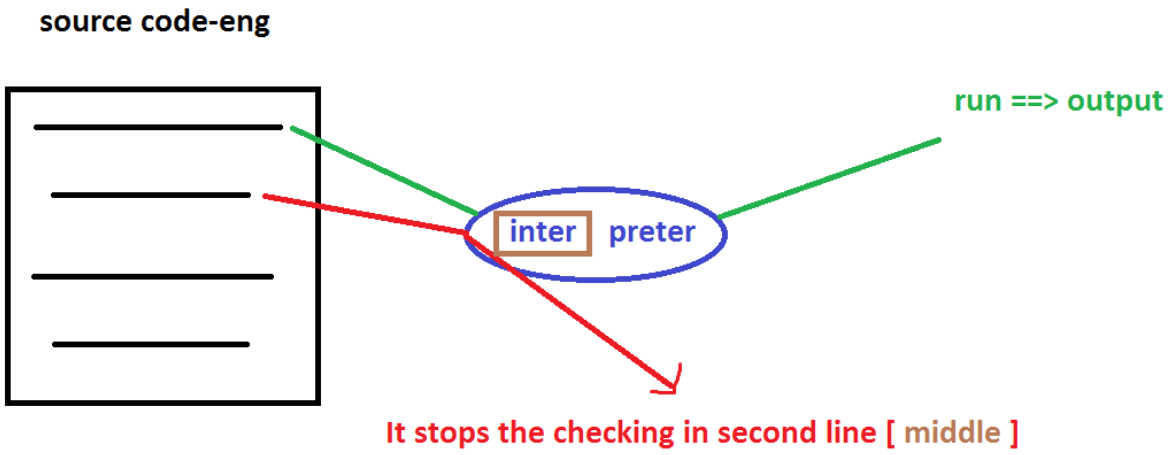
1. Compiler
2. Interpreter
3. Assembler

Compiler and interpreter both used to convert high level programs to binary code.

Compiler converts the total source code into binary code at once by leaving error lines.



Interpreter converts line by line.



Assembler is used to convert low level programs to binary code.

Assembler working style is similar to compiler.

In C & C++ we are using only the compilers. Hence they are called compiler based programming languages.

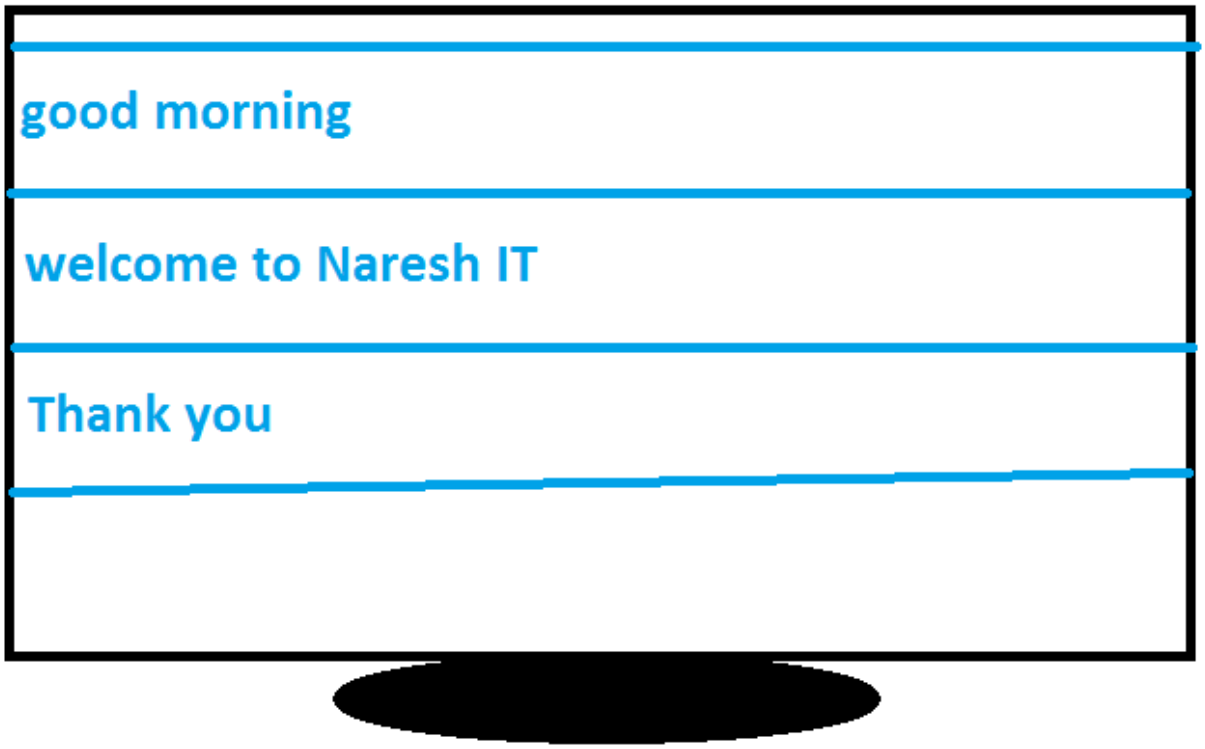
In java / .net / py etc we are using both compiler and interpreters. Hence they are called compiler based and interpreted languages.

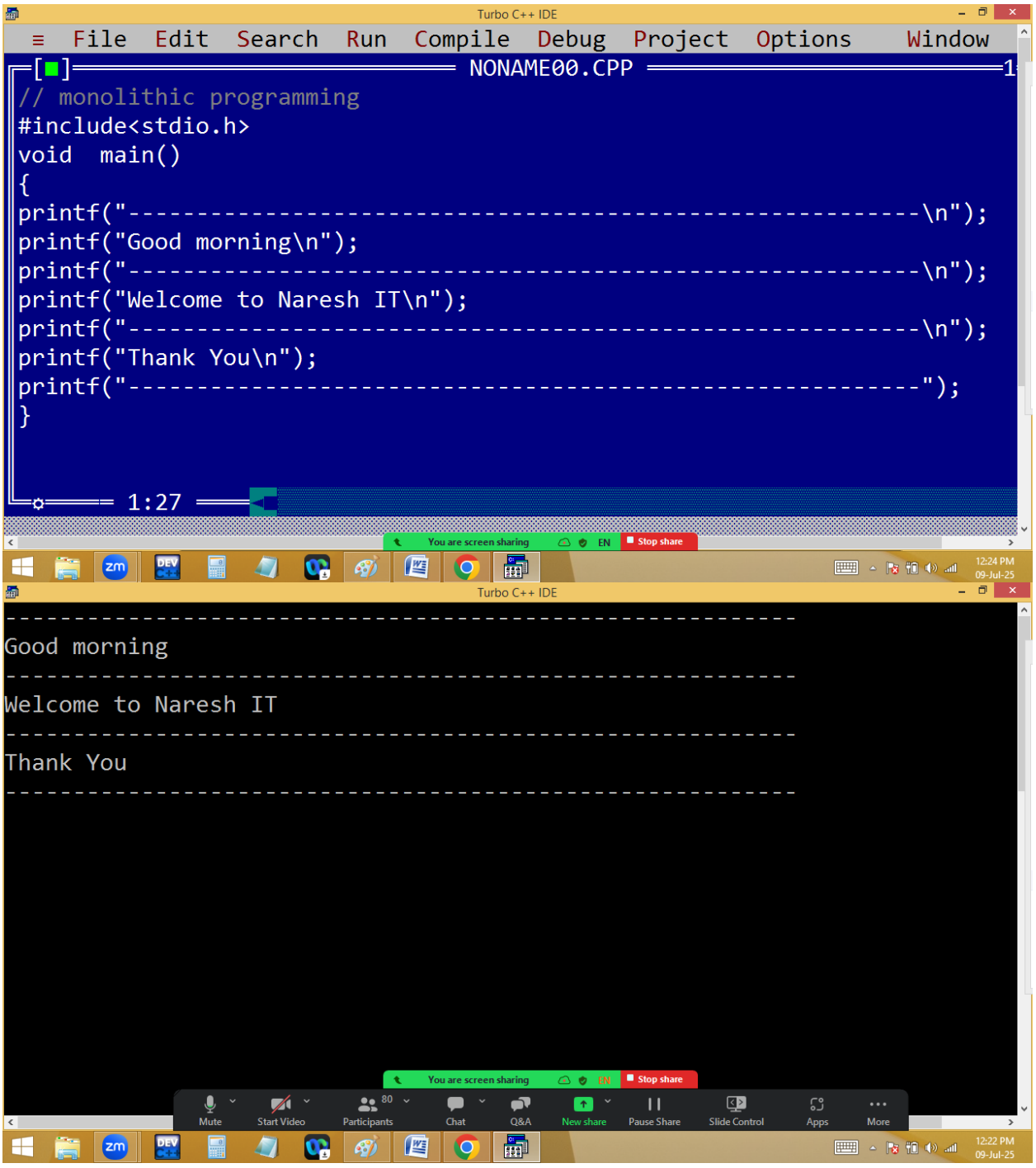
3. C is a procedure oriented programming language [POPs]

What is called programming paradigm?

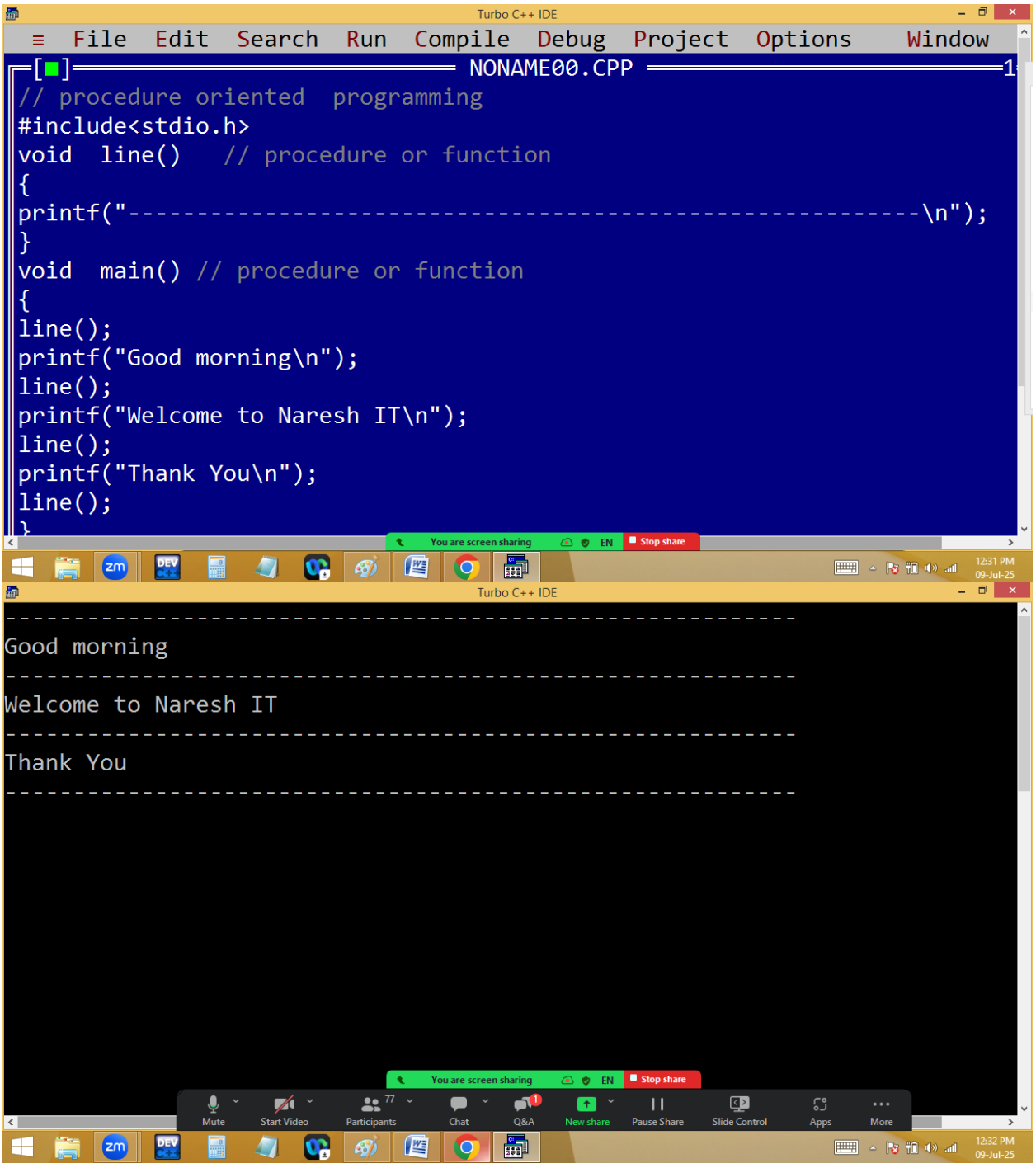
Every programming language comes with a particular syntax [rules and regulations] and a structure, which is technically called programming paradigm. To solve a problem, we should have to use that programming paradigm only.

Before C language the languages are using monolithic programming paradigm.





POPs – Procedure oriented programming structure:


Turbo C++ IDE
File Edit Search Run Compile Debug Project Options Window
NONAME00.CPP
// procedure oriented programming
#include<stdio.h>
void line() // procedure or function
{
printf("--\n");
}
void main() // procedure or function
{
line();
printf("Good morning\n");
line();
printf("Welcome to Naresh IT\n");
line();
printf("Thank You\n");
line();
}
You are screen sharing
EN
Stop share
12:31 PM
09-Jul-25
Turbo C++ IDE
Good morning
Welcome to Naresh IT
Thank You
You are screen sharing
EN
Stop share
Mute
Start Video
Participants
Chat
Q&A
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Slide Control
Apps
More
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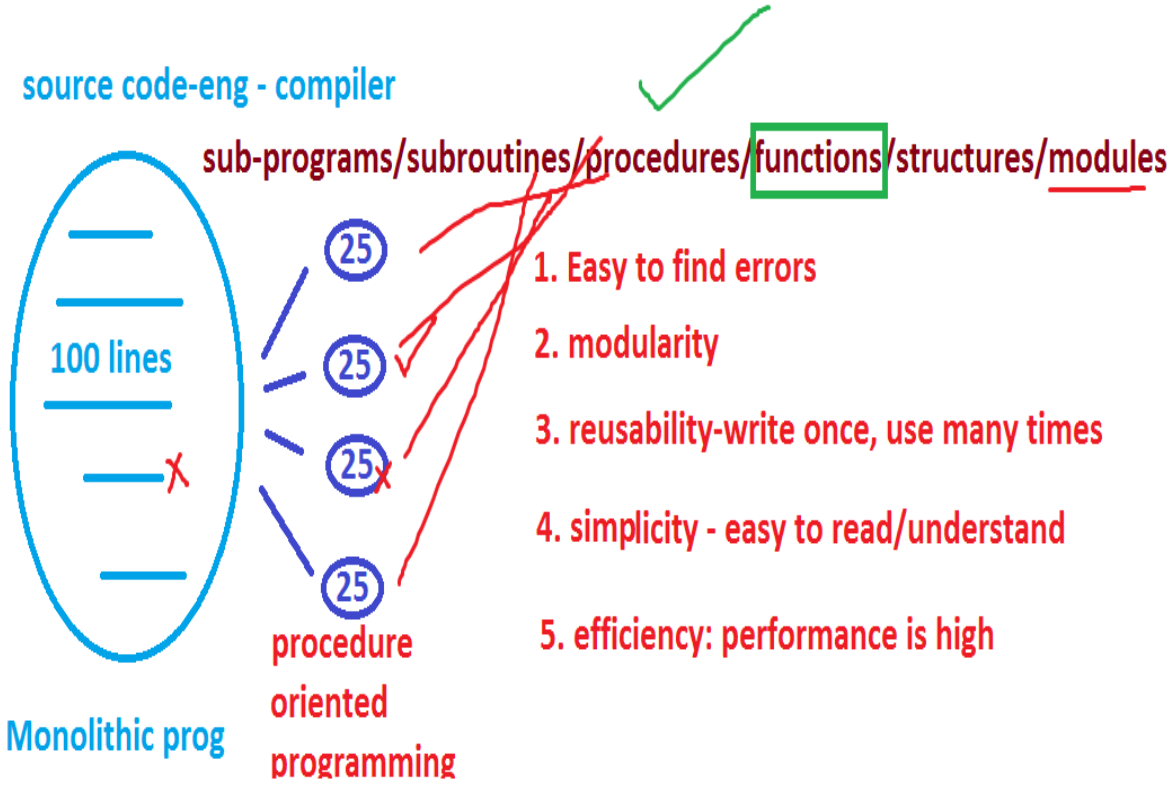


Basic language following monolithic programming.

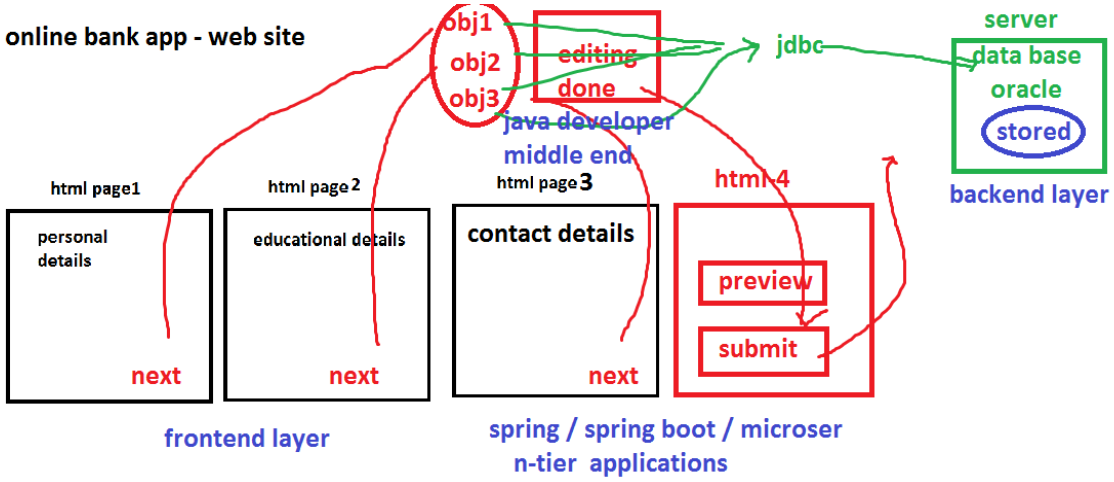
C is following procedure oriented programming structure [POPs]

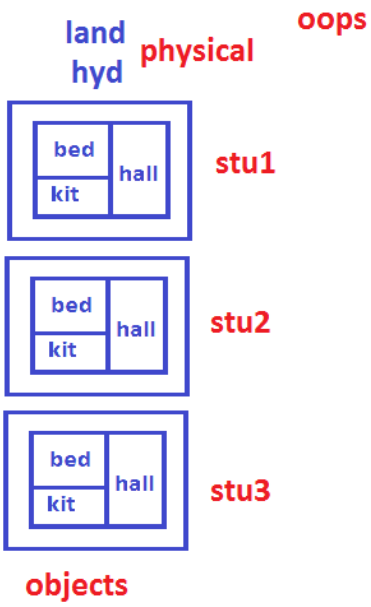
C++ and Python following POPs and OOPs. Hence they are called multi paradigm programming languages.

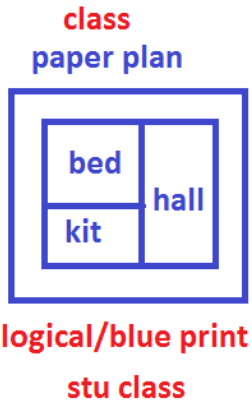
Java and .net are oops

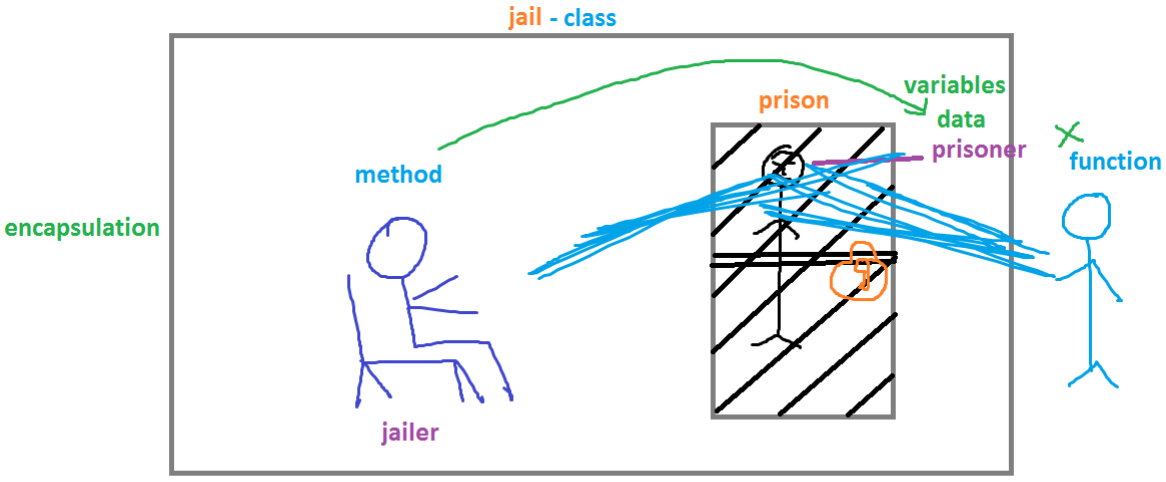
Object oriented programming structure [OOPs]:

1. Class
2. Object
3. Encapsulation
4. Inheritance
5. Polymorphism
6. Abstraction









Sum(int, int);

Sum(float, float);

Sum(int, float);

Sum(float, int);

Previous class video links:

- **Day 1:**

https://youtu.be/3rSQMvl6Ovs

- **Day 2:**

https://youtu.be/AI2W2f78wEc

- **Day 3:**

https://youtu.be/0bD3hU1wM9I