

C++ First week learning report

C++ Introduction:

C++ is one of the world's most popular programming languages.

C++ is a high-level, object-oriented programming language developed by Bjarne Stroustrup as an extension of the C language. It is widely used for creating high-performance applications, operating systems, game development, and more.

The language was updated 5 major times in 2011, 2014, 2017, 2020, and 2023 to C++11, C++14, C++17, C++20, and C++23.

Syntax:

```
#include <iostream>          // Header file definition of input output stream
using namespace std;         // all the standard library functions are defined
int main() {                  // main function
    cout << "Hello World!";   // print statement
    return 0;                 // ends the main function.
}
```

Differentiate between C & C++

C	C++
It is procedure oriented.	It is object oriented
It is a subset of C++.	It is a superset of C.
A C compiler can't compile C++ code.	A C++ compiler can compile C code.
Support only Macros not inline functions.	Supports both Macros and inline functions.
Can't use any OOP concept as polymorphism ,inheritance ,data hiding etc.	Uses all OOP concepts.
Uses top down approach as it is procedure oriented.	Uses bottom up approach as it is object oriented.
Is less secure than C++.	Implements data hiding by using access specifiers such as public, private and protected making the code more secure.

Courtesy:-www.ashkash247.blogspot.com

Extra points in C:

Function driven, Can not use functions inside structures, Data is not secured, Main () need not return any value.

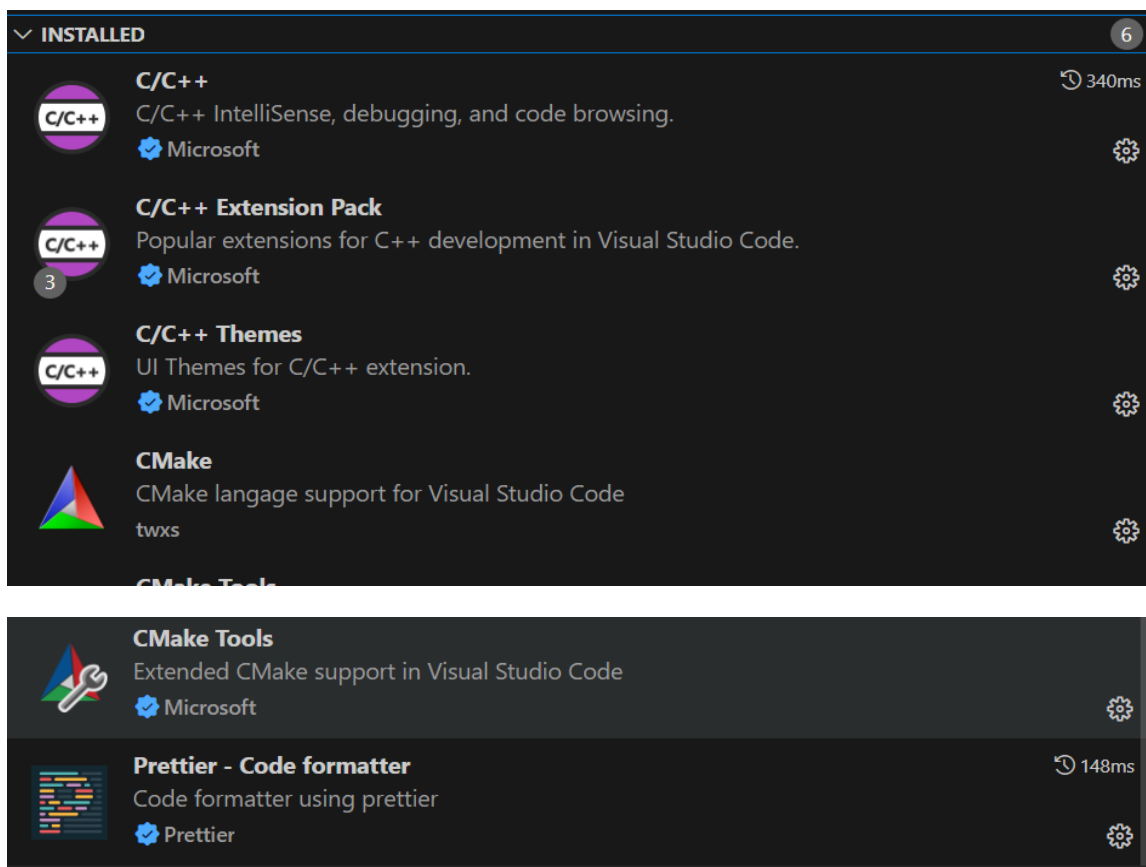
In C++:

Object driven, Can use functions inside structures, Datab is hidden(secured), Main () should return a value.

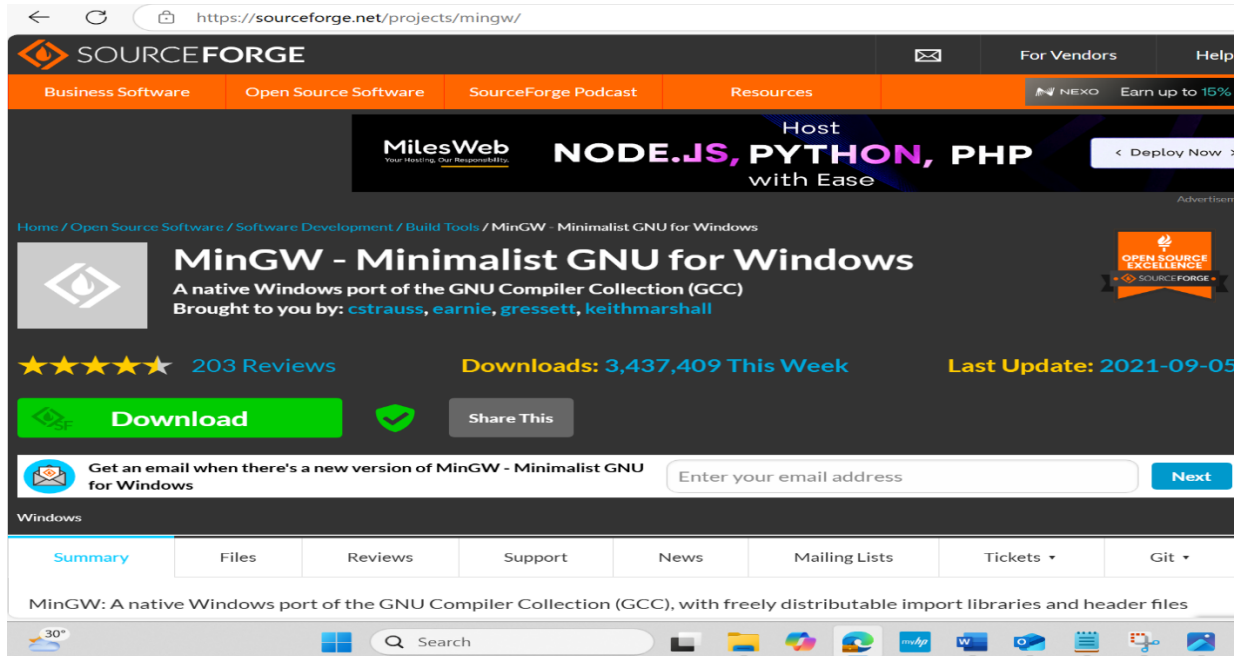
Installation process:

1. Visual studio code: Visual Studio Code - Code Editing. Redefined (Once you installed Visual studio code .)

2. After, You should Install these extensions.



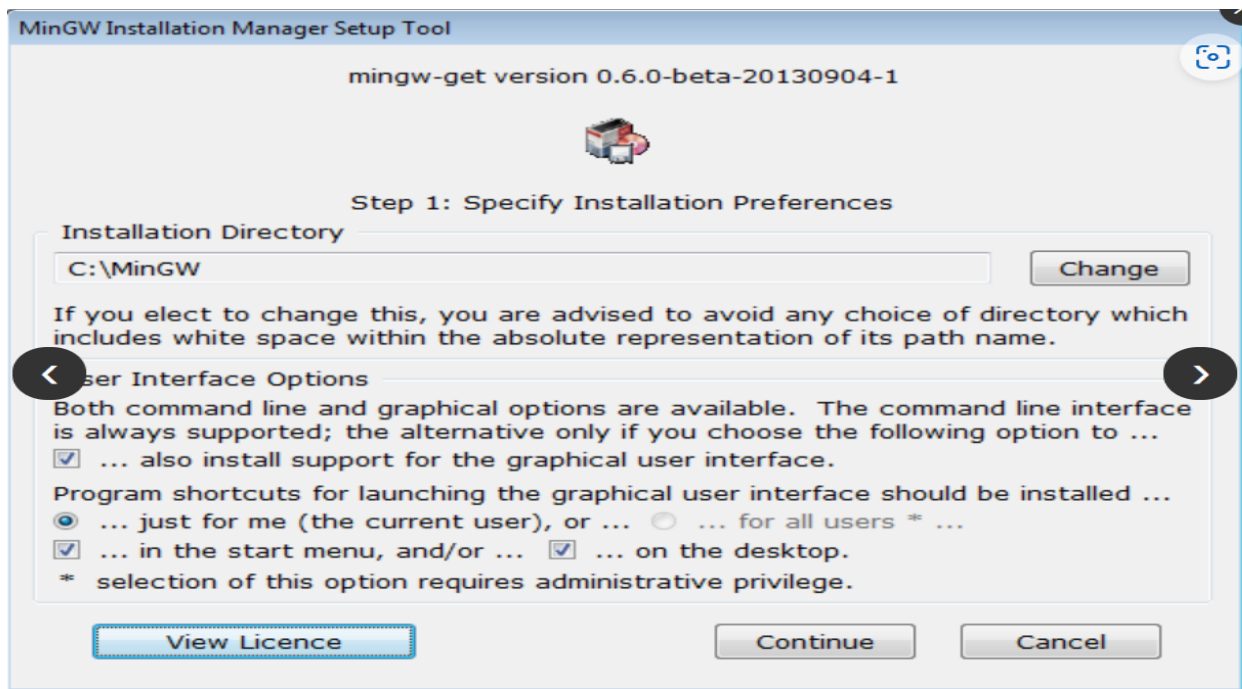
3. Setup Min GW : [MinGW - Minimalist GNU for Windows download | SourceForge.net](https://sourceforge.net/projects/mingw/)



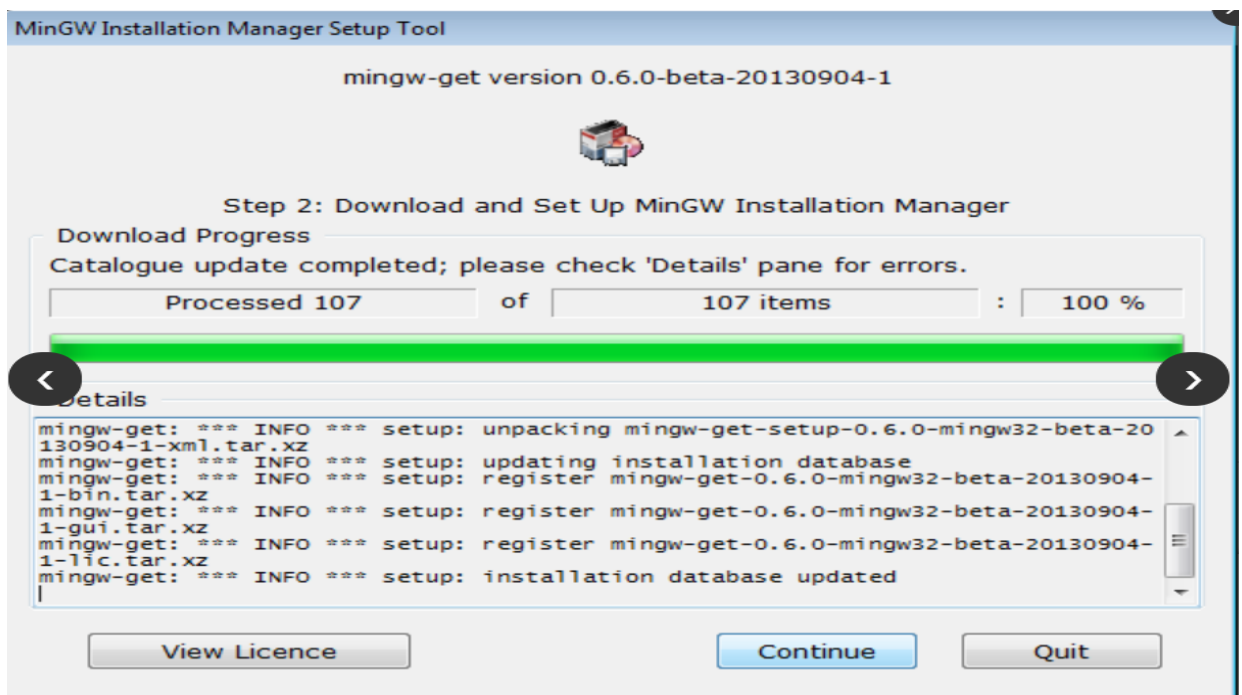
Once you Installed MinGW Follow these steps



Installer Setup -- Opening Dialogue

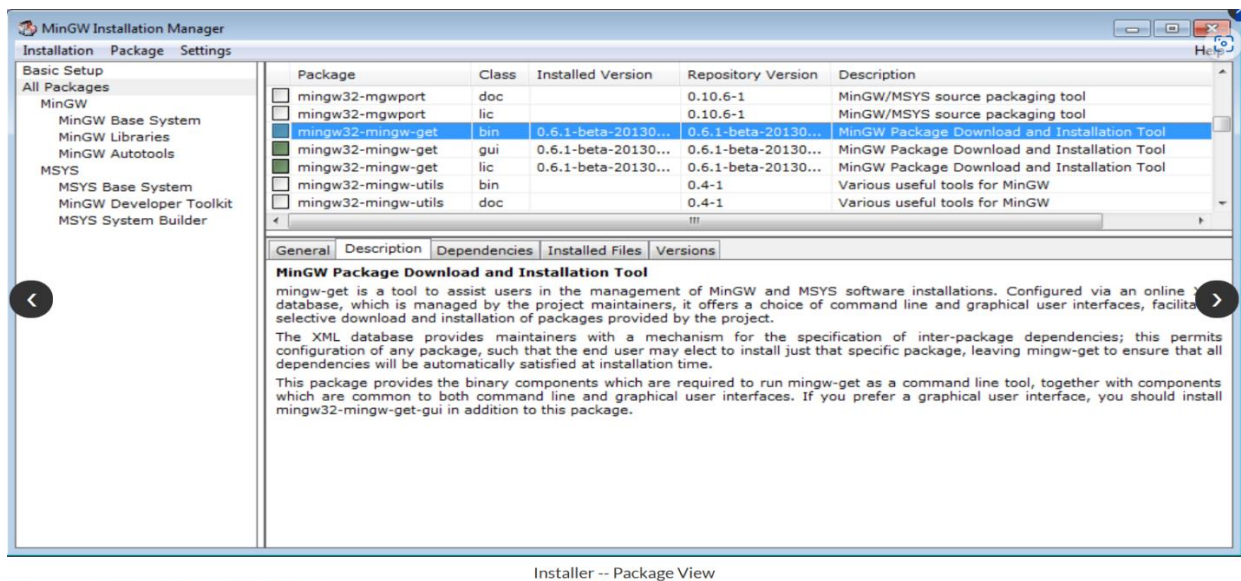


Installer Setup -- Preferences Dialogue



Installer Setup -- Download Dialogue

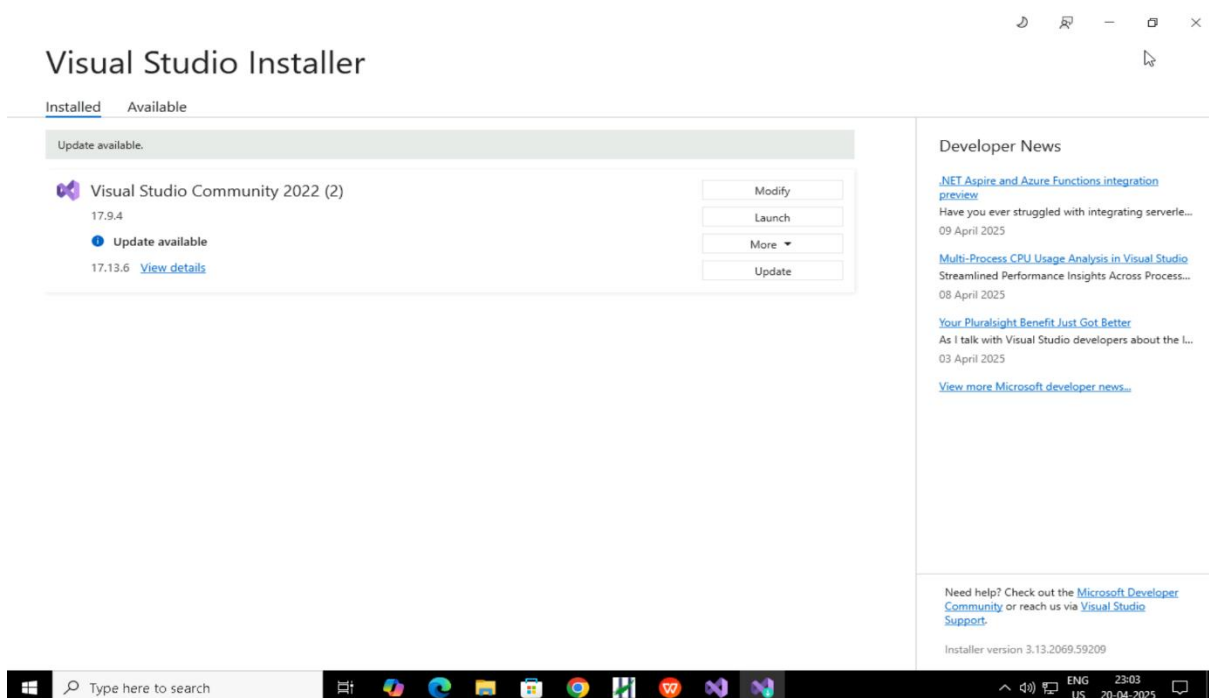
Select some packages

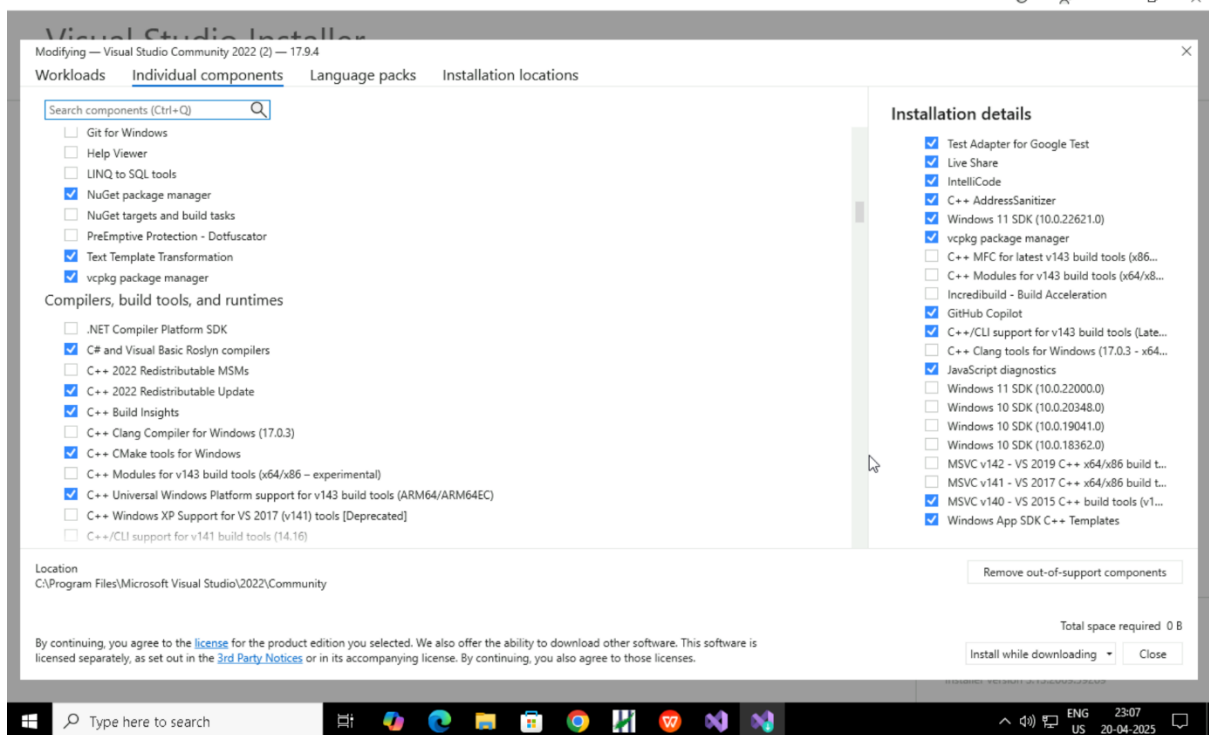
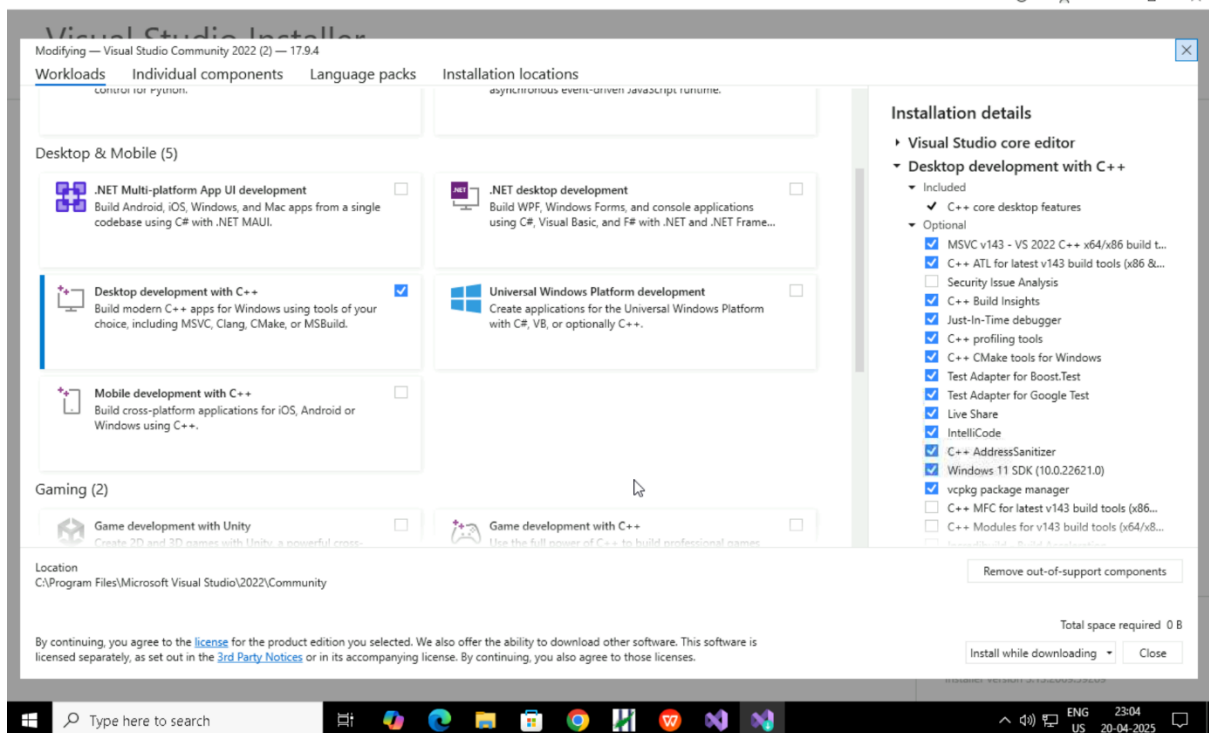


4. Microsoft visual studio installer 2022 (.exe file):

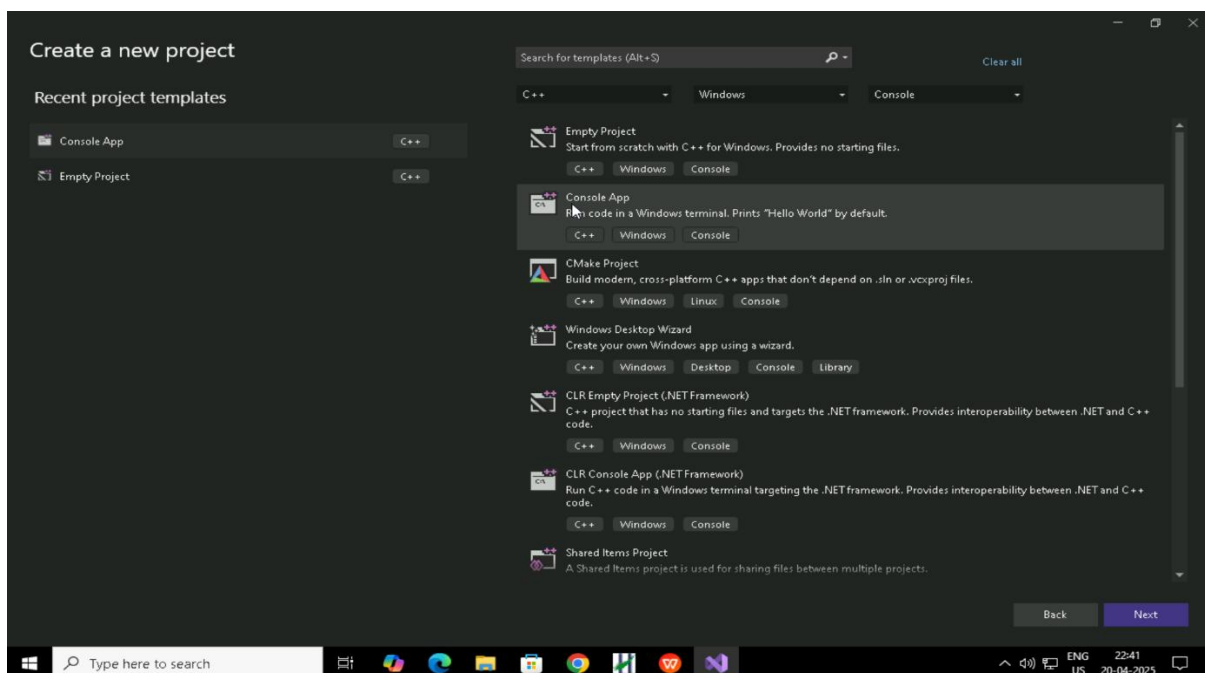
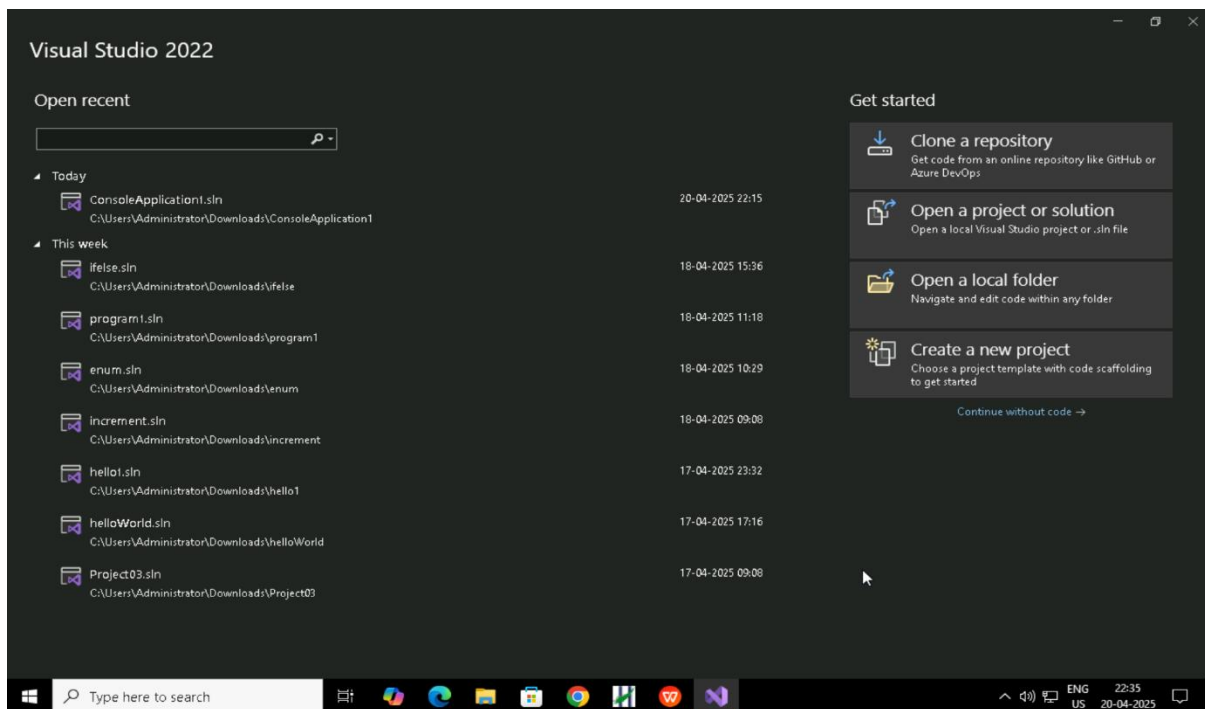
Download Visual Studio Tools - Install Free for Windows, Mac, Linux

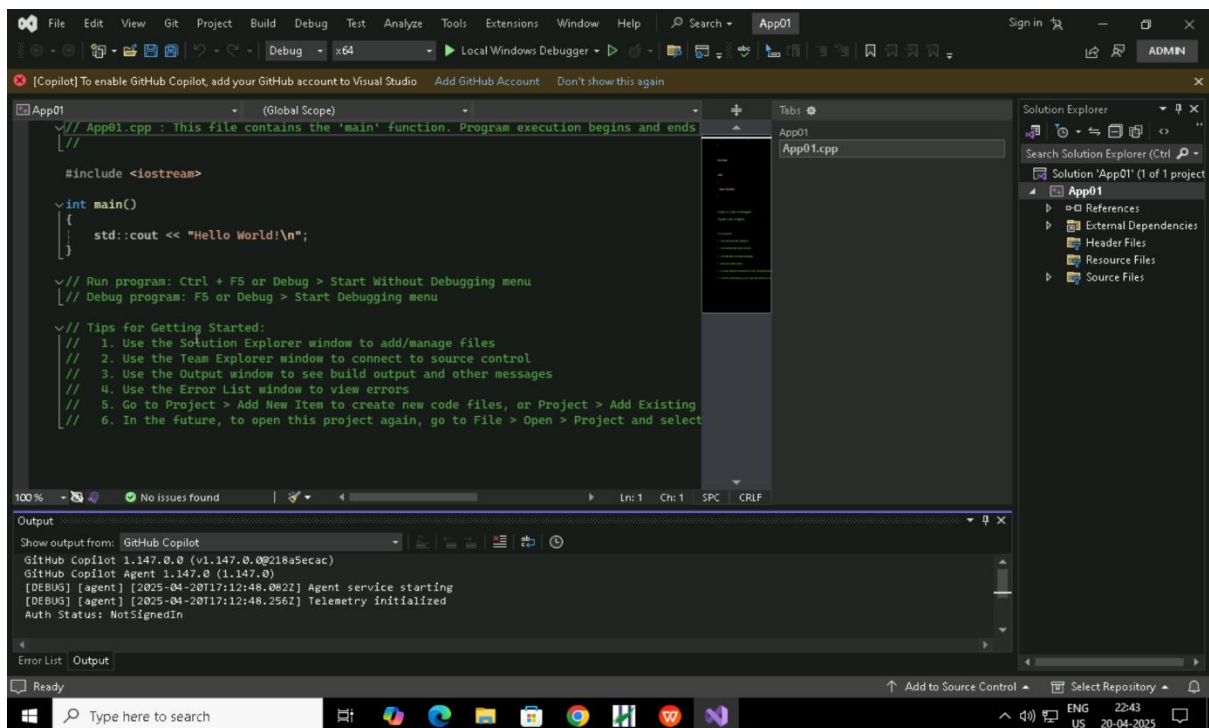
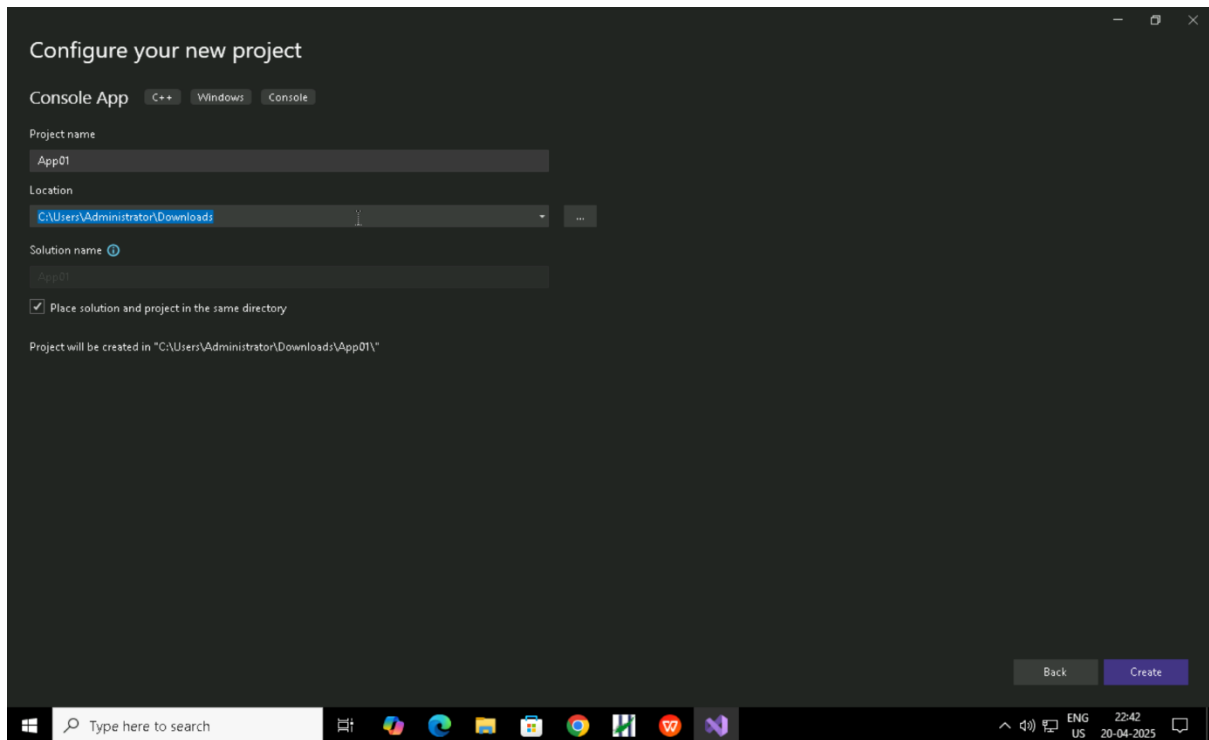
Installed Microsoft visual studio -> Modify -> Workloads : Select (Desktop development with C++) -> Go to Installation details -> Select some features -> Go to individual components -> Select some components for C++ -> Click Install while downloading -> installation Completed.





How to create project in Microsoft visual studio: Open Microsoft visual studio 2022 -> click create a new project -> choose Language(C++) -> Select Console app or Empty project template (Next)-> create project name Location -> file created.





Creating files:

- .bin - .exe file
- .inc - .h (header file)
- .obj - .o , .obj file
- .scripts - .mac, .cmac file
- .src - .c, .c++
- .lib - .lib, .so, .exe, .a

Methods:

Main -> src

-> inc

-> lib

-> bin -> app.exe

For example:

Add -> **inc** -> filename.h

-> **src** -> filename.cpp

Sub -> **inc** -> filename.h

-> **src** -> filename.cpp

