week 0_1:

onboarding

rajin teaches programming

In these sessions, we'll cover everything you need to get started with C programming. We'll introduce you to essential tools like **Visual Studio Code (VSCode)** and a **C compiler**, and guide you through setting up your **development environment.**

UNDERSTANDING TOOLS:

– Integrated Development Environment (IDE):

An **IDE** is a software application that provides comprehensive facilities to programmers for software development.
It includes features like **code editor**, **debugger**, **compiler**, and build automation tools.
Why VSCode? V**isual Studio Code** is one of the most popular and feature-rich IDEs available, offering robust functionality, extensive extensions, and cross-platform support.

– Compiler:

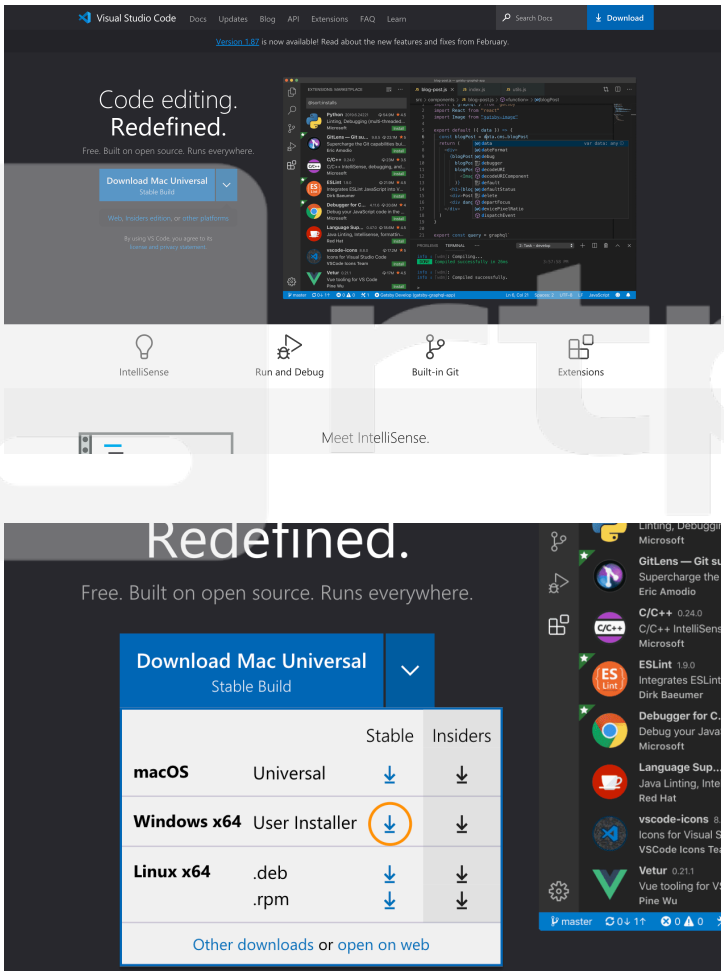
A **compiler** translates the **source code** written in a high-level programming language (like C) into **machine code** that the computer can understand and execute.
It checks for syntax errors and generates **executable files.**
For C programming, a compiler is essential for converting C source code into executable programs.

GETTING STARTED:

- Installing VSCode on Windows:

- Download link: *https://code.visualstudio.com/*

Download the installer from the provided link. Double click the downloaded file to initialize the installation process. Follow the on screen instructions to complete installation.



Make sure to install the Stable build.

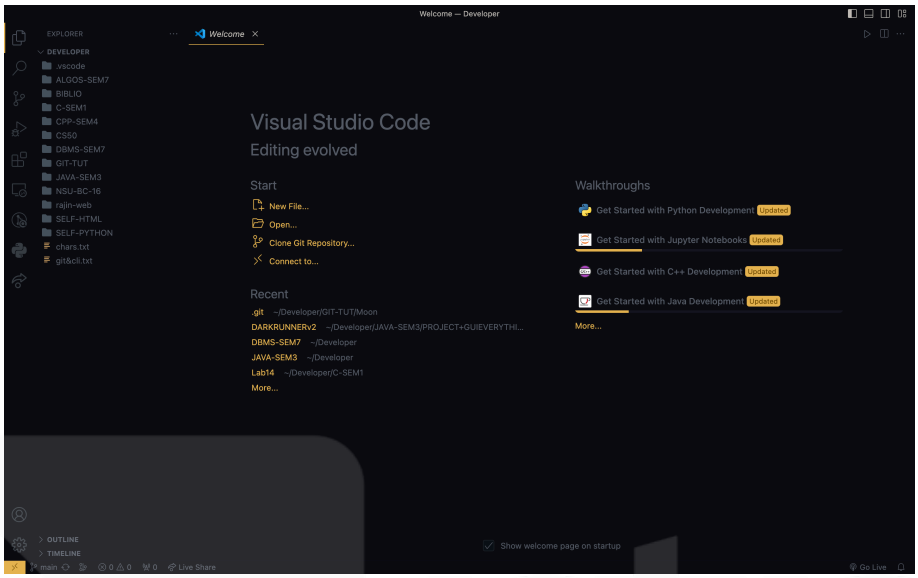
For further information on how to setup specifics, refer to this video: *https://youtu.be/nrbBmoINqtk?si=ANTtThHF7D2XCjN2*

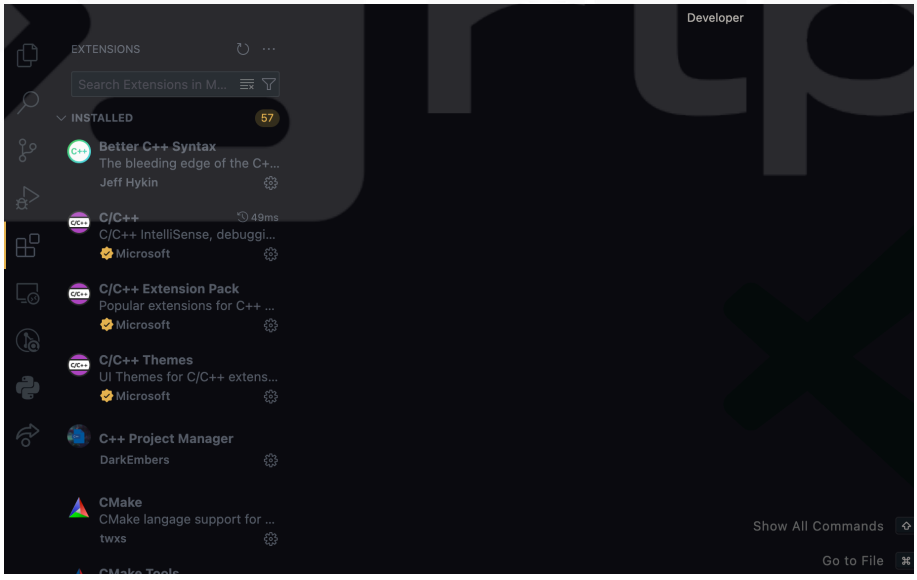
I will clarify further in class and help you set up your environment.

– Installing Extensions in VSCode:

Extensions enhance the functionality of VSCode, adding features tailored to specific programming languages and workflows.

First off, let’s open up VSCode:





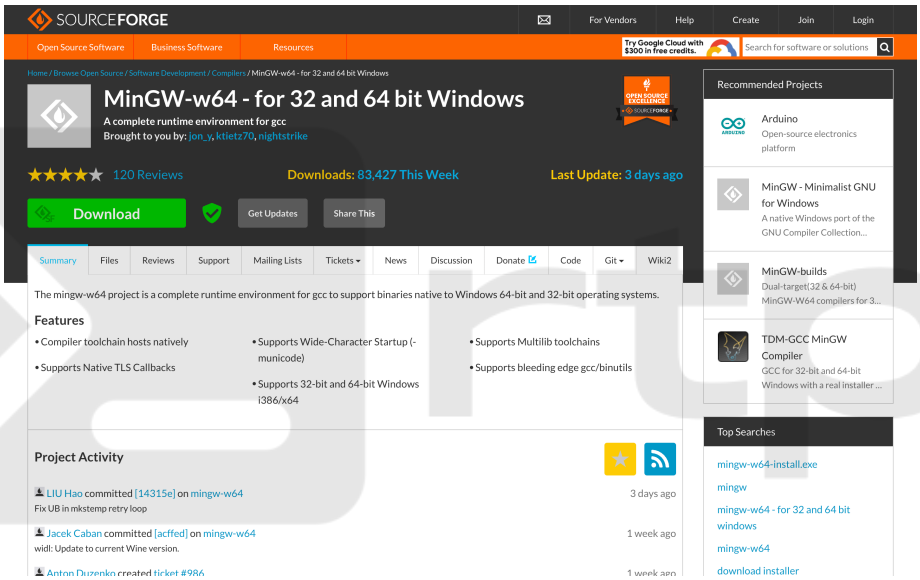
It may not look exactly the same, but that’s alright. Look at the icons from the **left sidebar**, and find the **Extensions Tab.** You may also press Ctrl+Shift+X.

Search for your desired Extension in the **search bar**, and click on the “install” button for extensions you wish to install.

I will help you install the relevant extensions in class.

– Installing a Compiler (GCC) on Windows:

– Download link: *https://sourceforge.net/projects/mingw-w64/*



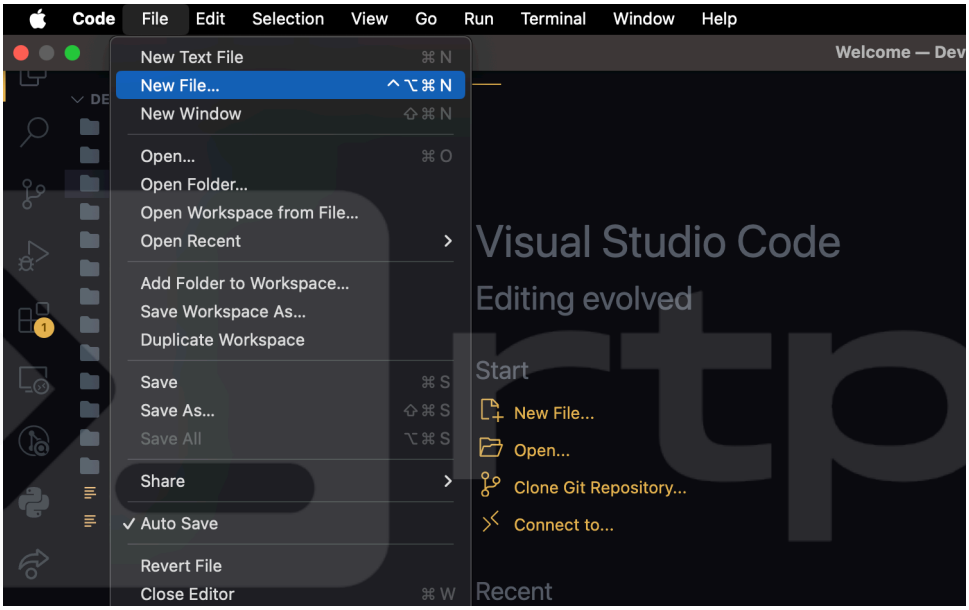
Download the installer from the provided link. Run it and follow the installation wizard. During installation, select "Architecture" (32-bit or 64-bit) and "Threads" (posix or win32). Make sure to copy the path it’s installing to. Then, add the `bin` directory of MinGW to your system's PATH environment variable. I will configure this for you.

WRITING YOUR FIRST PROGRAM:

– The “Hello World” Program:

Almost as a rite of passage. it is very common to write a program that outputs “hello world” whenever you start learning a new language.

Open VSCode and create a new file by clicking on "File" > "New File".



Save the file with a `.c` extension (e.g., `helloworld.c`).

Then, type the following into your code editor.

helloworld.c

```c
#include<stdio.h>

int main() {

    printf("Hello world!\n”);

    return 0;
}
```

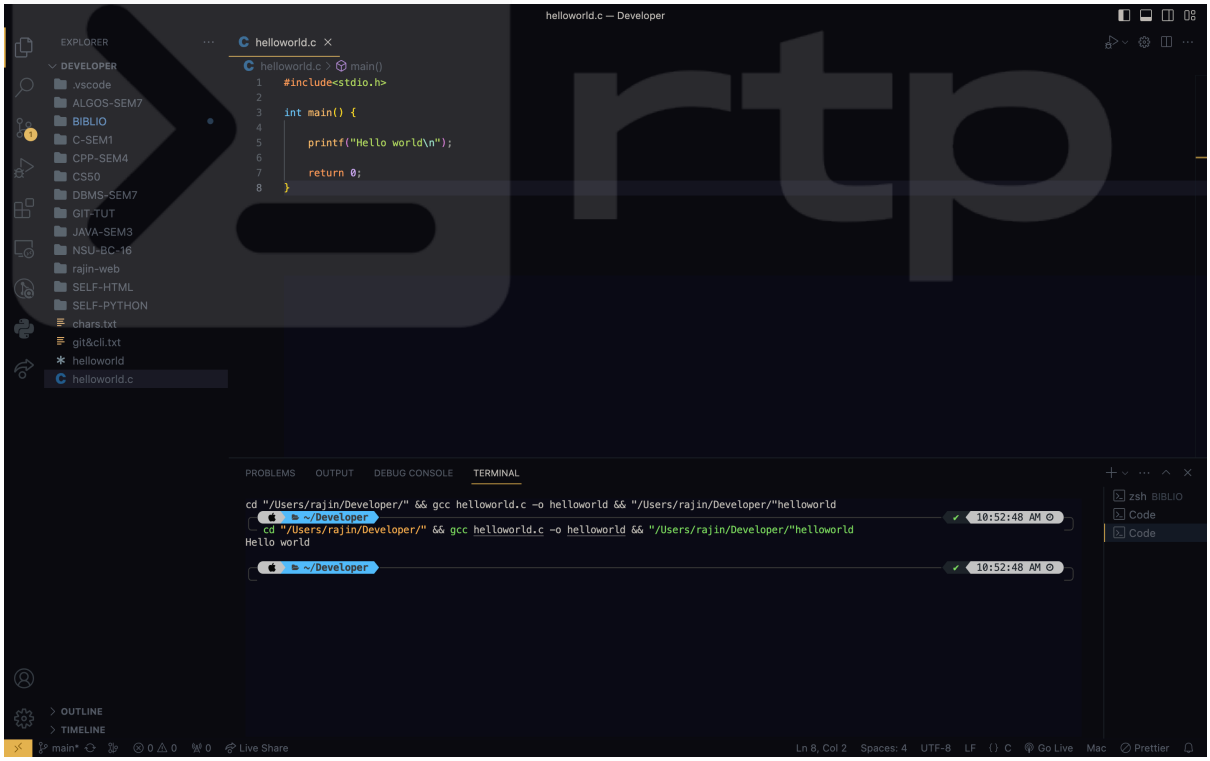
Run the program using the Code Runner extension I have already installed for you. To do so, right click anywhere on the editor and click on “Run Code”, or press Ctrl+Alt+N.

You will get the following output:

helloworld.c

```
Hello world!
```

In your editor, it will look something like this, provided I have set up your environment.



By following these steps, you've set up your development environment, written your first C program, and executed it using Visual Studio Code and the Code Runner extension. You're now ready to dive into the world of C programming!

next class 0_2:

git & GitHub

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