Introduction to CodeBlocks

CodeBlocks is a free and open-source integrated development environment (IDE) used for programming in languages like C, C++, and Fortran. It offers a user-friendly interface, a code editor with features like syntax highlighting and code completion, and supports various compilers and build systems. The IDE integrates debugging tools, facilitates project management, and allows for customization through a plugin system. It's popular for its versatility and cross-platform compatibility.

You can install CodeBlocks in your laptop or desktop following this YouTube Video: https://youtu.be/zIhhO2DcW2s?si=3r7iV-KjAZ18PSWt

Follow these steps to create, write, save, build, and run a "Hello World!" program in C using Code::Blocks.

- **Open Code::Blocks:** Start by opening Code::Blocks on your computer.
- **Create a New Empty File:** Go to "File" > "New" > "Empty file".
- **Write the Source Code:** Write the "Hello, World!" program in the empty file:

    ```c
    #include <stdio.h>

    int main() {

        printf("Hello World!\n");

        return 0;

    }
    ```

- **Save the File with .c Extension:** Go to "File" > "Save as...". Enter the file name as "MyFirstProgram.c". Click "Save".
- **Build and Run:** Click on the "Build and Run" toolbar button or go to "Build" > "Build and run".
- **View Output:** The output ("Hello World!") will be displayed in the terminal or console within the Code::Blocks interface.

Explanation:

- **Header File:** A header file in programming contains declarations of functions, variables, and other elements that are used in a program."stdio.h" is a specific standard header file in C programming. The "stdio" stands for "standard input/output," and this header file provides declarations for input/output operations, like reading from the keyboard or printing to the screen, using functions such as printf and scanf. Including "stdio.h" in a C program allows the use of these functions, making input and output operations more

efficient and standardized. We need to include a header file in a program before using the elements declared in it.

- **int main() :** The int main() is a function which is like the starting point of a computer program. It's where the program begins its journey, like the first step in a recipe. This function can also give a little report at the end by returning a special number back **(return 0)** - 0 usually means everything went smoothly (like saying "All done!"), and any other number indicates something didn't quite work as expected (like a little oopsie). It helps the computer understand if the program finished well or if there was any problem along the way.
- **printf() :** The printf function in C is used to print formatted output to the terminal or console.
- **Build and Run:** "Build and run" in Code::Blocks is like pressing a play button. It checks your code for mistakes and then runs it. If there are errors, it tells you what's wrong so you can fix it. If everything's good, it shows you the result of your program, like displaying "Hello, World!" if that's what you programmed it to do. It's a way to make sure your program works the way you want before sharing it or using it.