Installing and using C for Windows

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1 Using CODE::BLOCKS, WinSCP and GitBash

1.1 Installing CODE::BLOCKS

   Link to Code Blocks Home
   http://www.codeblocks.org/home
1.1.1 Go To downloads

![Code::Blocks IDE](#)

**Figure 1:** Download is located in the red box

1.1.2 Click: Download the binary release

![Code::Blocks Downloads](#)

**Figure 2:** Download is located in the red box
1.1.3 Download Newest Version with Complier

Note: Version with complier has "mingw" in file name

Figure 3: Download is located in the red box

1.1.4 Open the download file

Note: Download should start automatically after 5 seconds

Figure 4: File is located in the red box
1.1.5 Run the installer

Click "Next >"

Figure 5: Next > is located in the red box
Read the License Agreement and Agree to proceed with installation

![License Agreement Image]

**Figure 6:** "I Agree" is located in the red box
Leave defaults (do not uncheck anything) and press "Next >"

Figure 7: "Next >" is located in the red box
Click "Install" to use default folder to install to
You can change the folder by clicking "Browse..." (Not recommend)

![Code::Blocks Installation](image)

**Figure 8:** "Install" is located in the red box
Click "Yes" to open Code::Blocks

Figure 9: "Yes" is located in the red box
Click "Finish" to close the installer

**Figure 10:** "Finish" is located in the red box
1.1.6 Running Code::Blocks and Testing Hello World

**Warning:** If you get the following pop-up message:

Can’t find compiler executable in your configured search path’s for GNU GCC Compiler

![Figure 11: Error Pop-up is located in the red box](image)

Please refer to Section 2.1.1 to fix this.
The following is a tutorial for a quick program to confirm the compiler and familiarize the reader with Code::Blocks

1) **Creating a new project**
   On the top left corner click "File". Click "New". Click "Project..."

![Image](image.png)

**Figure 12:** Green Boxes denotes "File" and "New". Red denotes "Project..."
2) Choosing Console application

Click "Console application"

![Console application selection](image)

TIP: Try right-clicking an item

1. Select a wizard type first on the left
2. Select a specific wizard from the main window (filter by categories if needed)
3. Press Go

**Figure 13:** Red Box denotes "Console Application"
3) **Removing Welcoming pop-up**

Check off "Skip This page next time"

Click "Next"

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**Figure 14:** Red Box denotes "Skip This page next time". Green Box denotes "Next"
4) Picking C Language
Click on the "C" choice
Click "Next"

**Figure 15:** Red Box denotes "C". Green Box denotes "Next"
5) Configuring Project Settings

Fill the "Project title:" with the name of the project.
Under "Folder to create project in:" Click "..." and select the folder you want to work in
**WARNING: DO NOT EDIT THE OTHER 2 BOXES!!** Those 2 boxes should change automatically
Click "Next >"

![Console application window with fields for Project title and Folder to create project in](image)

**Figure 16:** Green Box denotes "Project Title". Red Box denotes "..."
Figure 17: Red Box denotes "Next"
6) Check Compiler
By default the "GNU GCC Compiler" should be selected for "Compiler". If it is not selected, select it.
Click "Finish"

![Console application]

Figure 18: Green Box denotes "Compiler". Red Box denotes "Finish"
7) Opening main.c
On the left side, there is a management view. Click "Projects"
Note: If it opens on the "Symbols" tab, click the left arrow next to "Symbols" tab to make the "Projects" tab visible.
On the "Project" view open the blue "Sources" folder. Double-click "main.c" to open it

![Image showing the process of opening main.c]

**Figure 19:** Yellow Box denotes "Projects". Red Box denotes "main.c"
Figure 20: View of Code::Blocks with "main.c" open
8) Compiling & Executing (building & running)
On the first row of icons, click the "Build and run" icon. (Yellow gear WITH green arrow)

Figure 21: Red Box denotes "Build and run" button
9) **Check if the program works** A terminal (black box) should have appeared after pressing the "Build and run" button. If the text is similar/identical to the one shown below, the execute was successful and Code::Block is setup now.

![Terminal Box that should appear](image)

**Figure 22:** Terminal Box that should appear
1.2 Installing WinSCP

WinSCP is a Windows application that allows files transfer between different computers through the Internet. All programs/assignments must compile and run successfully on the Thunder System (CISE computers).

We will be using WinSCP to move your files between your computer and your account on the Thunder System. You WILL NOT use WinSCP to compile and run, WinSCP only can transfer files.

Link to WinSCP - Downloads
https://winscp.net/eng/download.php

1.2.1 Download the newest version

Click "Installation Package"

![WinSCP Downloads](https://winscp.net/eng/download.php)

**Figure 23:** "Installation Package" is located in the red box
1.2.2 Open the download file

Note: Download should start automatically

**Figure 24:** File is located in the red box
1.2.3 Run the installer

1) Accepting License Agreement
Read the License Agreement and click "Accept >" to proceed

Figure 25: Red box denotes "Accept >"
2) Setup Type
Make sure "Typical Installation" is selected
Click "Next >"

Figure 26: Green box denotes "Typical Installation". Red box denotes "Next >"
3) **Initial User Settings**
Make sure "Commander" is selected
Click "Next >"

![Setup - WinSCP](image)

**Figure 27:** Green box denotes "Commander". Red box denotes "Next >"
4) Finalizing Install
Click "Install"

Figure 28: Red box denotes "Install"
5) Closing Setup
Click "Finish"

Figure 29: Red box denotes "Finish"
1.2.4 Logging into CISE Machines with WinSCP

The following screens should appear. You will need to have created a CISE account to continue.
Under "Host name:" enter: thunder.cise.ufl.edu
Under "Port number:" enter: 22
Under "User name:" enter your CISE account username
Under "Password:" enter your CISE account password
Click "Login"

Figure 30: "Login" is located in the red box
Click "Yes" to continue

![Warning dialog]

**Figure 31:** "Yes" is located in the red box
Click "Continue"

Figure 32: “Continue” is located in the red box
1.2.5 Using WinSCP

You should now be viewing WinSCP in it's Commander view. The window will be divided in half. The left half shows the folders on the physical computer you are using WinSCP on. The right half shows the folder of the computer you connected to, which in this case is your CISE account on the Thunder System. All you have to do is Click and drag a file from one half to the other.

Note: There is a drop down menu that lets you change the folder you are viewing. You can also change folders by double clicking on it if it is visible.

Locate the "main.c" that was created in Code::Blocks and move it over to the CISE Thunder System.

![Image of WinSCP interface with file location highlighted](image)

**Figure 33:** Red box denotes folder location you are viewing
1.3 Installing GitBash

GitBash (Git Bash) is a port of a Linux style environment and command line tools. This means we will use Linux Commands on Windows. As stated previously, WinSCP only allows for file transfer. We will use Git Bash to connect to the Thunder System and compile and run your programs on the Thunder System from the comfort of your own computer.

Link to GitBash - Downloads
https://www.git-scm.com/downloads

1.3.1 Download the Windows version

Click "Windows"

![Figure 34: "Windows" is located in the red box](Image)
1.3.2 Open the download file

Note: Download should start automatically

Figure 35: File is located in the red box
1.3.3 Installing Git Bash

We will be using the default settings for installations

1) Click "Next >"

![Image of Git 2.9.3 Setup window]

**Figure 36:** Red box denotes "Next >"
2) Click "Next >"

![Figure 37: Red box denotes "Next >"](image_url)

**Select Destination Location**
Where should Git be installed?

Setup will install Git into the following folder.

To continue, click Next. If you would like to select a different folder, click Browse.

C:\Program Files\Git

At least 191.3 MB of free disk space is required.

https://git-for-windows.github.io/
3) Click "Next >"

![Select Components](image)

Select the components you want to install; clear the components you do not want to install. Click Next when you are ready to continue.

- Additional Icons
- On the Desktop
- Windows Explorer integration
  - Git Bash Here
  - Git GUI Here
- Associate .git* configuration files with the default text editor
- Associate .sh files to be run with Bash
- Use a TrueType font in all console windows

Current selection requires at least 191.3 MB of disk space.

https://git-for-windows.github.io/

Figure 38: Red box denotes "Next >"
4) Click "Next >"

Figure 39: Red box denotes "Next >"
5) Click "Next >"

Figure 40: Red box denotes "Next >"
6) Click "Next">

**Figure 41:** Red box denotes "Next >"
7) Click "Next >

Configuring the terminal emulator to use with Git Bash
Which terminal emulator do you want to use with your Git Bash?

- Use MinTTY (the default terminal of MSYS2)
  Git Bash will use MinTTY as terminal emulator, which sports a resizable window, non-rectangular selections and a Unicode font. Windows console programs (such as Interactive Python) must be launched via `winpty` to work in MinTTY.

- Use Windows' default console window
  Git will use the default console window of Windows ("cmd.exe"), which works well with Win32 console programs such as interactive Python or node.js, but has a very limited default scroll-back, needs to be configured to use a Unicode font in order to display non-ASCII characters correctly, and prior to Windows 10 its window was not freely resizable and it only allowed rectangular text selections.

https://git-for-windows.github.io/

Figure 42: Red box denotes "Next >"
8) Click "Install"

**Figure 43:** Red box denotes "Install"
9) **Close Installer**
Check off the "Launch Git Bash"
Click "Finish"

![Git 2.9.3 Setup](image)

**Completing the Git Setup Wizard**

Setup has finished installing Git on your computer. The application may be launched by selecting the installed shortcuts.

Click Finish to exit Setup.

- [x] Launch Git Bash
- [x] View Release Notes

![Figure 44: Green box denotes "Launch Git Bash". Red box denotes "Finish"](image)
1.3.4 Using Git Bash

We will now use Git bash to connect to the Thunder System, and compile and run C code.

1) Git Bash
Git Bash should have open automatically after the installer was finished. If it is not open, please open it.

![Standard Git Bash view](image)

**Figure 45:** Standard Git Bash view
2) Connection to Thunder System

You will need to type "ssh " then your CISE account username, then "@thunder.cise.udl.edu"
Example: ssh your_username@thunder.cise.ufl.edu

![Command Example]

**Figure 46:** ssh command
3) **Entering Password**

Type your CISE account password, then press the enter key

*Note: Password will not display as you type it*

![Image of password input](image)

**Figure 47:** Entering password
4) **Thunder System connection**

The last line of the terminal should say "thunder:1%". If you see this, then the login was successful.

![Screenshot of a terminal showing successful login to Thunder System](image)

**Figure 48:** View when connected to Thunder Syste
5) **Compiling C code**

Type: `clear`
And press enter. This will clear up the screen.
Now type: `gcc file_name.c`
and press enter. This will compile the program. If there are no errors, then the terminal will
go to the next line.
Example: `gcc main.c`

![Figure 49: View of successful compiling](image)

Figure 49: View of successful compiling
6) Running C code
   Type: ./a.out
   and press enter. This runs the program. In this case, the main.c program displays "Hello World!"
   If you see "Hello world!" then your program successfully runs on the Thunder Systems.

   ![Figure 50: View after running the hello world program](image)

   **Figure 50:** View after running the hello world program
2 Possible Errors

2.1 CODE::Blocks

2.1.1 Can’t find compiler

1) Locate Compiler Settings
   Click "Settings"
   Click "Compiler..."

Figure 51: Green Box denotes "Settings". Red box denotes "Compiler..."
2) **Find Compiler**
   Click "Auto-detect"

![Figure 52: Red box denotes "Auto-detect"](image)
3) Click "Ok"

![Global compiler settings](image)

**Figure 53:** Red box denotes "Ok"
4) Click ”Ok”

**Figure 54:** Red box denotes ”Ok”