

## Development Environment Configuration

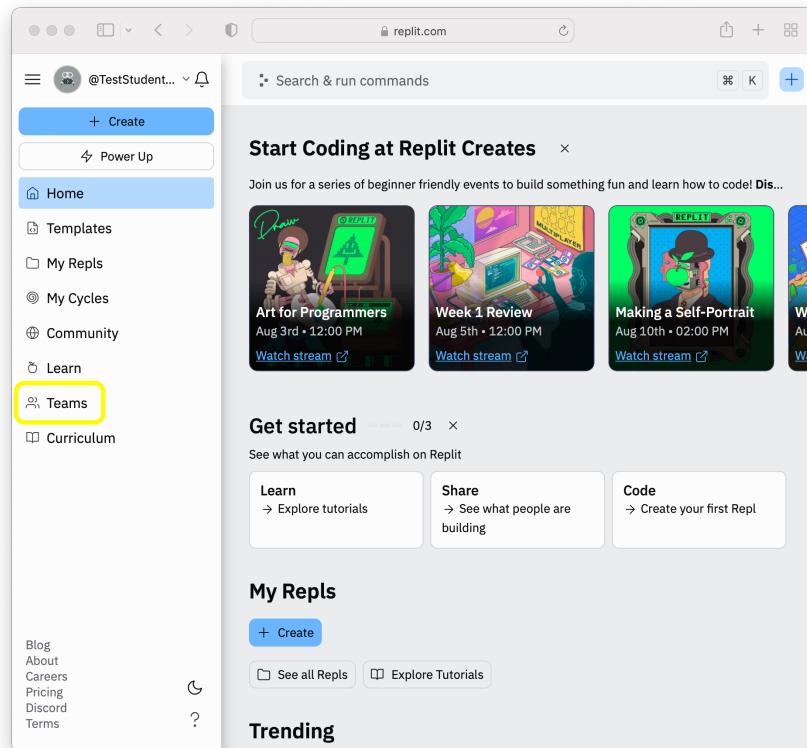
We are going to use browser-based development environment, named **Replit**, that is Unix/Linux based. This environment allows you to write your code using a regular web browser, without having to install any software on your computer. Also, your files are on the cloud, so they can be accessed from anywhere.

Please follow the steps listed below to create your account and create a sample program:

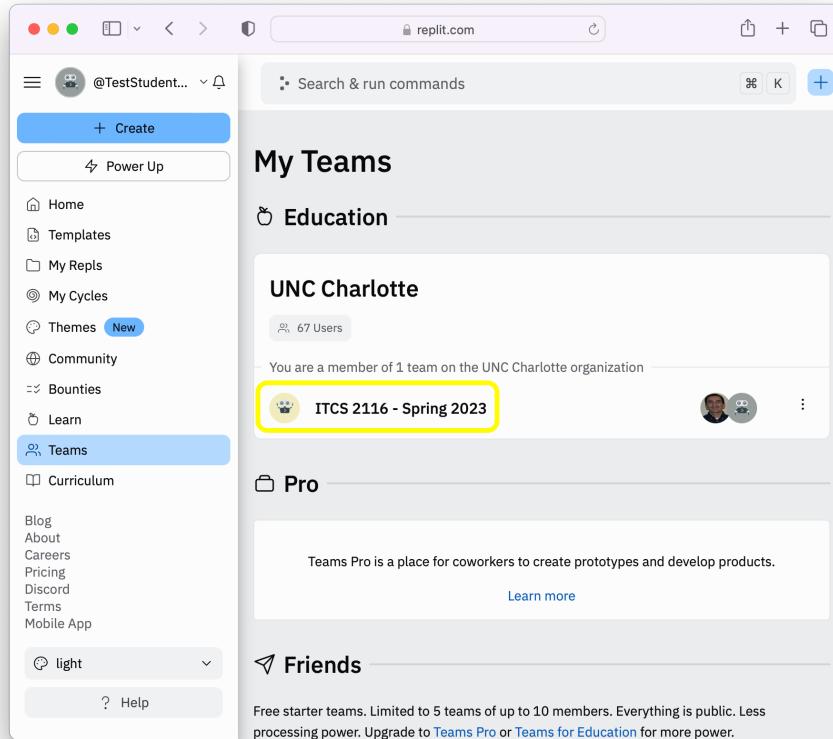
1. Open your web browser.
2. Watch the “Getting started with **Replit**” video at the following link:  
<https://youtu.be/ZAC0TQEUV5g>
3. Copy-paste or follow the invitation link provided below.  
<https://replit.com/teams/join/lawzgeusxbyztukbzdwestbycrzzwuuo-itcs-2116-spring-2023>

You will be prompted to create a new **Replit** account. If you already have an account, you may use it for the course.

4. On the navigation bar on the left, click on the **Teams** link.

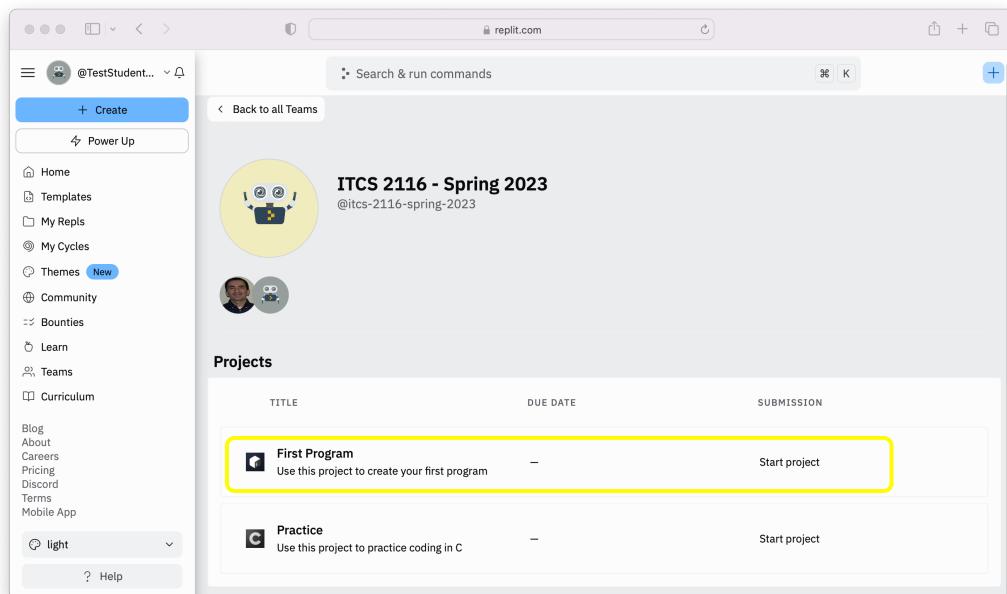


5. You should see a team for this class and term, named **ITCS 2116 - Spring 2023**. You have already been placed on this team. Click on the team link for this class.



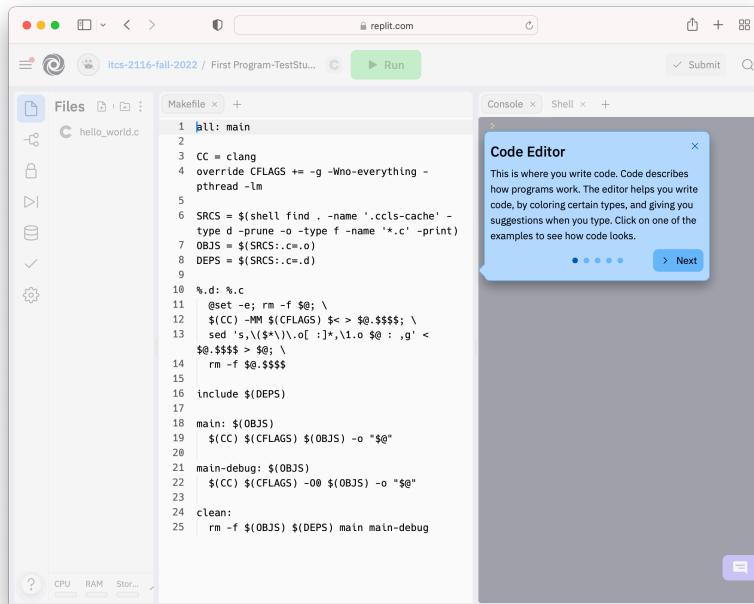
The screenshot shows the 'My Teams' page on replit.com. The left sidebar includes links for Home, Templates, My Repls, My Cycles, Themes (New), Community, Bounties, Learn, Teams (which is selected and highlighted in blue), Curriculum, and various links at the bottom. The main area is titled 'My Teams' and shows the 'Education' section. It lists 'UNC Charlotte' with 67 users and 'ITCS 2116 - Spring 2023' with 1 user. The 'ITCS 2116 - Spring 2023' team is highlighted with a yellow box. Below this, the 'Pro' section is shown with a description of Teams Pro and a 'Learn more' link. The 'Friends' section follows, with a note about free starter teams.

6. You should see a couple of projects. Start the project named “First Program.”



The screenshot shows the 'ITCS 2116 - Spring 2023' team page on replit.com. The left sidebar is identical to the previous screenshot. The main area shows the 'Projects' section. It lists two projects: 'First Program' and 'Practice'. The 'First Program' project is highlighted with a yellow box. Both projects have a description and a 'Start project' button.

7. Click on **Start project**. You should see the Code Editor window, shown below. You will use this editor to practice coding and work on your programming assignments.



The screenshot shows a Replit interface. On the left, the 'Files' sidebar shows a 'hello\_world.c' file and a 'Makefile'. The 'Makefile' content is as follows:

```
1 #!@: main
2
3 CC = clang
4 override CFLAGS += -g -Wno-everything -
5 pthread -lm
6
7 SRCS = $(shell find . -name '.ccls-cache' -
8 type d -prune -o -type f -name '*.c' -print)
9 DEPS = $(SRCS:.c=.d)
10
11 %.d: %.c
12 @set -e; rm -f $@; \
13 $(CC) -MM $(CFLAGS) $c > $@.d; \
14 sed 's,\(\$\*\)\.\(d\),\1.o \1.o : ,g' < \
15 $@.d > $@; \
16 rm -f $@.d
17
18 include $(DEPS)
19
20 main: $(OBJS)
21 $(CC) $(CFLAGS) $(OBJS) -o "$@"
22
23 main-debug: $(OBJS)
24 $(CC) $(CFLAGS) -D DEBUG $(OBJS) -o "$@"
25
26 clean:
27 rm -f $(OBJS) $(DEPS) main main-debug
```

A 'Code Editor' pop-up window is open in the center, containing the following text:

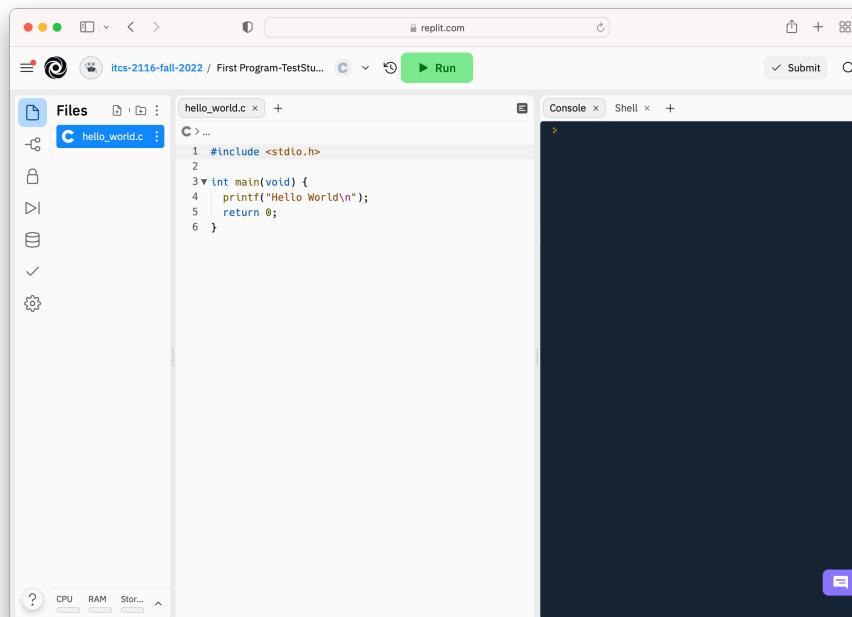
This is where you write code. Code describes how programs work. The editor helps you write code, by coloring certain types, and giving you suggestions when you type. Click on one of the examples to see how code looks.

... > Next

8. Follow the prompts and make sure to **read the explanations carefully**.

9. Click on the file named [hello\\_world.c](#)

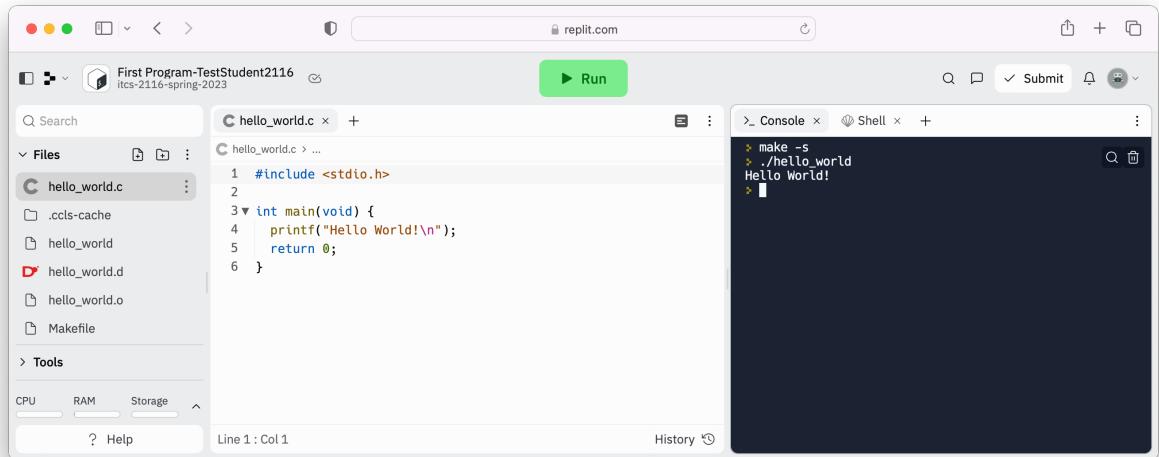
10. You should see a short **C** program, as shown below.



The screenshot shows the Replit interface with the 'hello\_world.c' file selected in the 'Files' sidebar. The code editor shows the following C program:

```
1 #include <stdio.h>
2
3 int main(void) {
4     printf("Hello World\n");
5     return 0;
6 }
```

11. Run the program and look at the output. You should see the message “Hello World!” displayed on the console.



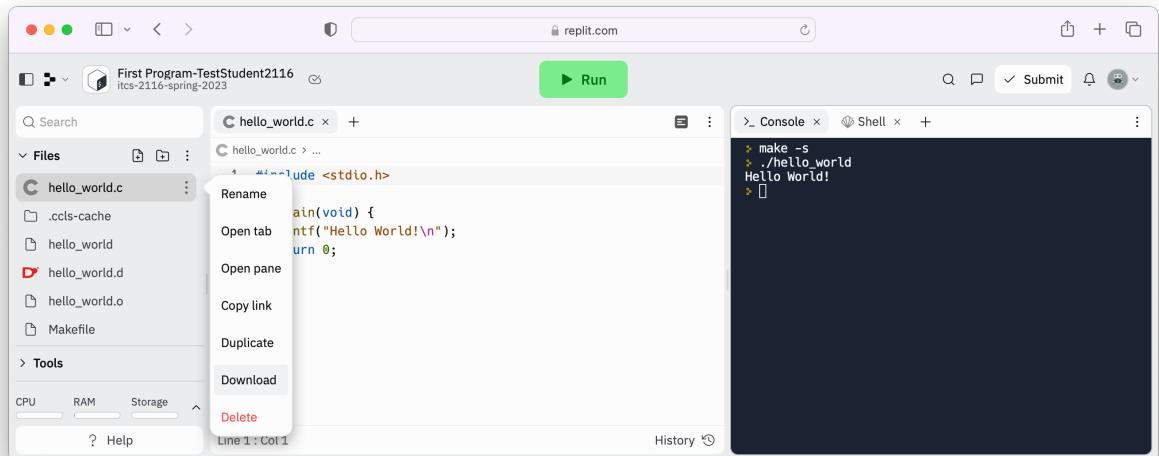
The screenshot shows the Replit IDE interface. On the left, the 'Files' sidebar shows a project structure with files: .ccls-cache, hello\_world, hello\_world.d, hello\_world.o, and Makefile. The main code editor pane displays the 'hello\_world.c' file with the following code:

```
#include <stdio.h>
int main(void) {
    printf("Hello World!\n");
    return 0;
}
```

On the right, the 'Console' pane shows the output of the program:

```
make -s
./hello_world
Hello World!
```

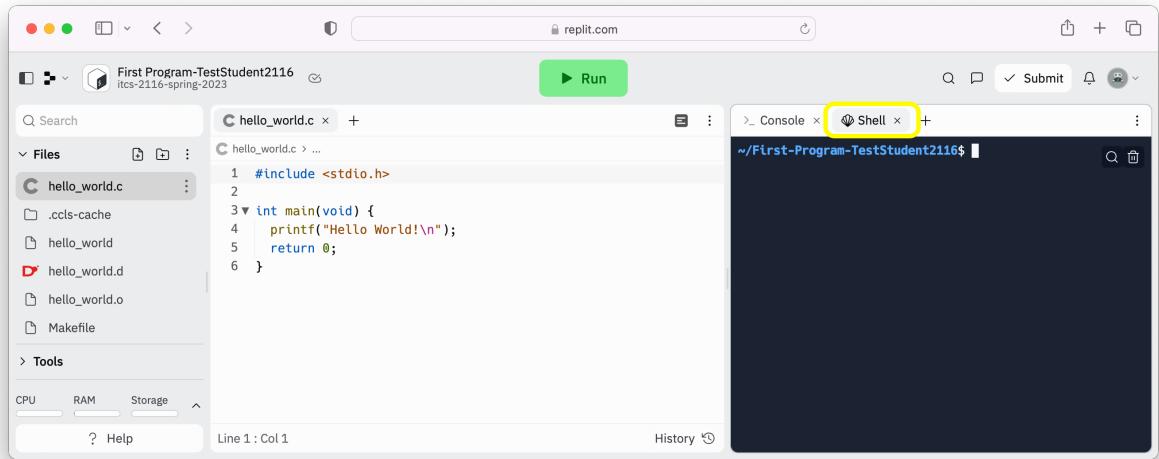
12. Download the program code file to your computer. To do this, right-click on the file name, as shown below.



The screenshot shows the Replit IDE interface with a context menu open over the 'hello\_world.c' file in the 'Files' sidebar. The menu options include: Rename, Open tab, Open pane, Copy link, Duplicate, Download (which is highlighted in blue), and Delete.

13. Upload the [hello\\_world.c](#) file to Canvas, as indicated in the assignment.

14. Click on the **Shell** button to open the command shell.



15. Type the following command and press **Enter/Return**:

`./hello_world`

16. Make a note of the output produced when this command is executed.