



## Charging the Controller's Battery

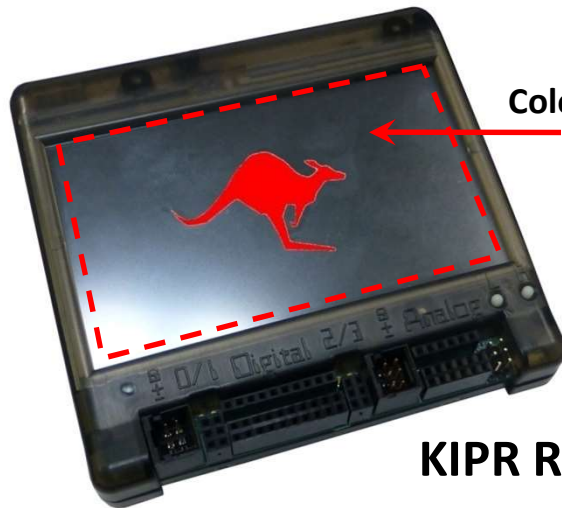
- For charging the controller's battery, **use only the power supply which came with your controller.**
  - It is possible to damage the battery by using the wrong charger or excessive discharge!
- The standard power pack is a **lithium iron (LiFe) battery**, a safer alternative to lithium polymer batteries. The safety rules applicable for recharging any battery still apply:
  - **Do NOT leave the battery unattended** while charging.
  - Charge in a cool, open area away from flammable materials.





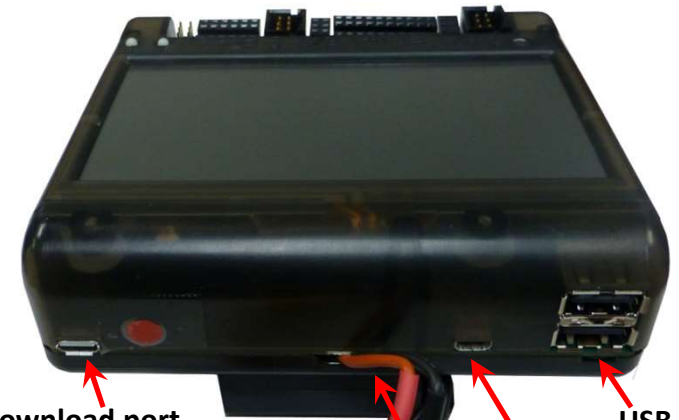
# KRC Wallaby Controller Guide

Resource



Color Touch Screen

## KIPR Robotics Controller Wallaby



Download port  
(micro USB)

USB

Micro HDMI

Power (external battery  
connection)



2 Servo  
Motor Ports  
(Port # 0 & 1)

2 Motor Ports  
(Port # 0 & 1)

10 Digital  
Sensor Ports  
(Port # 0 - 9)

2 Motor Ports  
(Port # 2 & 3)

2 Servo  
Motor Ports  
(Port # 2 & 3)

6 Analog  
Sensor Ports  
(Port # 0 - 5)



Power Switch



## Making the Connection

All connections are as follows:

- **Yellow to Yellow** (battery to controller)
- **White small to White small** (charger to battery)
- **Black to Black** (motors, servos, sensors)



# Wallaby Power

- The KIPR Robotics Controller – Wallaby, uses an external battery pack for power.
  - It will void your warranty to use a battery pack with the Wallaby that hasn't been approved by KIPR.
- Make sure to follow the shutdown instruction on the next slide. Failure to do so will drain your battery to the point where it can no longer be charged. If you plug your battery into the charger and the blue lights continue to flash then you have probably drained your battery to the point where it cannot be charged again. You can purchase a replacement battery from [www.botballstore.org](http://www.botballstore.org).



## Wallaby Power Down

- From the Software Suite select *Shutdown*
  - Select *Yes*
- From the Wallaby Home Screen press *Shutdown*
  - Select *Yes*
- Go to your Wallaby screen and check to see if it is halted
- Slide the power switch to off AND unplug the battery, using the yellow connectors, being careful not to pull on the wires



# Connect the Wallaby to your computer at Workshop and Tournament

Activity

- Connect the **Wallaby** to your computer using **USB Cable**
  1. Plug battery into Wallaby- **YELLOW TO YELLOW**.
  2. Turn on the Wallaby with the **black switch on the side**

**1** Put micro  
USB end here



**2** Attach  
USB to  
computer



1. Once your Wallaby has booted, the Wallaby will appear in the list of available Ethernet connections for your computer.
2. If you get a message about the driver raise your hand for help or go to the team home base- Troubleshooting- USB driver for instructions



## Loading the Starting Web Page (USB)

Activity

1. Launch your web browser (such as Chrome or Firefox) and power up your Wallaby.
2. Copy this IP address into your browser's address bar followed by ":" and port number 8888; e.g.,

192.168.124.1:8888

└──────────┘ └──┘

IP address      Port #

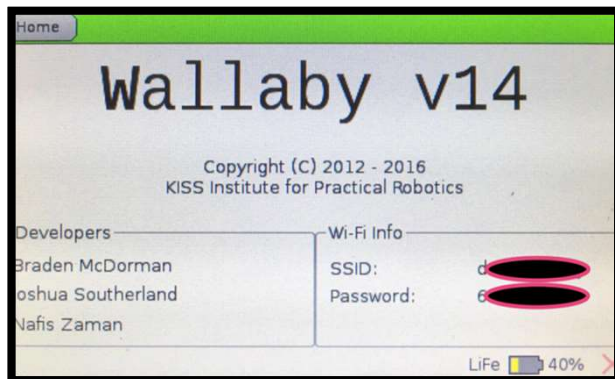
3. Note that USB cable IP address is 192.168.**124**.1:8888
4. The user interface for the package will now come up in your browser.



# Connect the Wallaby to your computer, Smart Phone or Tablet At School

- Connect the **Wallaby** to your Browser device via Wi-Fi
- This is great at home or School
- **Not recommended at Large Workshops or any Tournament**

1. Turn on the Wallaby with the **black switch on the side**

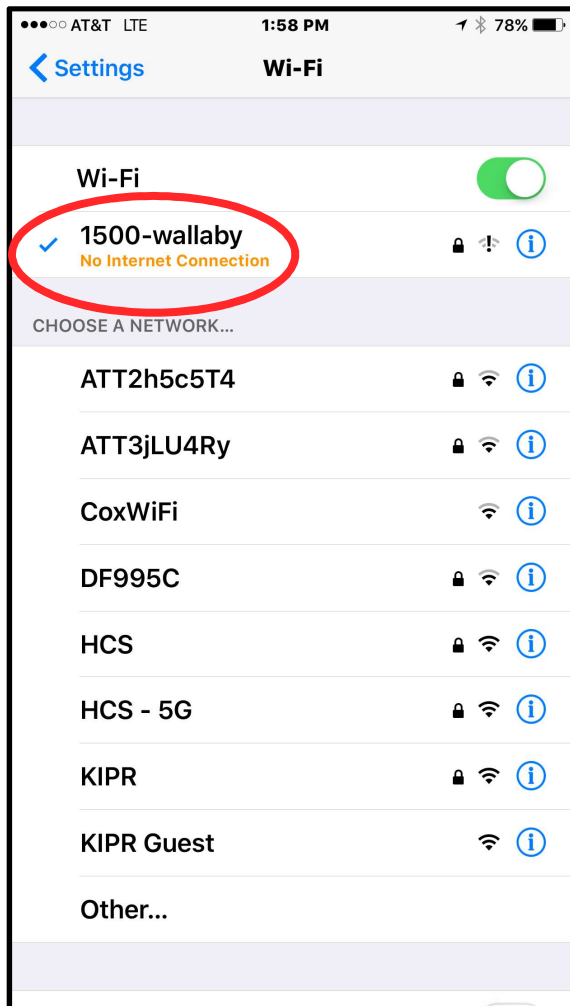


1. Use the info (Wallaby # and Pass Word) in the about page to connect via Wi-Fi



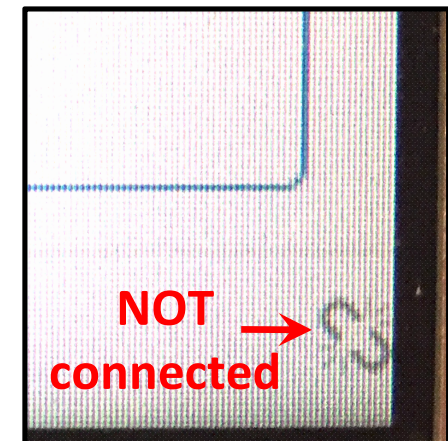
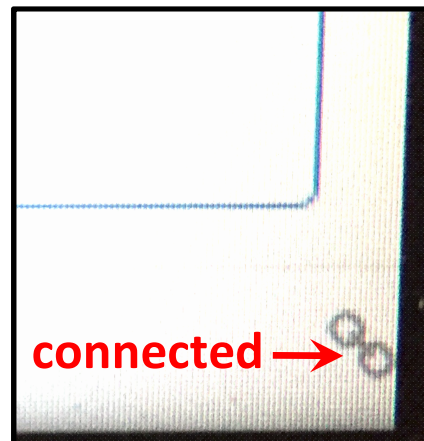


# Connection



When you are connected to your Wallaby, your device may give various errors; “no internet connection” or “connected with limited..”

In the bottom right corner of the KIPR IDE there is an icon that shows if you are still connected to the Wallaby.





## Loading the Starting Web Page (Wi-Fi)

Activity

1. Launch a web browser such as Chrome or Firefox and power up your Wallaby. Note that Internet Explorer **will not work**. Connect to the Wallaby via Wi-Fi.
2. Copy this IP address into your browser's address bar followed by ":" and port number 8888; e.g.,  

192.168.125.1:8888

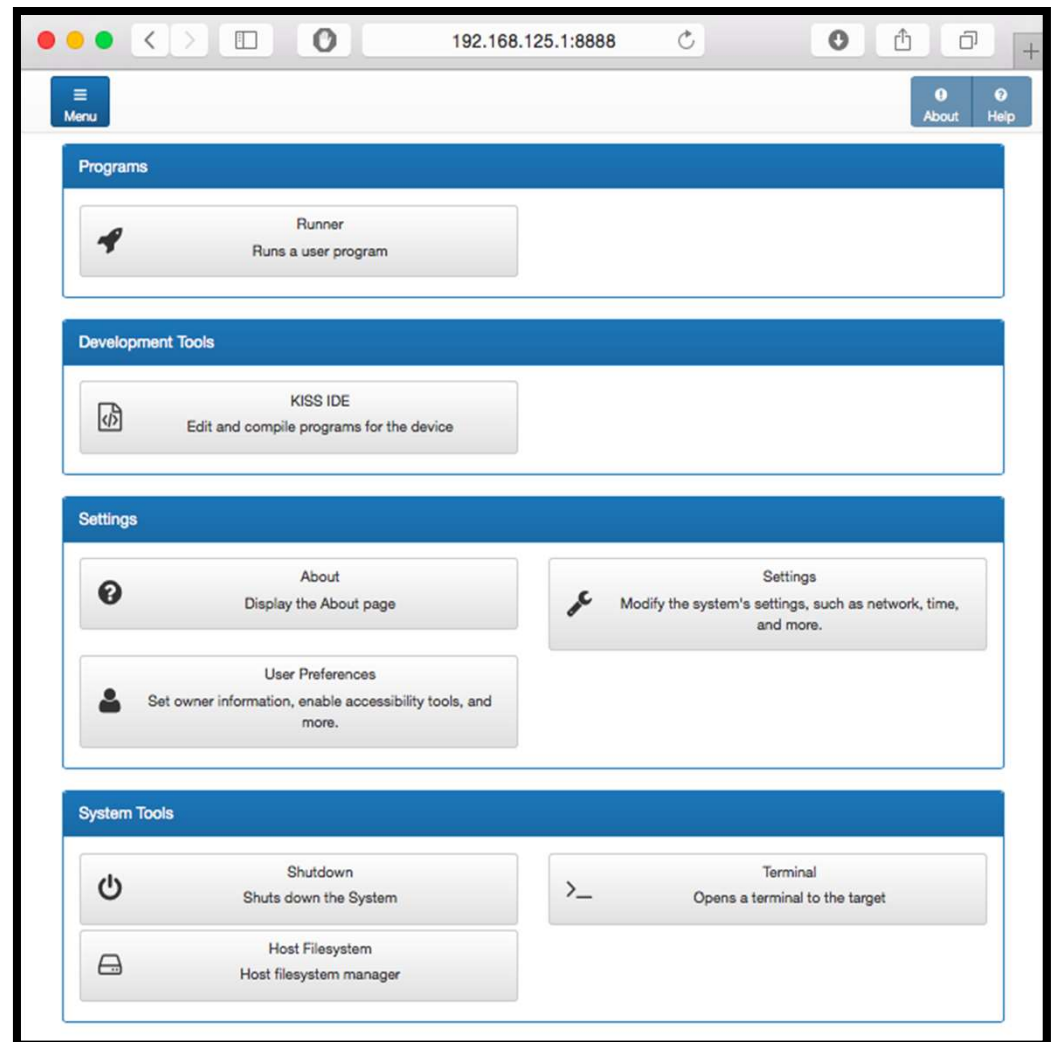
IP address      Port #
4. The user interface for the package will now come up in your browser.
5. You may use a computer, tablet or even a smart phone through Wi-Fi.



# How can I write and compile my own source code?

To make it easier for you to learn and use a programming language, KIPR provides a web-based **Software Suite** which will allow you to write and compile source code using the **C programming language**.

The development package will work with almost any web browser **except Internet Explorer**.

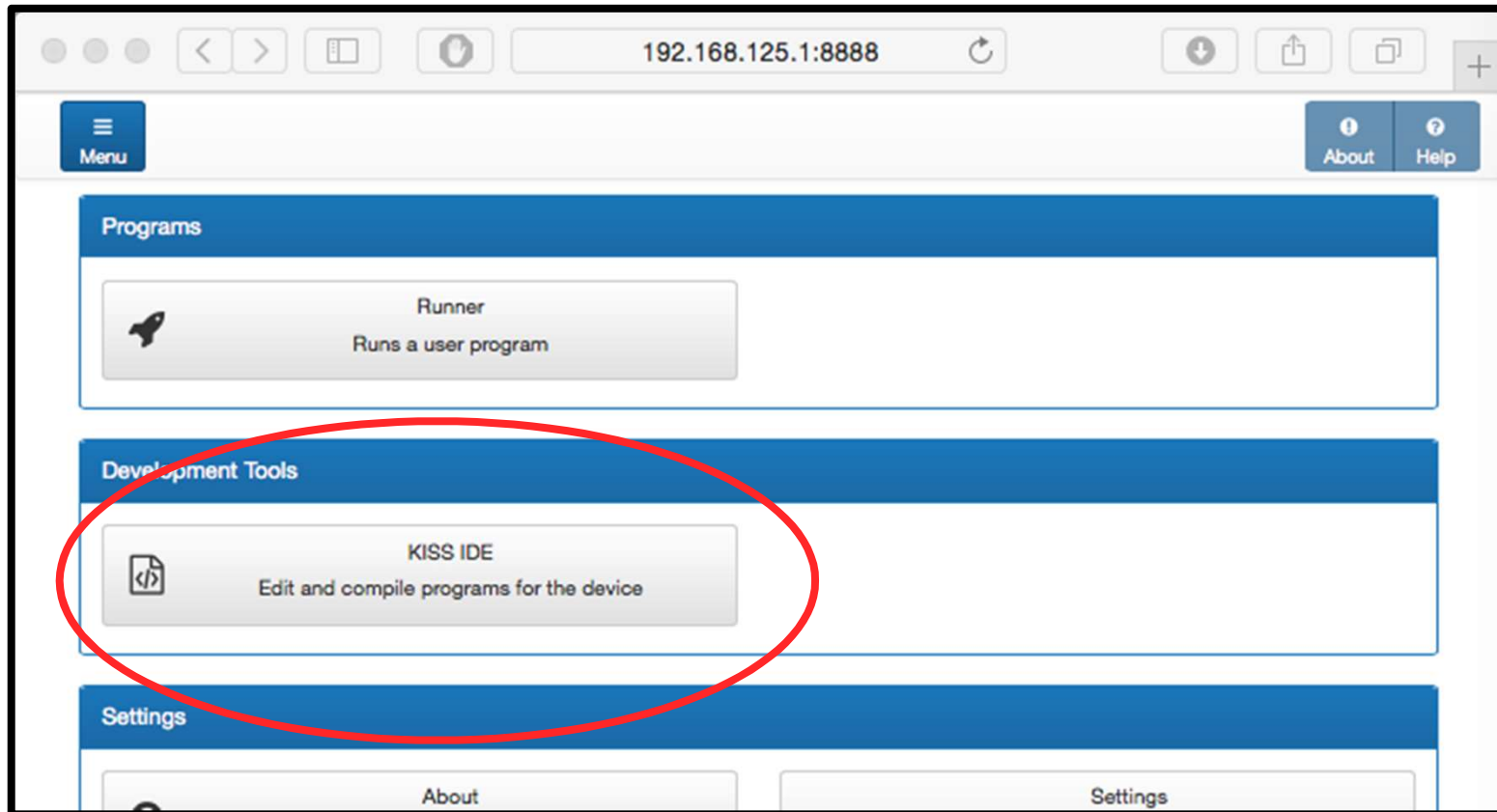




# Creating your first project

Activity

1. Click on the **KISS IDE** button.



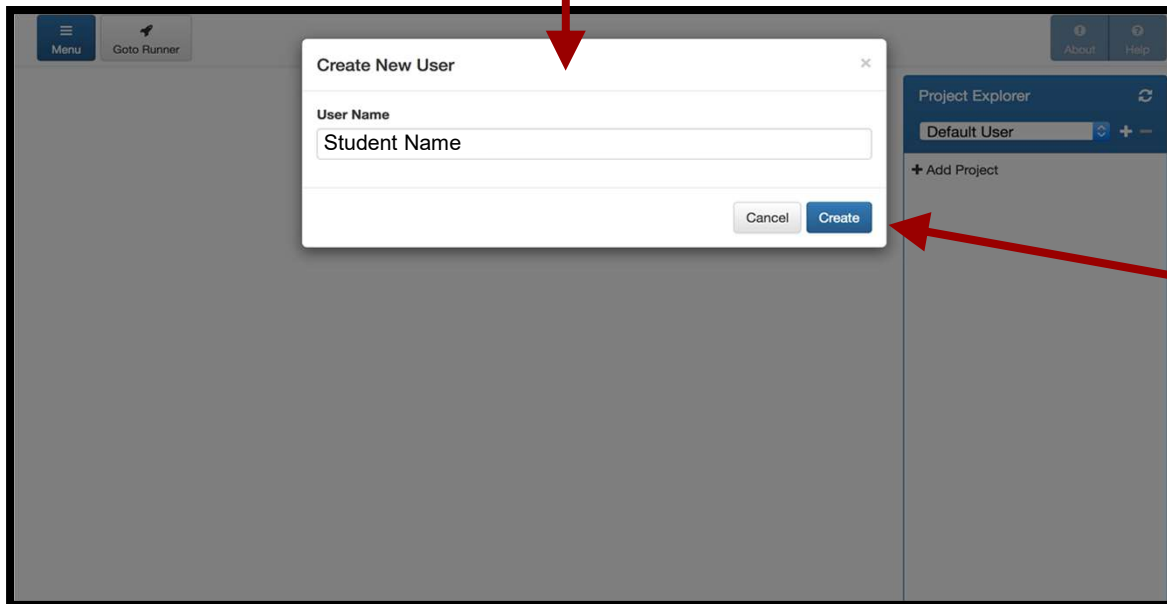
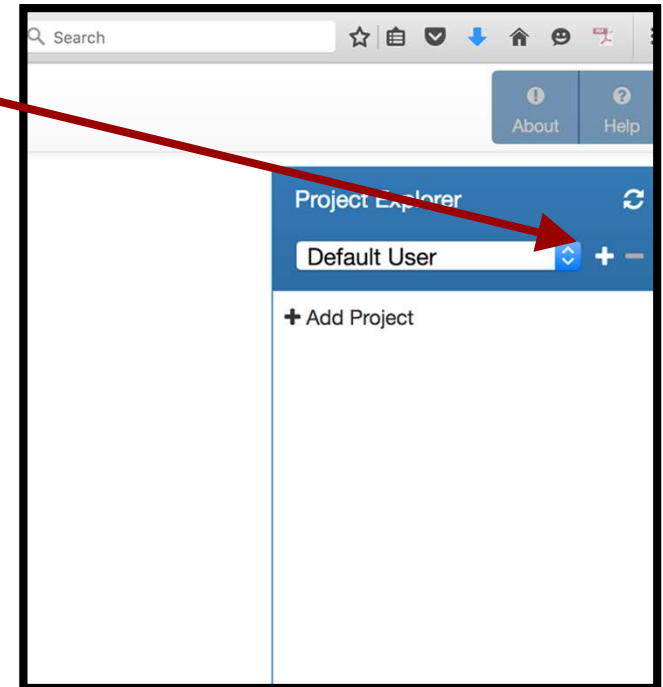
**NOTE:** The buttons might be in different locations depending on device type.



# Creating your first user folder

Activity

1. Add a new user folder by clicking the **+** sign in the **Project Explorer**.
2. Name your new user folder by the student's name to help organization. All of your different projects will go into this user folder.



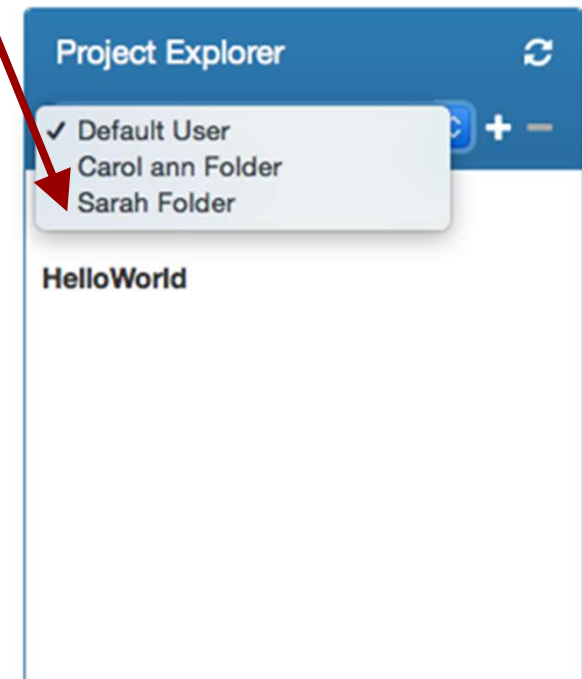
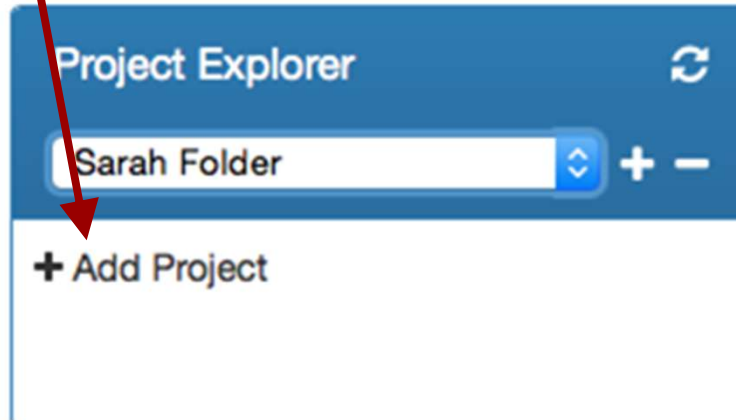
3. Click **Create** to complete.



# Creating your first project

Activity

1. Go back to **Project Explorer** and select the **User Name** you created from the drop down. This is the folder you created.
2. Click **+Add Project**. You are adding a project to your folder.





# Name your project

Activity

1. Give your project a **descriptive name**
  - **Note:** you will have a lot of student's projects, so consider using their first name followed by the name of the activity.
2. Give a descriptive Source File Name as well. The Source File needs to end with a **.c**
  - Then press the **Create** button.

Create New Project

Project name

My First Project

Programming Language

C

Source file name

main.c

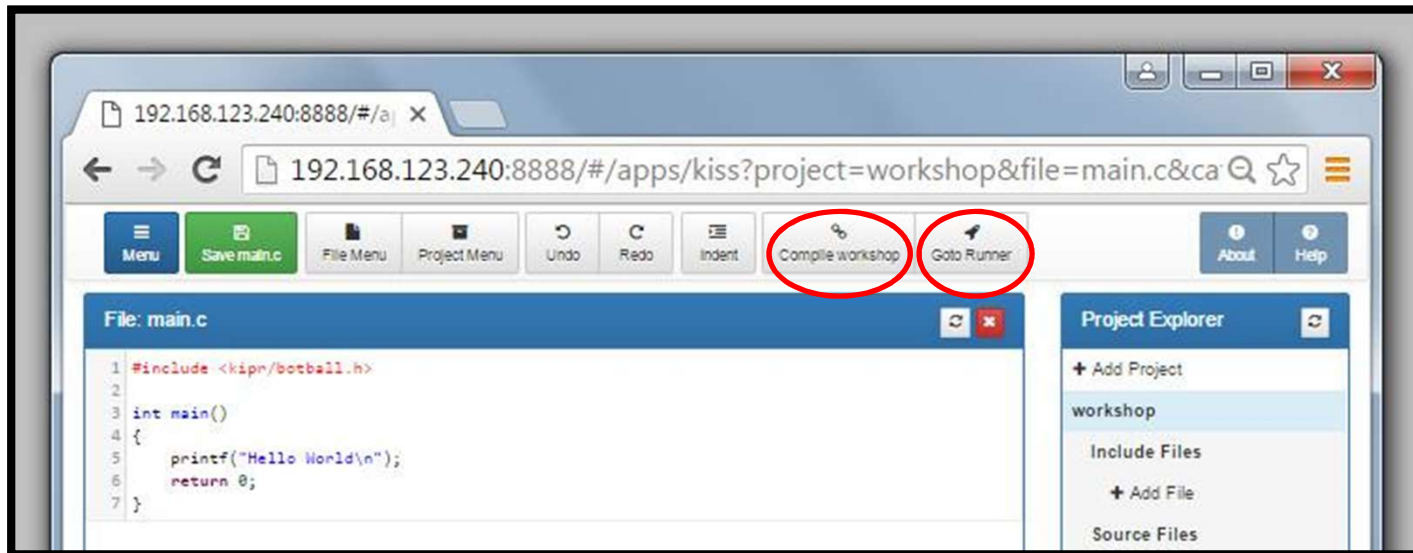
Cancel Create



# Compile and Then Run Your Project

Activity

1. Click the **Compile** button for your project and, if successful, click **Run** so you can run your project to see if it works.



NOTE: When you compile, your project is automatically saved.



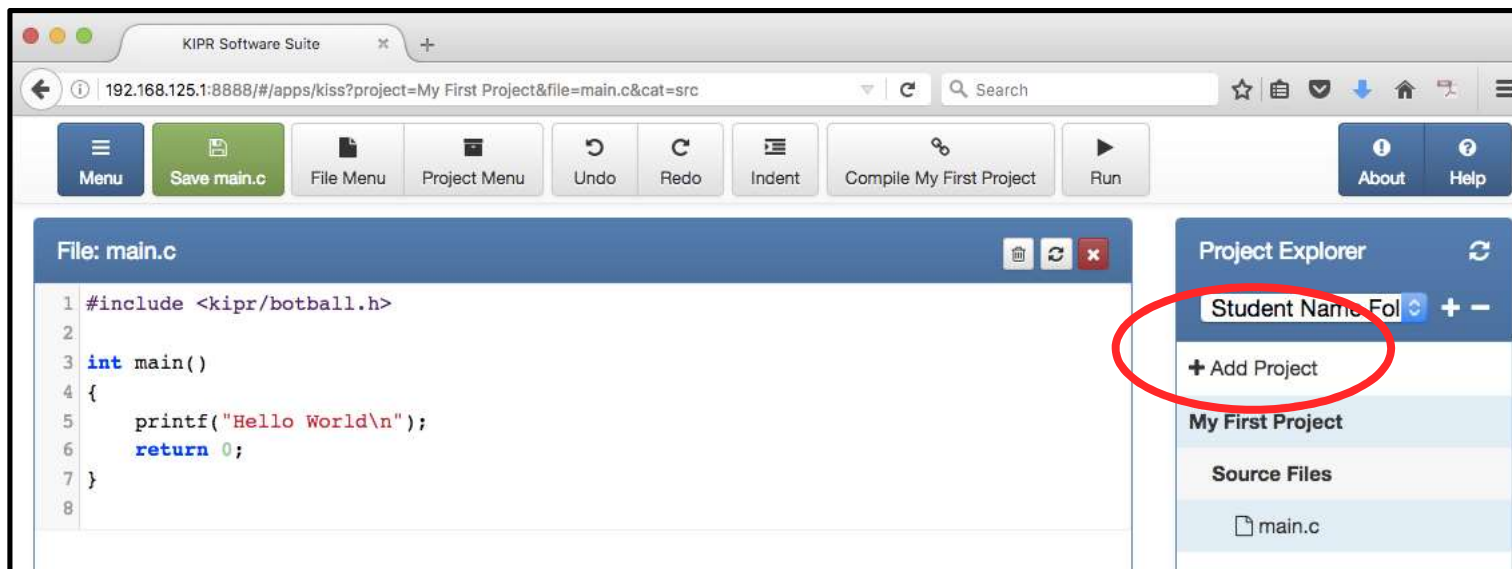


# Starting another project

Activity

**Note:** one *project* = one *program*.

- Click the **+ Add Project** button or click the **Menu** button to return to the starting menu.
- Proceed as before.
- The **Project Explorer** panel will show you all of the user folder projects and actively edited files.





# “Hello, World!”

File: main.c

```
1 #include <kipr/botball.h>
2
3 int main()
4 {
5     printf("Hello World\n");
6     return 0;
7 }
8
```

**Note:** We will use this template every time; we will delete lines we don't want, and we will add lines that we do want.



# Text color highlighting

The KISS IDE highlights parts of a program to make it easier to read. (By default, the KISS IDE colors your code and adds line numbers.)

- Includes in **purple**
  - Comments in **green**
  - Text strings appear in **red**
  - Keywords appear in **blue**
- ```
File: main.c
1 #include <kipr/botball.h>
2 // Commenting for the flow of code
3 int main()
4 {
5     printf("Hello World\n");
6     return 0;
7 }
8
```