

Advanced Manufacturing Academy

ROBOTICS – 2
Load test code

College of Engineering and Technology

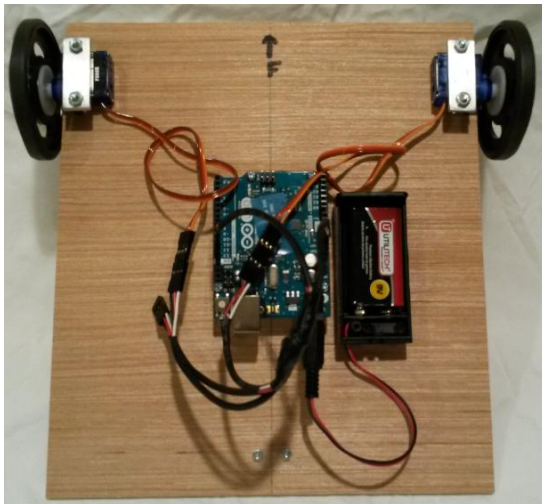
East Carolina University

Our Robot – Our Plan

- Assembly is complete!
- It isn't moving?
- We need code!
- First Code... Test functions – Demo
 - Go forward
 - Go backward
 - Turn right
 - Turn left

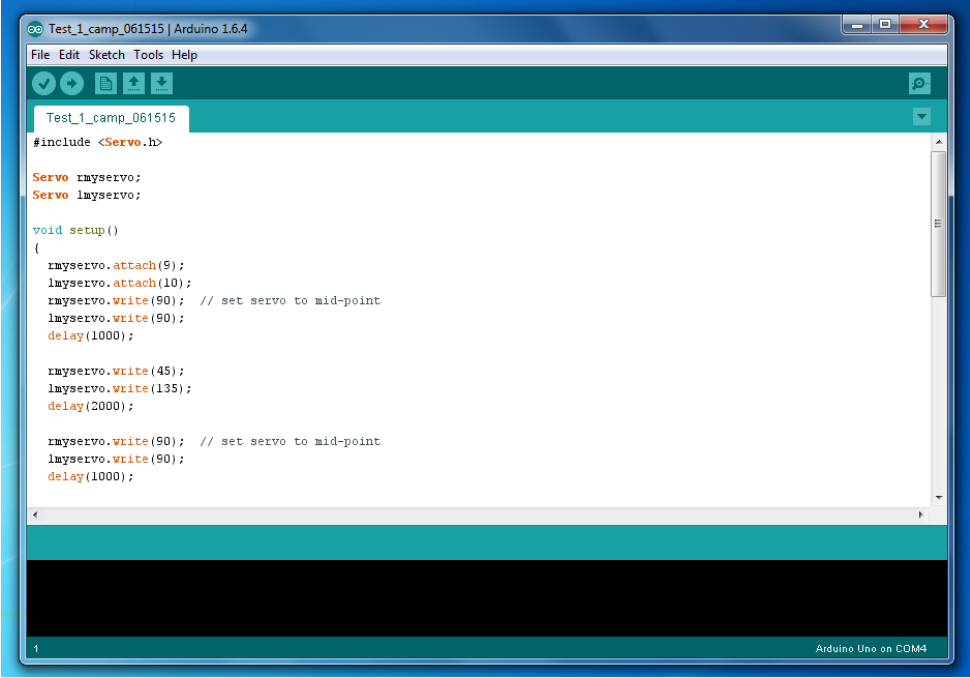
Loading Sample Code

- Load a prepared program
- You will need:
 - Robot
 - Programming cable
 - Laptop with software loaded



Loading Code – Step 1

- Computer up and running
- Arduino Software is loaded and running
- Sample code is open



The screenshot shows the Arduino IDE interface. The title bar reads "Test_1_camp_061515 | Arduino 1.6.4". The menu bar includes "File", "Edit", "Sketch", "Tools", and "Help". The toolbar contains icons for opening, saving, and running. The sketch editor displays the following code:

```
Test_1_camp_061515
#include <Servo.h>

Servo myservo;
Servo myservo;

void setup()
{
  myservo.attach(9);
  myservo.attach(10);
  myservo.write(90); // set servo to mid-point
  myservo.write(90);
  delay(1000);

  myservo.write(45);
  myservo.write(135);
  delay(2000);

  myservo.write(90); // set servo to mid-point
  myservo.write(90);
  delay(1000);
}
```

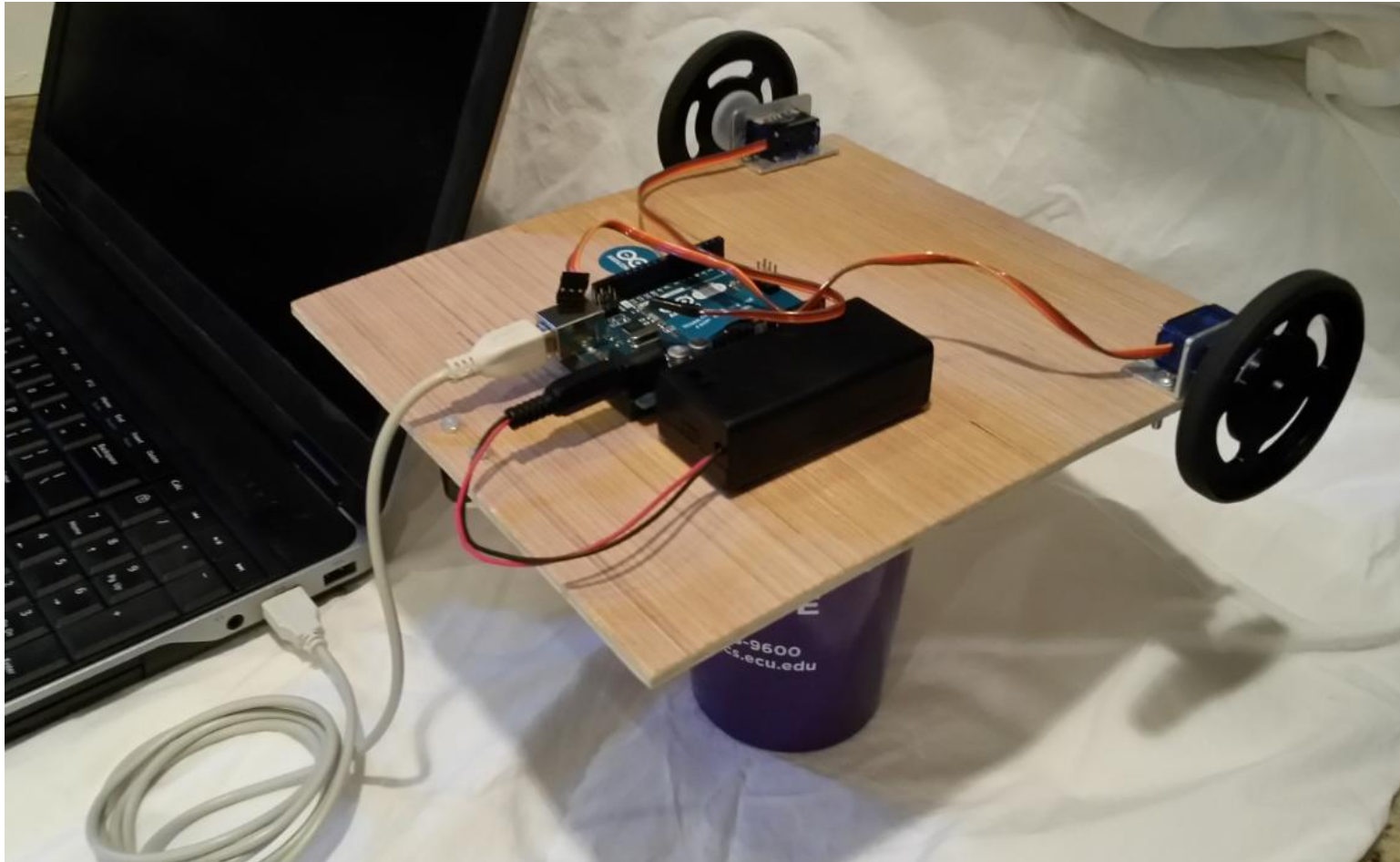
The status bar at the bottom indicates "1" and "Arduino Uno on COM4".

Loading Code – Step 2

- Wheels up! Fingers out!
 - Very important
 - Place the robot so it can't move
 - Keep fingers out of moving parts
- Plug the battery into the Arduino
- Plug the programming cable into the Arduino.
 - For testing, we will have a computer set up to load code to the robots.

Loading Code – Step 2 (cont)

- Robot and computer should look like...

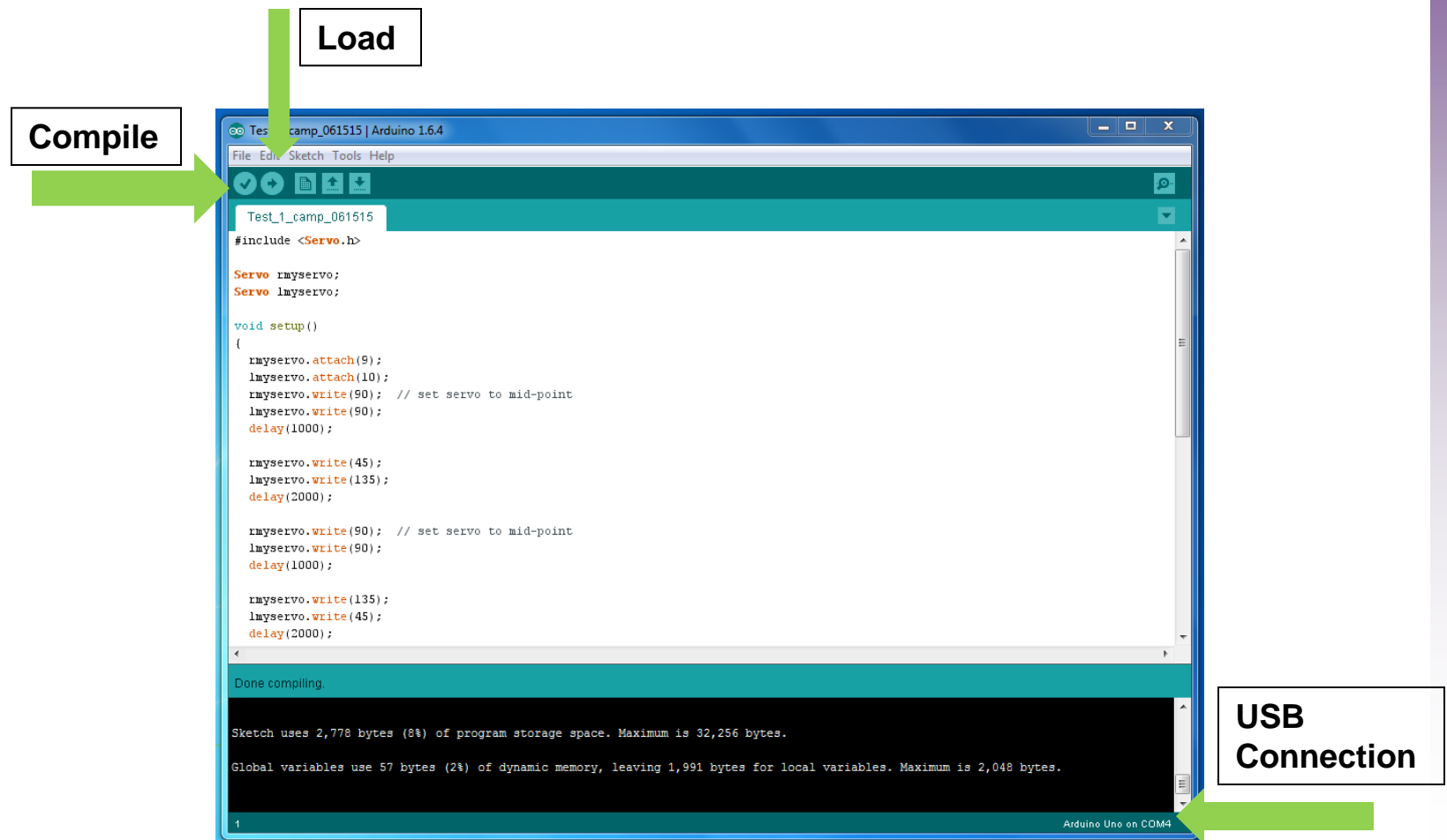


Loading Code – Step 3

- Confirm a USB connection
- Compile/confirm code
- Download code
 - Flashing lights
 - Robot will begin moving

Loading Code – Step 3 (cont)

- Screen should look like this....



Check Your Work!

- Code will run one cycle and stop.
- Unplug USB cable from Arduino
- Place robot on flat surface.
- Code will always run as soon as you plug in the battery. (This model)
- Code is stored on the Arduino
- Press the “Reset” button to run again.

Check Your Work (cont)

- Test Program
 - Robot will:
 - ✓ Drive forward for ~2 seconds
 - ✓ Drive backward for ~2 seconds
 - ✓ Turn right for ~2 seconds
 - ✓ Turn left for ~2 seconds
 - ✓ 1 second pause between each step
 - If this happens – All is well!
 - If not... See an instructor for assistance!

CONGRATULATIONS!

- Your robot is ready for it's next adventure!

