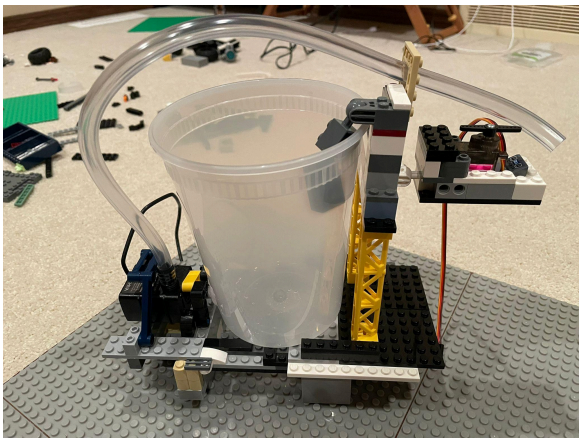
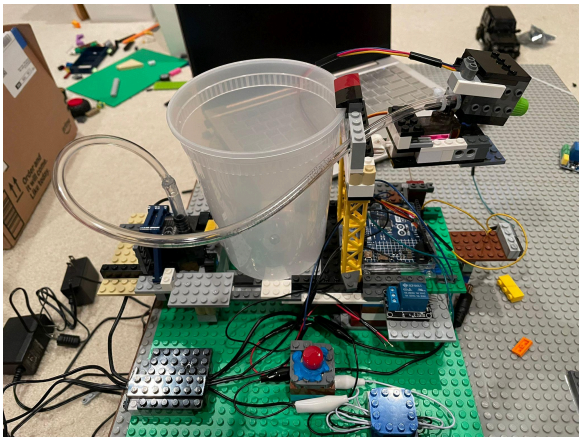
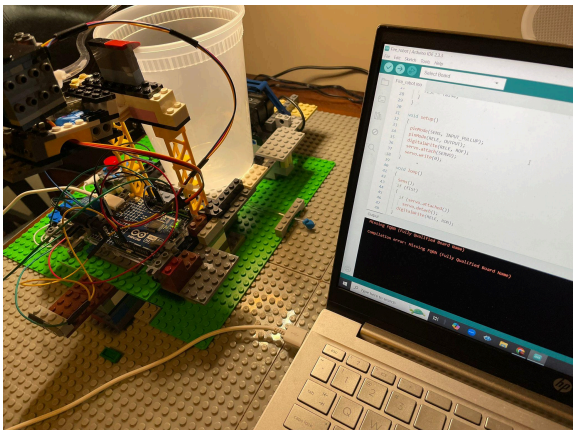
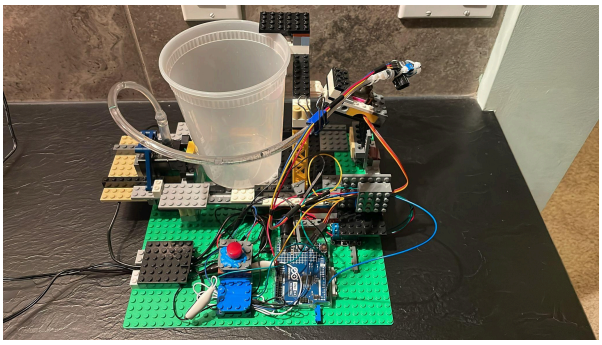
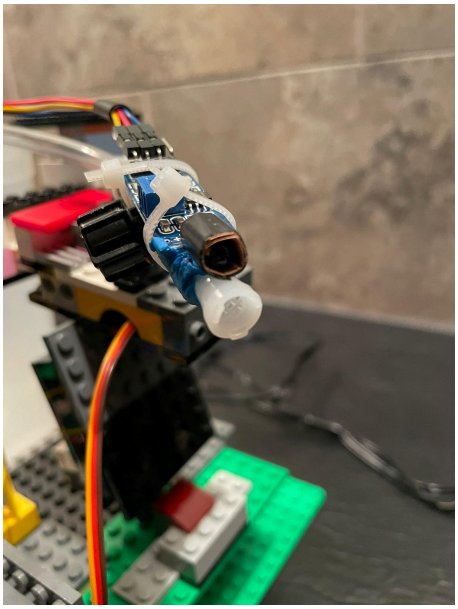
Log Book

## Prototype - Early Progress 	On the first day we started to build the structure of the robot out of Lego,and secured the water pump and the servo motor. I also attached the tube to the water pump that went through a frame structured Lego piece to center the tube better. We positioned the water tank in the middle with a hole in its side connecting to the other tube of the water pump.
## Prototype - Complete 	Here we have all the wiring connected and we switched out the tube for a smaller variant because the earlier tube wasn't flexible enough which prevented the servo motor from spinning properly. When the red button is pressed it will start running the code, there were some bugs in the code and did not match so I adjusted the physical insulation and eventually got it right. I also added a drainage hole to the bottom of the water tank. I encased the fire sensor in a little Lego box that was mounted on the hose that is attached to the servo motor using zip ties and equipped the hose with a spray nozzle. The Arduino Uno R4 Minima is located underneath the servo motor.
## Prototype - Code Upload 	I then uploaded the code using Arduino IDE and connected the pins according to the code. Then, I connected it all to the red button which acts as an on-off switch. So,when you press it,it runs the code. A summary of how the code works is when the switch is pressed it activates the servo motor which starts turning 180 degrees until the fire sensor detects the infrared wavelengths. After the fire sensor detects the fire, the relay starts powering the water pump which sends the water through the tube then the water comes out and extinguishes the fire. If the fire isn't put out after the robot sprays the water it will continue to target it and keep spraying until it's extinguished.When the fire is put out it activates the relay module that cuts off the power

	to the hydro pump that stops more water from spraying out of the tube.Then the code repeats itself.
## Prototype - Final Design 	In the final design, I relocated the Arduino Uno R4 Minima. Reason being while I was testing, it malfunctioned and the water sprayed onto the Arduino and soaked it. Fortunately, I was able to dry it off.I also changed a few other things,I removed the lego box holding the fire sensor,I bundled up the wires closer together and I removed the spray nozzle because it was too bulky so I switched out for a different one and put valves on the tube because it was a useful for testing and helped us hold in the new nozzle we installed.
## The Nozzle 	Here is the nozzle with a spray nozzle at the end of the pipe.On the top the flame sensor is mounted and attached by zip ties the end of the fire sensor has some tape so it helps the robot pinpoint it more precisely making it easier to extinguish the flame.

	Preparing the parts for the project.