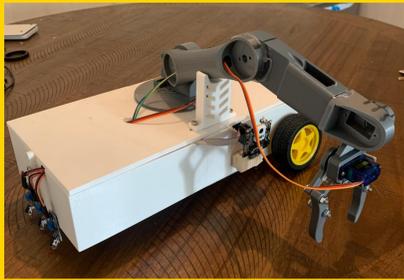




Introduction

As the need for productivity and efficiency in manufacturing and distribution centers increases, autonomous robots are here to solve these issues.



Objective

The purpose of this project was to increase the productivity and efficiency in manufacturing and distribution of product goods, so that goods that increase the comfortability of living remain affordable and even obtainable to countries with high poverty.



Features

Some features of our autonomous robot include IR sensors (Figure 3) to follow its own path to sort products. Another is a pixy 2 (figure 2) object detection system to detect specific items to sort as desired. Lastly, the robotic arm (Figure 1) is used to grab products to move them to any desired location.

Timeline of Project Development

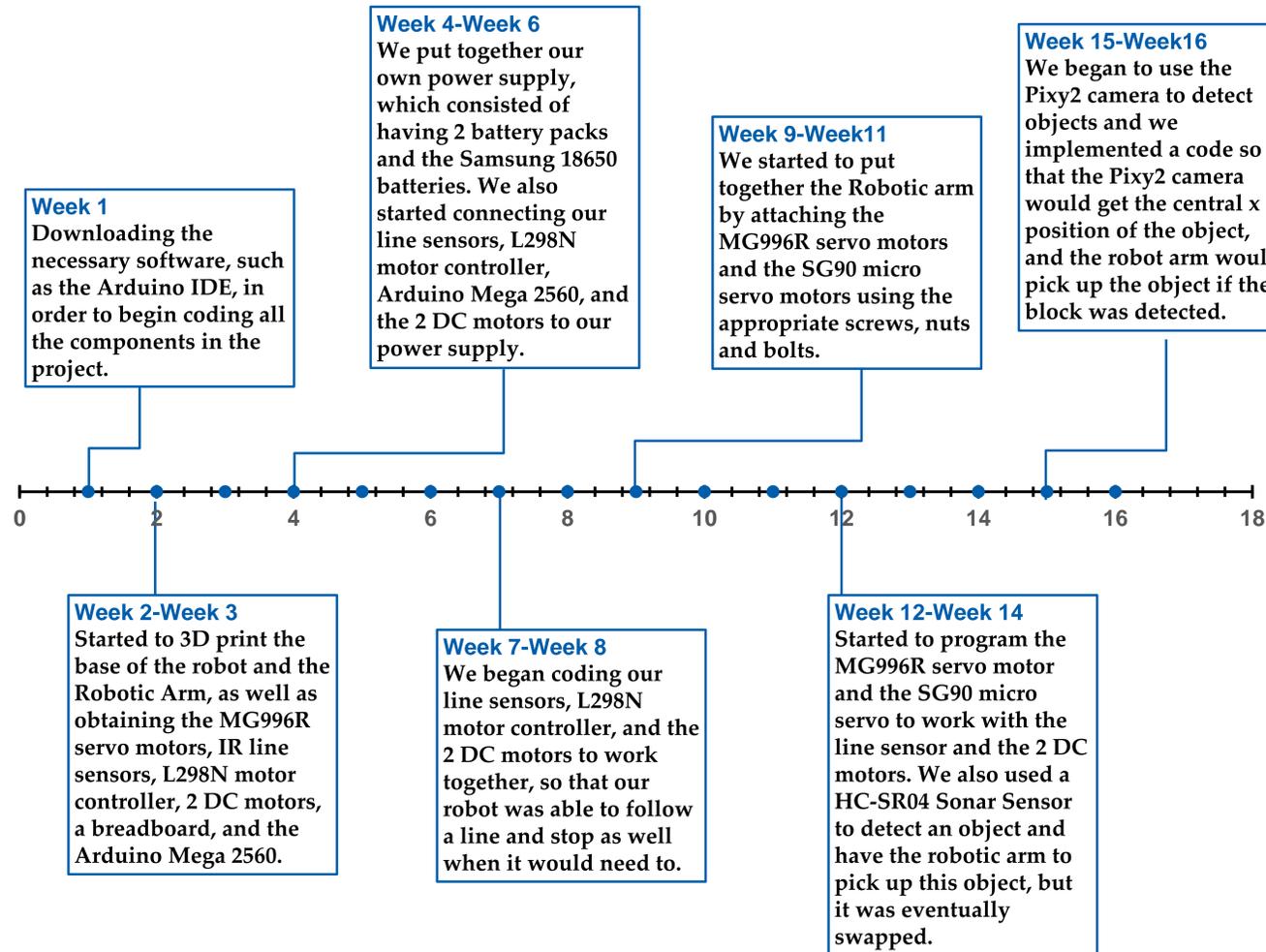


Figure 1: Robotic Arm

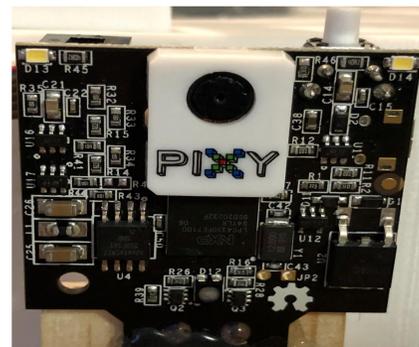


Figure 2: Pixy 2 camera

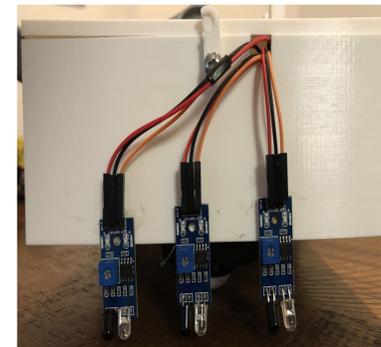
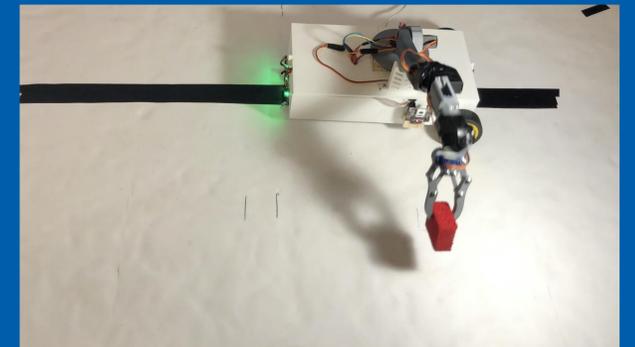


Figure 3: IR line sensor

Results

The autonomous robot is about to sort blocks (simulated as pallets in a warehouse) without human communication to reduce the use of human error and increase productivity, hence keeping the cost of labor to produce goods down.



Final Remarks

The majority of the time was spent on coding the autonomous robot, to work as intended without much human interference. Our team contributed to the project even when a member lived out of town; each member managed themselves to make it a priority to meet at agreed times and to complete the tasks at hand.

