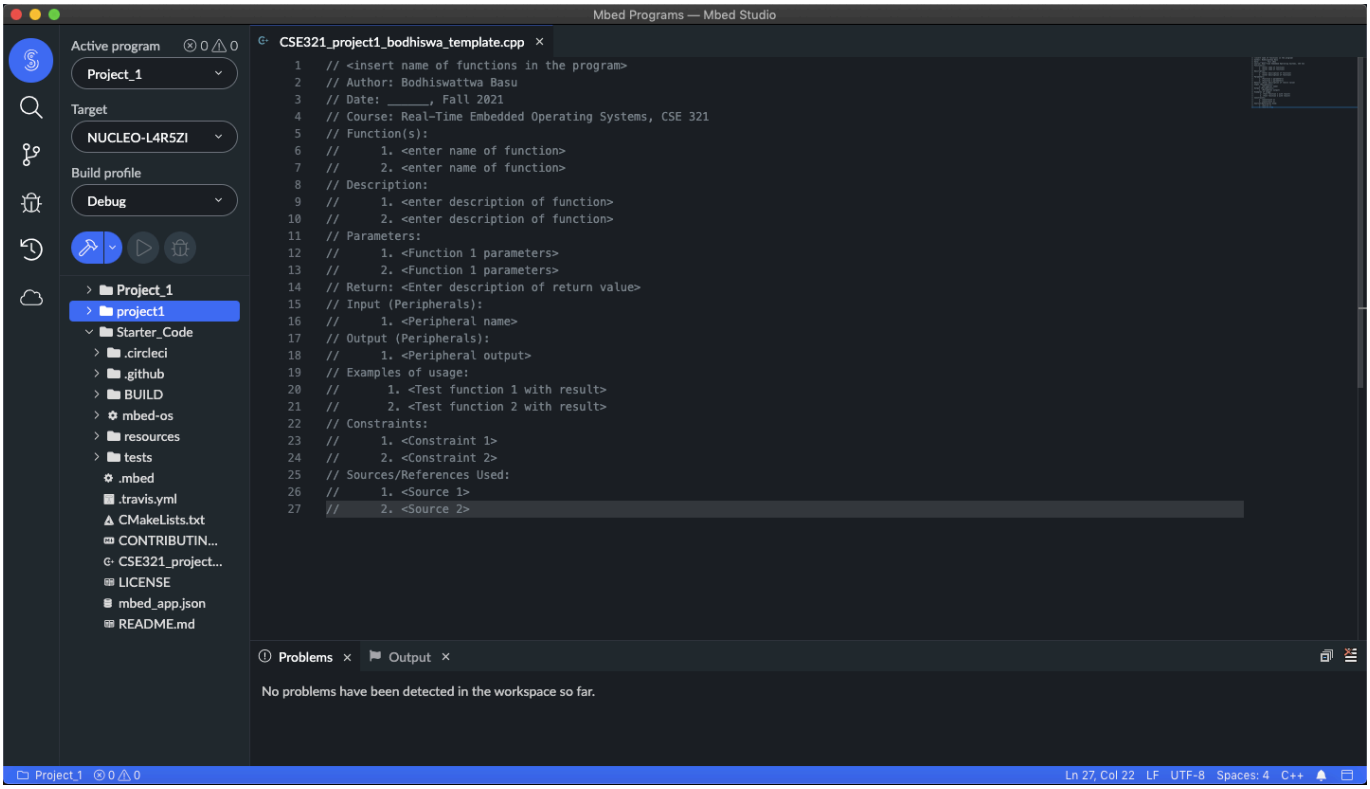
Bodhiswattwa Basu

CSE 321 Project 1

PART 3: Creating Your Code Template



PART 4: Setting Up Git

Username: bodhiswa

PART 5: Establishing Good Planning Practices

Problem: An IoT device is needed for controlling traffic on campus based on geese proximity. These are special geese, and they need to stay safe. The device will be programmed with a standard embedded OS and will make use of sensors for detecting traffic and geese. The traffic is controlled by a single light that will stop traffic in all directions, when needed, to protect the geese by turning red. When traffic can flow, the light blinks red and is treated as a stop sign.

Step 1: ASK (To identify the needs and constraints)

1. NEEDS:

- Client needs a traffic control system.
- Number 1 priority: Protect geese.
- Traffic is controlled by a SINGLE light.
    - This will stop traffic all directions.
- When light stays red, traffic STOPS.
- When light blinks red, traffics FLOWS.

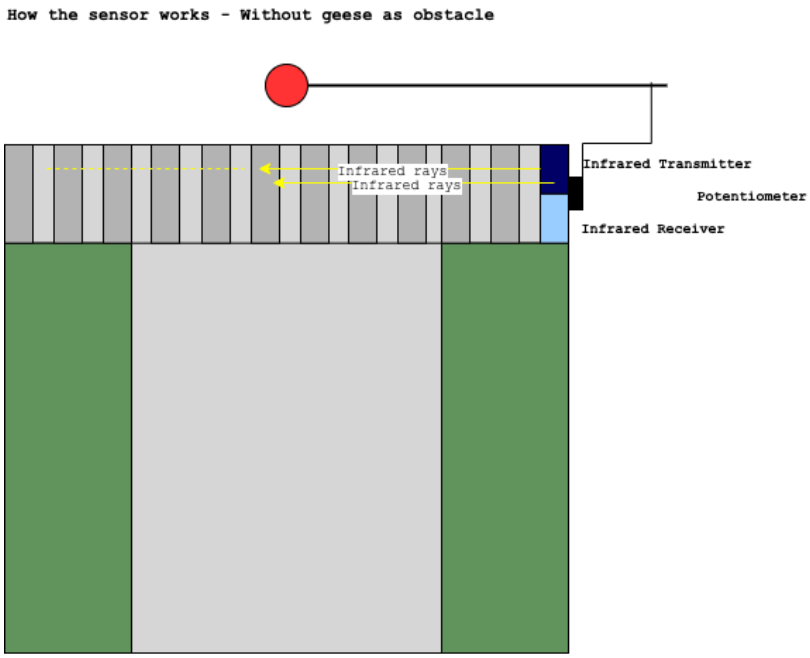
2. CONSTRAINTS:

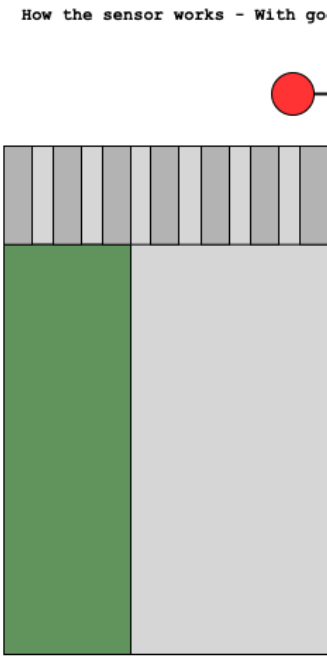
- Need more information about the cross-section of the road to implement system effectively.
- Sensor must be at a lower height to be able to detect geese.

Step 2: RESEARCH/IMAGINE

The sensor that will be used for the implementation of the traffic system is based on infrared transmission and receival. It consists of three components, an infrared transmitter, a potentiometer and an infrared receiver. The sensor is functionable according to the reflecting character of the object. If there are no obstacles (in this case, goose/geese), the emitted infrared ray will weaken with the distance it spreads and it finally disappears. If there is an obstacle, the infrared rays will encounter it and the rays will be reflected back to the infrared receiver. The infrared receiver detects the signal and confirms the obstacle in front.

The following is a schematic representation of how the sensor works.





The way that this system can be implemented is through the potentiometer. The potentiometer signal that tak
will let us know if there are any geese on the way of the flow of traffic.

STEP 3: PLAN

The implementation of this plan will be based on the signal generated by the potentiometer which is read fro
following is an flowchart that describes the process that dictates how the traffic will flow according to if there

Flowchart for implementation of traffic system