1. Read 'The Task' in the Lab 3 description, then explain which motors and sensors you are using for each part of the task and what type of robot you are building.

In the first part of the project, we will be using two motors for the wheels to move forward and two bump sensors to detect when the wall has been reached. For the second part of the lab, we will use the same motors and sensors as before, only using the bump sensors as an edge case if the robot runs into the wall. On top of that, we will also be using the ultrasonic sensor to detect distance from the wall. In order to calculate how much the robot has traveled, we will be using the motors and forward kinematics to update robot position in memory.

1. Draw a flowchart representing your approach.
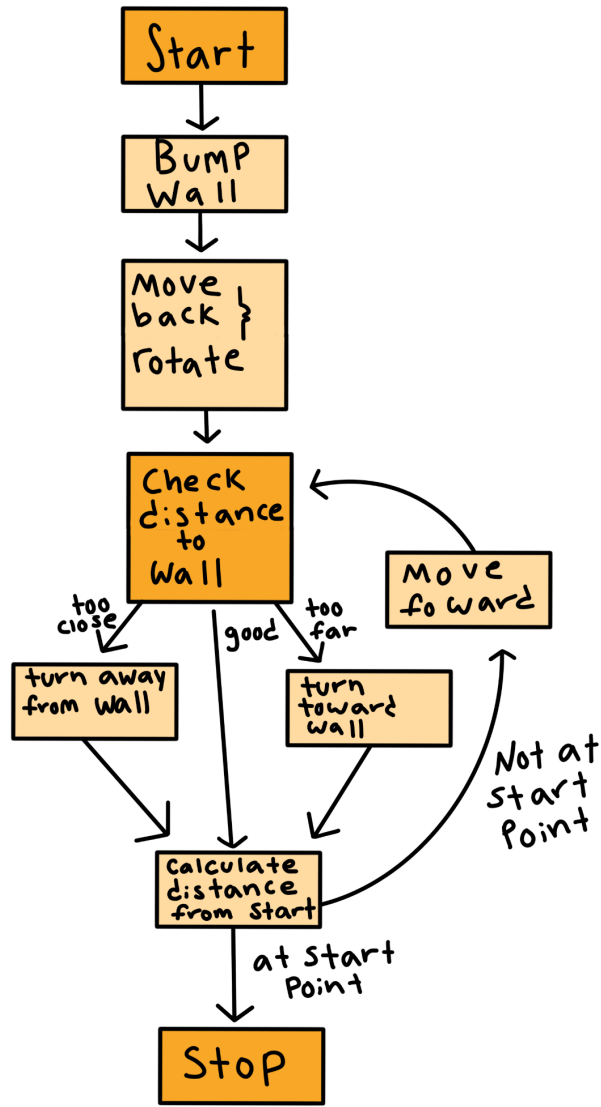
1. Turn your flowchart into pseudocode. Think about the hardware you will use, the different states the robot may be in at any given time and any edge cases that may arise.
- While(bumper not bumped)
  - Move forward
- Robot_beep
- Turn_robot to face right
- Ideal_dist = 20cm
- X = 0, y = 0
- Move robot along wall

- Update x, y
- While (x != 0, y != 0)
  - If (bumped)
    - Turn robot away from wall
  - Error = ideal - current distance
  - Update motors based off error (proportional controller)
- Robot_beep
- Return_to_start