**Design Document**

This program is a game that simulates a robot moving around an arena while interacting with other objects in the arena. The goal of the game is to maneuver the robot to the home base before the robot’s battery runs out.

The robot is controlled by the user using the arrow keys. The up arrow key speeds up the robot while the down arrow slows it down, and the left arrow key turns the robot left while the right arrow key turns the robot right. The robot contains a battery and a sensor. The battery drains as the robots runs and depletes faster as the robot moves faster and depletes slower as the robot moves slower. The battery also ends the game with a loss when it runs out. The sensor is used to tell if the robot has hit an object or a wall and adjusts the heading of the robot if there is a collision.

Obstacles in the arena include general obstacles, a recharge station, and a home base. General obstacles are stationary objects that cause a loss of charge to the robot if the robot collides with them. The recharge station is a stationary object that gives the robot a full charge when the robot collides with it. The home base is the only other mobile object in the arena and ends the game with a win if the robot collides with it.