# High End Version

Requirements: The high-end “intelligent” robot. This robot should only clean the dirty parts of the floor. The battery life of the high-end robot is poor.

# Main Script

## highend.m

%the driver script for the highend robot

%Constants

BatteryLife = 250;

Smart = true;

%Get the map of the floor by pulling it from sensors or directly from the user

map = mapLoader(Input(filename));

%Find the optimal path, passing along the necessary info

route = pathFinder(map,batterylife, smart);

%Move robot along path

frames = mover(route, map);

%Display movie of what the robot did

Movie(frames);

# Functions

## mapLoader.m

map = maploader(filename)

%maploader loads the file into a usable format

% Input Args

% filename = name of the file to be parsed

% Output Args

% map = returns a 2-dimensional matrix of variable size

Check if the filename is valid, if not prompt for user input

Parse filename extension, determine file type

Switch appropriately to the file type

If not a supported file, return an error with a blank map

## pathFinder.m

route = pathFinder(map,batterylife, smart);

%pathFinder creates a route for the robot to travel

% Input Args

% map = name of the file to be parsed

% batterylife = number of spaces it can clean before recharging

% smart = boolean value to tell whether this cleans everything or just the dirty areas

% Output Args

% route = returns a 3 column and undefined row length listing of x, y, floorstate

Checks for the place to start

While floorstate is dirty, clean the floor

Begins route finding from the start location

Checks every time to see if the battery is used yet

## mover.m

frames = mover(route, map);

%maploader loads the file into a usable format

% Input Args

% route = 3 column and undefined row length listing of x, y, floorstate

% Output Args

% frames = returns a 3 column and undefined row length listing of x, y, floorstate

While Route is not at the end

Move the robot to the next space

If dirty, clean the floor

Take a picture