Instructions:

(1) I assume you have downloaded the zip file and expanded it to get at this file.
(2) Start Matlab
(3) Follow the directions for installation in the User Guide PDF file that comes with the simulation package.
(4) In Matlab, type the command "SimulatorGUI" in the matlab command window. This will cause a GUI window to be created.
(5) In the window, you should do the following:
    a. Press "Load Config" Button: From the "MTJ_FILES" in the unzipped directory, select mtj_config.txt
    b. Press "Load Map" Button: From the "MTJ_FILES" in the unzipped directory, select mtj_map.txt
    c. Use "Set Position" Button to change the position of the robot. To do that, click where you want the center of the robot to be and then click where you want it to face.
    d. Press "Start" Button: From the "MTJ_FILES" in the unzipped directory, select SimFramework.m
    e. To halt the simulation, press the "Stop" Button.

Changing the simulation:

(1) You can modify the map by changing mtj_map.txt (directions in that file).
(2) You can modify the algorithm by changing SimFramework.m (directions in that file).

Miscellaneous Notes:

(1) The rover's estimated position has error in it and that error builds up over time.
(2) The sonar is more like a beam than a cone – a little unrealistic. You can control the errors in the sonar sensor through the config file ("mtj_config.txt").
(3) You might consider building up an estimated map of the room using some type of an array (likely in a subroutine you build).