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Introduction

In this problem set you will practice designing a simulation and implementing a program that uses classes.

As with previous problem sets, please don't be discouraged by the apparent length of this assignment. There is quite a bit to read and understand, but most of the problems do not involve writing much code.

Getting Started

Download and save

pset2.zip: A zip file of all the files you need, including:

- `ps2.py`, a skeleton of the solution.

- `ps2_visualize.py`, code to help you visualize the robot's movement (an optional - but cool! - part of this problem set).

- `ps2_verify_movement3X.pyc`, precompiled module for Python 3.X that assists with the visualization code. In `ps2.py` you will import the line where X matches your Python version. For example, `from ps2_verify_movement39 import testRobotMovement`

REVIEW OBJECT ORIENTED PROGRAMMING AND CLASSES

This and future problem sets will require you to know OOP. If you need a refresher, please visit this link and make sure you are familiar with these topics.

- Implementing new classes and their attributes.

- Understanding class methods.

- Understanding inheritance.

- Telling the difference between a class and an instance of that class - recall that a *class* is a blueprint of an object, whilst an *instance* is a single, unique unit of a class.

- Utilizing libraries as black boxes.

Note: If you want to use numpy arrays, you should add the following lines at the beginning of your code for the grader:

import os
os.environ["OPENBLAS_NUM_THREADS"] = "1"

Then, do `import numpy as np` and use `np.METHOD_NAME` in your code.

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