



Course > UNIT 2 > Problem... > Problem...

## Problem 6: Data Plotting

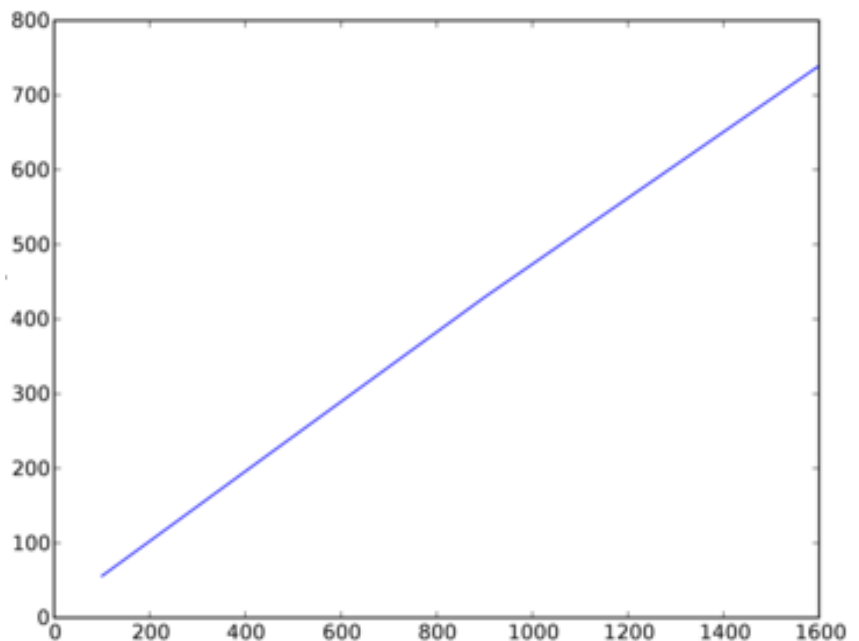
Now, you'll use your simulation to answer some questions about the robots' performance.

In order to do this problem, you will be using a Python tool called PyLab.

Below is an example of a plot. This plot does not use the same axes that your plots will use; it merely serves as an example of the types of images that the PyLab package produces.

**Note to those who did the optional visualization:** For problem 6, we make calls to `runSimulation()` to get simulation data and plot it. However, you don't want the visualization getting in the way. If you chose to do the visualization exercise, before you get started on problem 6 (and before you submit your code in submission boxes), **make sure to comment the visualization code out of**

**`runSimulation()`**. There should be 3 lines to comment out. If you do not comment these lines, your code will take a REALLY long time to run!!



**For the questions below, call the given function with the proper arguments to generate a plot using PyLab.**



## Problem 6-1

3/3 points (graded)

Examine `showPlot1` in `ps2.py`, which takes in the parameters *title*, *x\_label*, and *y\_label*. Your job is to examine the code and figure out what the plot produced by the function tells you. Try calling `showPlot1` with appropriate arguments to produce a few plots. Then, answer the following 3 questions.

1. Which of the following would be the best title for the graph?

☐ Percentage Of Room That A Robot Cleans

☐ Time It Takes 1 - 10 Robots To Clean 70% Of A Room

☐ Percentage Of Room That 1 - 10 Robots Clean

☒ Time It Takes 1 - 10 Robots To Clean 80% Of A Room ✓

☐ Time For Robots To Clean Varying Percentages Of A Room

☐ Area Of Room That 1 - 10 Robots Clean

2. Which of the following would be the best x-axis label for the graph?

☐ Time-steps

☐ Percentage Cleaned

☐ Aspect Ratio

☒ Number of Robots ✓

☐ Distance Travelled



3. Which of the following would be the best y-axis label for the graph?

☒ Time-steps ✓

☐ Percentage Cleaned

☐ Aspect Ratio

☐ Number of Robots

☐ Distance Travelled

Submit

You have used 1 of 2 attempts

## Problem 6-2

3/3 points (graded)

Examine `showPlot2` in `ps2.py`, which takes in the parameters *title*, *x\_label*, and *y\_label*. Your job is to examine the code and figure out what the plot produced by the function tells you. Try calling `showPlot2` with appropriate arguments to produce a few plots. Then, answer the following 3 questions.

1. Which of the following would be the best title for the graph?

☐ Percentage Of Room That A Robot Cleans

☐ Time It Takes Two Robots To Clean 80% Of Various Sized Rooms

☒ Time It Takes Two Robots To Clean 80% Of Various Shaped Rooms ✓

☐ Time It Takes 1 - 10 Robots To Clean 80% Of A Room



☐ Percentage Of Variously Sized Rooms That A Robot Cleans

☐ Percentage Of Variously Shaped Rooms That A Robot Cleans

Examine `showPlot2` in `ps2.py`, which takes in the same parameters as `showPlot1`. Your job is to examine the code and figure out what the plot produced by the function tells you. Try calling `showPlot2` with appropriate arguments to produce a few plots. Then, answer the following 3 questions.

2. Which of the following would be the best x-axis label for the graph?

☐ Time-steps

☐ Percentage Cleaned

☒ Aspect Ratio ✓

☐ Number of Robots

☐ Distance Travelled

3. Which of the following would be the best y-axis label for the graph?

☒ Time-steps ✓

☐ Percentage Cleaned

☐ Aspect Ratio

☐ Number of Robots



☐ Distance Travelled

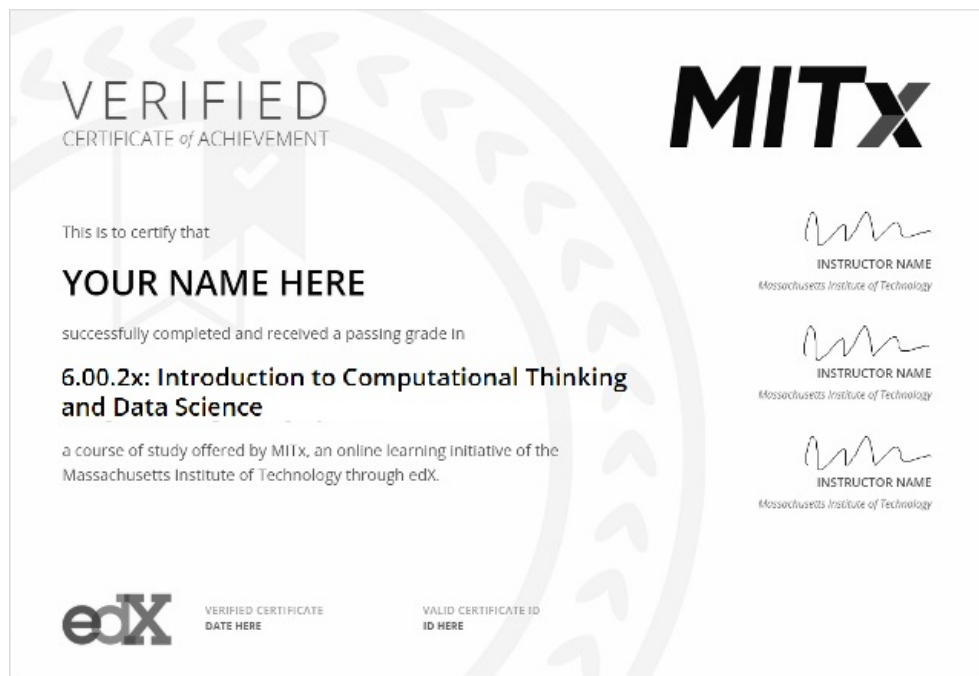
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You have used 2 of 2 attempts

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Answer for Question 2.1 is wrong

I'm sorry, but the "correct" answer for Question 2.1 is wrong. These rooms are **\*\*not\*\*** different sha...

13

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