Name _____ section _____

Exam2.

Complete Steps 7a, 7b, and 7c.

Will you be on time to class? As you can tell (or may have heard), parking at ERAU is difficult… There are a lot of parking spots, and depending on the time, you may or may not have a chance of getting an easy parking spot.
Develop a program that calculates the percentage of spots open, and depending on the time (8am or 4pm) gives you an idea of whether you'll find a spot.

USE ONLY THE KNOWLEDGE TAUGHT IN CLASS and IN THE LECTURE UP TO TODAY.

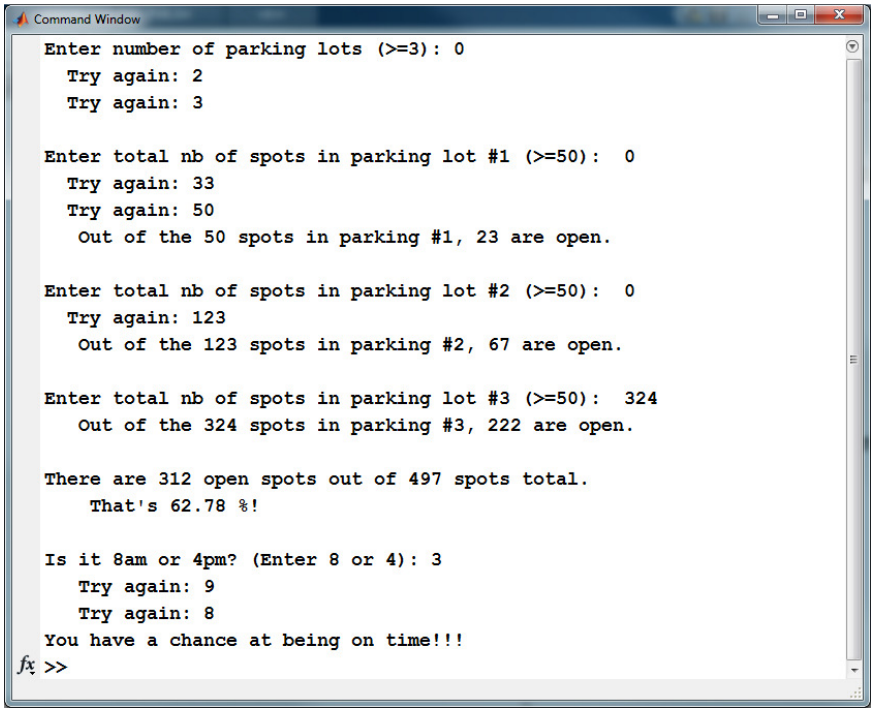
Overall idea: The program shall prompt the user how many parking lots exist. It will then proceed to ask for maximum capacity for each lot, and randomly decide how many spots are open. Based on that information, the code will calculate the percentage of spots open. Based on the time, it will indicate whether you will be on time or not. The code shall have each input error proofed.

Requirements for the code:

- The code shall prompt for the number of lots. This value must be strictly greater than 2. TRAP USER.
- Using the most appropriate loop, determine the characteristics of each parking lot:
    - Prompt the user for the maximum capacity of the lot. The prompt shall be dynamic by indicating the parking lot number. The value entered needs to be greater than or equal to 50. TRAP USER.
    - The program shall now generate how many spots are open in that parking lot. This needs to be an integer between 35% and 70% of the maximum capacity entered above. To simplify this, I recommend calculating each limit in separate variables and rounding each variable towards +infinity. Then, have MATLAB generate a random integer between those two limits, both included.
    - Display the number of parking spots open, the parking lot's number, and the number of parking spots open each time. (see example)
    - Using running totals only, keep count of the total number of spots open on campus, and the total capacity on campus.

- Display the number of spots open on campus, and the total number of spots on campus.
- Calculate and display the percentage (using 2 decimal places) of spots open.
- Prompt the user what time it is: 8AM or 4PM. TRAP USER.
- To decide whether or not you'll be on time (indicate on or not on time), base it on:
    - 8AM. On time if the percentage is strictly greater than 50%.
    - 4PM. On time if the percentage is strictly greater than 40%.

A <u>possible</u> output of the code is the following:



Rubric

Intro	3
Clean up	3
Spacing of code & output	5
Indentation	5
Algorithm	5
Prompt number of lots	4
Trap number of lots	5
Set up running totals	5
Choose loop, write it well	5
Prompt max capacity/dynamic	5
Trap max capacity	5
Random spots open	5
Display data	5
Running total open	5
Running total max	5
Display open/total	5
Calculate/display percentage	5
Prompt time	5
Error proof time	5
Message on time or not	5
Testing	5

Just like Exam1, the solution will not be posted tonight. If you did not get it done, and for a few extra points, fix your code and submit under the link for Fix_Exam2. deadline tomorrow night.