

Name: _____ Section: _____

Do you think an A is realistic?

Yes no maybe

Practice for Exam2.

England is rolling out their new subway car design (2014). They would like to plan how many cars to have to cover the demand of passengers. As an engineer, you've been tasked to do a simple analysis.

Here is an example. While I expect similar spacing in the output, the words can be your own.

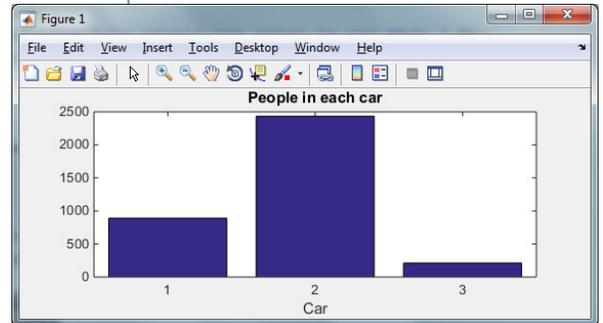
```
*** Will subway design be sufficient? ***

You have 2548 people waiting to load this brand new train!

How many train cars will there be (2<= x <=8)? 0
ERROR: (2<= x <=8). Try again: 9
ERROR: (2<= x <=8). Try again: 3

How many people can enter in car #1? 0
ERROR: (>0). Try again: -1
ERROR: (>0). Try again: 892
How many people can enter in car #2? 2435
How many people can enter in car #3? 213

All passengers got on board. It is 71.98% full
```



If not all passengers were able to load, the message is different.

```
Not enough room! 2796 people would still be on ramp!!
Plan more cars!
```

In about 40 lines total + testing.....

After a brief intro to the user (3pts), MATLAB should generate a random amount of people that want to take the subway. This value should be an INTEGER between 1 and 3000 (5pts). Display it (5pts). It should then prompt for the number of cars (5pts), and validate it knowing that that number needs to be between 2 and 8 both included (5pts) – (do not worry about me entering decimals. I will do what I'm told to enter a whole value). Proceed to asking the user how many people can enter in each car (10pts), showing the car's number (#1, #2, #3...) each time (5pts). Validate again, since again that number must be strictly positive (5pts). Store in a vector (5pts) for future analysis: 1) create a bar graph simply by using `bar(vector)`; title and put a legend (same as label) on the x axis (5pts). 2) Indicate whether the setup will work. If it works, calculate/display with 2 decimals how full the subway train overall is (number of passengers/ total capacity*100). If it does not work, display how many people are left on the ramp. (10pts).

Intro (5pts), cleaning up (5pts), testing 1 case for each scenario (full/ not full), showing loops work on at least one of the cases (7pts), algorithm (5pts), spacing/indent of code (5pts), spacing of output to user (3pts).

(7pts) leeway of random things that should NOT be there, that were NOT taught... etc...

PLEASE all get an A, so we can leave early on Thursday... This is an EASY exam. ☺ You will traverse on Thursday though...

Extra Credit: make sure the number of train cars is a whole value only using what was taught (+3pts) – everything else must be completed/attempted