

Name: _____ Section: _____

Exam3 Part2. Spring 2015. A little Trajectory Engineering...

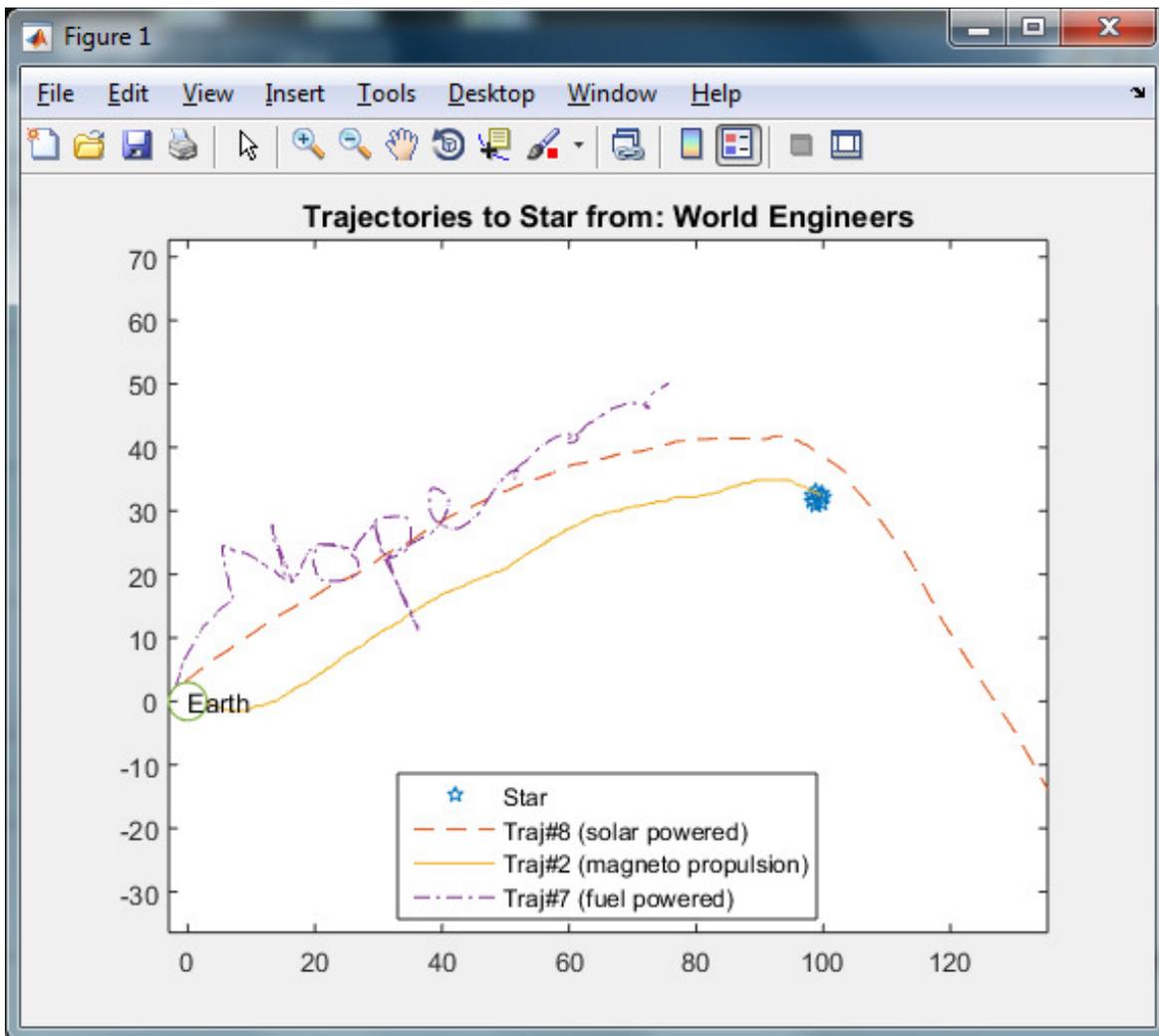
NO QUESTIONS ASKED during exam.
Open Notes. Open MATLAB. NO google.

(_____/57pts) In day 1, you created a re-usable function that would load a given file and extract data for a specific chosen trajectory. Today, you create the main code and a new function to plot 3 trajectories simultaneously!

Submit the ZIP of your folder this time! It must contain 3 excel sheets (at least), 1 main, and 2 functions.

There is NO IF OR LOOPS IN THIS PROGRAM AT ALL.

Overall: Download three of the new excel sheets online, as these engineers have different propulsion type. The overall program allows the user to visually compare three trajectories from the same file simultaneously.

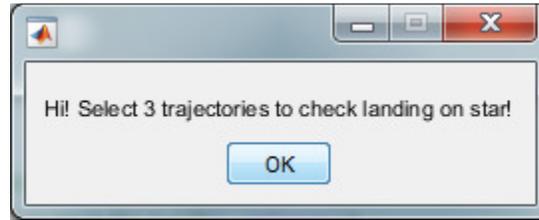


Requirements for the MAIN CODE (about 21 lines total)

(3pts) The main code shall have all the appropriate clean up commands.

(3pts) Comments/Spacing/Variable names... the usual...

(3pts) There is always an introduction (Use a message of your choice). The user must click ok to proceed. (1pt)



(3pts) Then, a file browser should open, letting the user select a file only amongst excel files.

(6pts) The function you wrote in part1 is a **Re-Usable function**. Re-use it by calling it **three separate times**, to allow the user to pick and choose 3 different trajectory numbers from the file chosen. (It is ok if the user selects twice the same.)

(5pts) The main code will then call a final function (function#2) to plot everything together. (see below)

Requirements for FUNCTION #2. Name it appropriately (1pt) (about 20 lines)

- (3pts) It has 13 parameters: the x, y coordinates, the trajectory number, and power type for **each** trajectory chosen (so $4 \times 3 \text{trajectories} = 12$), and the filename
- (3pts) It returns nothing.
- (3pts) full documentation
- (3pts) comments, spacing...
- (2pts) Loads the matrix file 'planets.mat' to get the variables for the earth and the star.
- (3pts) Plots the star, 3 trajectories, and earth on the same figure. CAUTION: the earth should plot LAST to make the legend easier. Use different line types for black and white printing. (2pts)
- (3pts) Create 3 separate strings to use in the `legend()`, with the appropriate values to show (refer to picture on page1).
- (3pts) `legend()` the star and the 3 trajectories, but not the earth (since it is last, simply omit a 5th argument). Make sure it is in the best location, not overlapping the trajectories. (1pt)
- (3pts) Use the `text()` command to display the word 'Earth' at location (0,0)
- (3pts) Place a title that shows the filename without the extension (refer to picture on page1)
- (1pt) Make sure Earth looks like a circle, not an oval!

QUESTION:

Between the engineers from Canada, which trajectory made it to the star? _____ (1pt)

Using the World Engineers, which trajectories are completely weird ☺? _____ (2pt)

**DONE DONE DONE DONE!!! See you Wednesday for a last lab (graded)
Submit final project by Tuesday night 11:59PM.**