

Name: _____ Section: _____

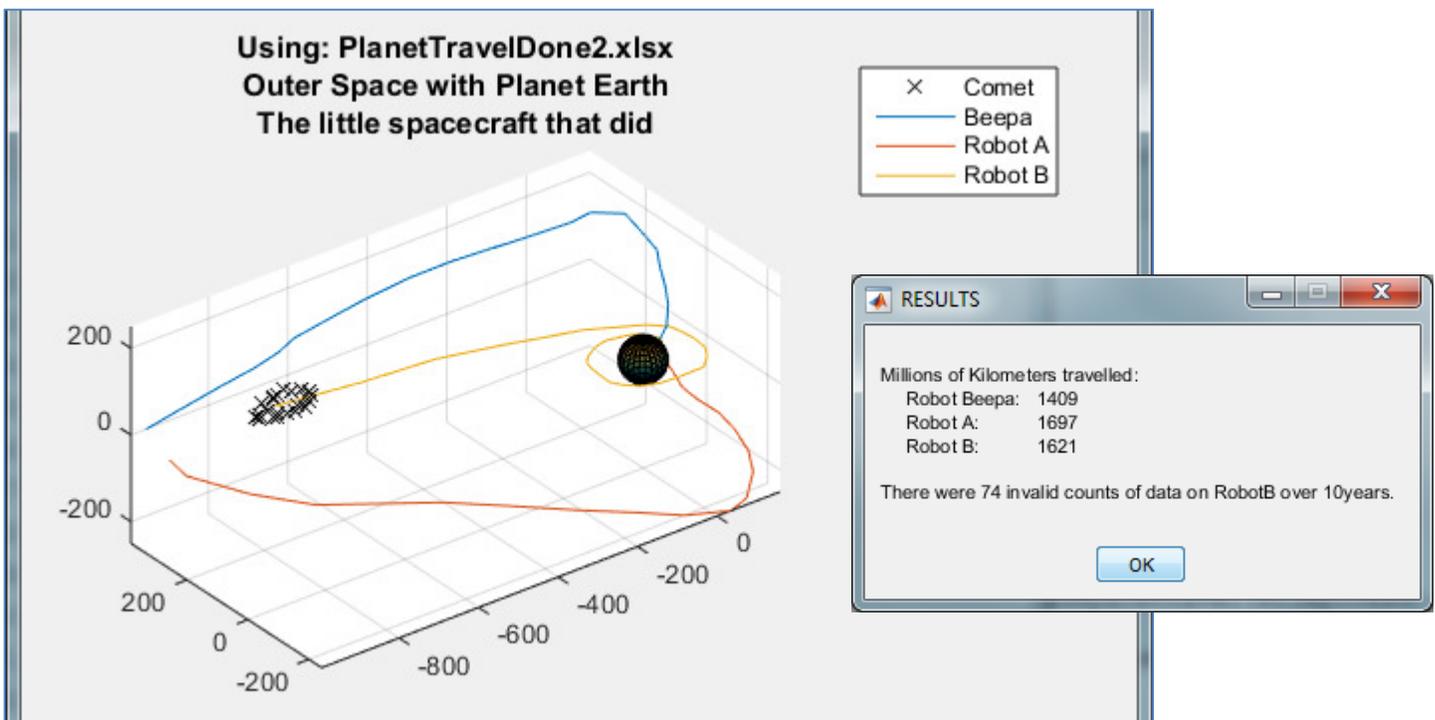
Exam3. Part2. Fall 2014. Spaceship traveling to a comet ____ /40pts

You should already be ready, but just in case, work in a FOLDER so you can ZIP everything before you submit! ALL files must be in the same folder. HUGE penalty if it crashes because files are missing. You have practiced this many times, so be confident and cautious. There should be 8 files: 1 main, 4 functions, 2 excels, and 1 mat. Three of those files are provided on Blackboard, under the link for the Exam3_part2. A new excel sheet, a function you will need to use, and planet.mat.

Today, create:

- a main code – **about 19 lines, (13 should already be done by now...)**
- a function `graphicalResult()` – **about 19 lines**
- and another function `distanceAnalysis()` – **about 17 lines**

Each description is provided below. Feel free to code in different order, but keep the algorithms **in order**.



THERE ARE NO LOOPS OR IF IN THIS CODE. DON'T BOTHER.

The main code:

- (1pt) intro at top
- (1pt) clean ups
- (3pts) let the user pick the excel sheet to analyze using `uigetfile()`. Remember there are now 2 excel sheets.
- (3pts) load/filter the good data using the function `loadSpaceTravel()`, from exam3 part1.
- (3pts) plot the comet, the planet and the robots, using `graphicalResult()` (see algorithm below)
- (3pts) indicate the distances each robot travelled, as well as how many invalid data occurred using the function `distanceAnalysis()` (see algorithm below).

(see back page for functions)

The function `graphicalResult ()`

- (2pts) has 13 parameters: each x,y,z coordinates, as well as the name of the file picked
- (1pt) has no return values
- (1pt) complete documentation
- (1pt) comments, spacing, etc.
- (3pts) use `plot3 ()` to plot each robot path. For the comet, use a marker and the color black (k) only – NO line.
- (1pt) Put a legend, turn the grid on, hold on, and make the axis equal.
- (3pts) upload the variables from `planet.mat`. Use `surf ()` to display the planet. (Keep it super simple!)
- (2pts) Create a dynamic title that shows which file got picked, and introduces the plot. (see picture).

The function `distanceAnalysis ()`

- (2pts) has 10 parameters: the x,y,z coordinates of each robot, and the invalid count (from Exam3_part1)
- (1pt) has no return values
- (1pt) complete documentation
- (1pt) comments, spacing, etc.
- (3pts) call the function `distanceTravelled ()` three time, to calculate the distance travelled by each robot. *DO NOT DARE MODIFY MY FUNCTION. IT WORKS. IT WAS TESTED. JUST CALL IT.*
- (2pt) create a sentence that shows the result, as shown above. It should display the millions of kilometers traveled by each robot, and the invalid counts for Robot B.

(2pts) Once complete, run your code **with the new excel sheet**, and fill in this table!

Distance by Beepa:	
Distance by RobotA:	
Distance by RobotB:	
Count of invalid:	
Which robot made it to the comet ?	

(BONUS +2): It's important to follow the news... What's the name of the actual robot that made it to a real comet recently: _____ . If you can't remember the name, state 1 interesting fact for this robot: