Name: _____ SECTION: _____

Exam3 – Wednesday

YOU HAVE 50MINUTES + 1hr to complete this part. Feel free to leave when done BUT
do not share or talk about this exam to others until the day is OVER at 6pm.

_____ /129 pts CODING

At this time, your EXAM3 folder should already have a main code, the function from Wednesday AND the two excel files: 1900s and 2000s. The excel files are online if you don't have them yet. At the end of the hour, ZIP and submit. ZIPPING will take longer than usual, due to the size of the excel sheets. Submitting will also take longer. TAKE THAT DELAY into account.

OVERALL: After selecting a specific decade, the user will select two countries and see their aircraft accident report side by side using bar graphs. For example, this is 2015, between France and the United States
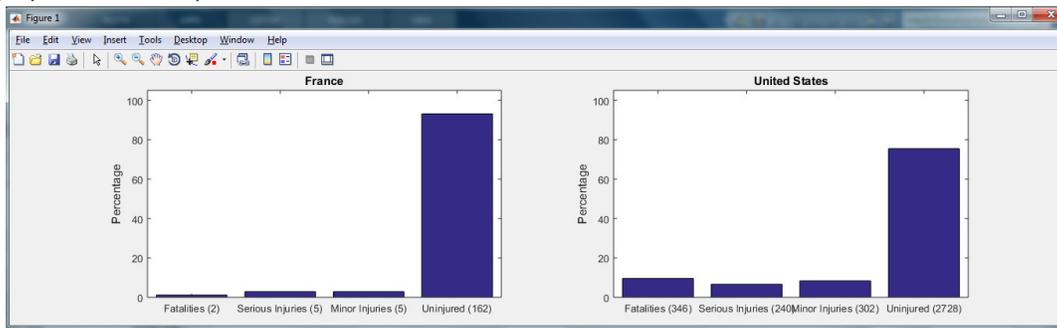
NO LOOPS. NO IF.

LOC = "Line of Code"

This main code is as usual graded on comments, indents, skipping lines, variable names, semi-colons and clean up commands (10pts). The main code:

1. (3pts) lets the user select the data file they want, through the use of a browser window. (1 LOC)
2. (5pts) calls the function from Wednesday, and collects the 2 return values: the numerical array that contains only the rows pertaining to the year selected and 4 columns (Total Fatal Injuries, Total Serious Injuries, Total Minor Injuries, and Total Uninjured) AND a cell-array that contains all the countries (column *Country*) for the year selected. (1 LOC)
3. calls twice a function described below as `dataCountry()`. This will collect two different sets of data for two different countries, 1 after the other. (2 LOC)
4. calls a final function that displays the bar graphs side by side (1 LOC). This function will call another function provided to you on Canvas called `createBarAndLabels()`.

The function dataCountry () (~19lines total, ~8real LOC)
The function is set up properly (4pts). The function has a clear/brief/complete documentation (3pts). An author/section is indicated, as in all files (2pts). Comments, indent, skipping lines are a must, variable names are descriptive, semi-colons are as needed (5pts).

This function:
(5pts) Has 3 parameters:
- A variable named `flag`, which will be a numerical value (for example 1, or 2) in the call.
- The numerical array and the cell array returned by Wednesday's function

(5pts) Has 5 return values:
- The total count of fatal accidents, the total count of serious injuries, the total count of minor injuries, and the total count of uninjured
- The name of the country chosen. This MUST be a `char` variable, NOT a cell-array with a `char` inside. Otherwise the function `createBarAndLabels` () mentioned earlier will not work.

This function makes the country names unique (5pts) and offers them to the user in a `listdlg()` box (5pts). This box should prevent the user from selecting multiple countries (3pts). The prompt string in the dialog box should be dynamic. Use the `flag` variable to create the string 'Choose country #_' (5pts). Extract the actual name of the country chosen and return it. Also, determine the rows where that country is located (5pts) and slice the numerical values associated with that country (5pts). Count the total amount in each category and return each one separately (5pts).

(10pts) Once done with this function, call it TWICE in the main code. Hardcode the flag to 1 in the first call, and 2 in the second call. This will allow to pick a country #1, and a country #2.

Your last function that displays the bar graphs side by side (your choice of name) (~15lines total ~4real LOC)
The function is set up properly (4pts). The function has a clear/brief/complete documentation (3pts). An author/section is indicated, as in all files (2pts). Comments, indent, skipping lines are a must, variable names are descriptive, semi-colons are as needed (5pts).

This function:
(5pts) Has no return values, but has 10 parameters (5pts):
- The two names of the countries picked
- The count of fatal accidents for country1, and for country2
- The count of serious injuries for country1, and for country2
- The count of minor injuries for country1, and for country2
- The count of uninjured for country1, and for country2

This function plots sides by side the two country's aircraft data. To do this, the code inside this function is set up in the following order (5pts):

```
subplot(1,2,1);
<1 LOC for country1 goes here>

subplot(1,2,2);
<1 LOC for the 2nd country goes here. Really a copy/paste and change a little.>
```

For each country, call `createBarAndLabels()` with the proper arguments (10pts). This function is provided on Canvas. Download and use it, please do not modify its content. Follow the documentation of that function to call it properly.

When done with this second overall function, call it in the main code to show the bar graph. (5pts)
* Note: The legend will be 'squished' at first, but make the figure full screen and all should be good.