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```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132
% Program Description
%   ...
%
% Assignment Information
%   Assignment:    PS 02, Problem 3
%   Author:       Harith Kolaganti, hkolagan@purdue.edu
%   Team ID:      005
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

a. Import all the data from both data files using the appropriate MATLAB built-in functions for the provided data file formats (i.e. .csv, .txt).

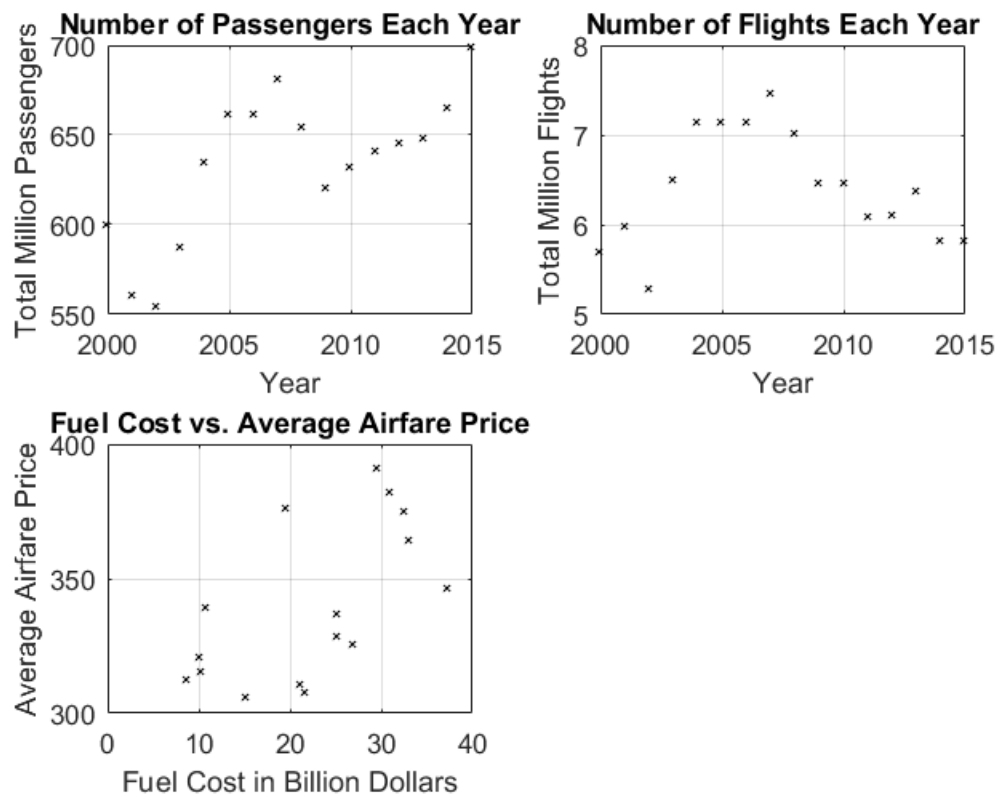
```
% b. Extract each data column into separate vectors, just as you did
%    in Problem 2. Use
%    descriptive variable names and add comments to explain each
%    variable. Include units in
%    the comments, where applicable.
csv_file = 'Data_US_airlines.csv';
Fuel=csvread(csv_file, 1, 0);
cost = Fuel(:,3); %Fuel cost in billions $$$
price = Fuel(:,6); % Fuel price in dollars/gallon
year = Fuel(:,1); % Year
consump = Fuel(:,2); % Fuel consumption billions of gallons
passenger = Fuel(:,4); % Total passengers in millions
num_flight = Fuel(:,5); % Number of flights
airfare = Fuel(:,7); % Average Airfare in dollars
txt_file = 'Data_adj_airfare.txt';
adj_fare = dlmread(txt_file);
```

```
year2= adj_fare(:,1); %year
avg_fare= adj_fare(:,2); %adjusted average fare dollars
```

TRAVEL & AIRFARE PLOTS

a. Create a figure that contains a 2x2 arrangement of subplots. You will use the two subregions in the left column and only the top subregion in the right column, as follows:

```
% b. Subplot A must be a scatter plot that shows the number of
    passengers each year (i.e.,
    % 2000-2015).
subplot(2,2,1)
plot(year, passenger, 'kx', 'markersize', 3)
xlabel('Year')
ylabel('Total Million Passengers')
title('Number of Passengers Each Year')
grid
% c. Subplot B must be a scatter plot that shows the number of flights
    each year.
subplot(2,2,2)
plot(year, num_flight, 'kx', 'markersize', 3)
xlabel('Year')
ylabel('Total Million Flights')
title('Number of Flights Each Year')
grid
% d. Subplot C must be a scatter plot that allows you to determine if
    fuel costs affect the
    % average airfare price.
subplot(2,2,3)
plot(cost, airfare, 'kx', 'markersize', 3)
xlabel('Fuel Cost in Billion Dollars')
ylabel('Average Airfare Price')
title('Fuel Cost vs. Average Airfare Price')
grid
```



ANALYSIS

-- Q1

Q1: Examine Problem 3, Figure 1, subplots A and B. Has there been an increase in flights and/or passengers over time? What can you say about how the number of flights relates to the number of passengers? Justify your answers.

% The number of flights has decreased over time, while the number of
% passengers has increased. The overall trend of the subplot A shows a
% positive slope in the increase
% of passengers, while the overall trend of subplot B shows a negative
% slope in the number of flights.

-- Q2

Q2: Based on Problem 3, Figure 1, subplot C, is airline fuel cost a good indicator of airfare price? Justify your answer.

% No because the markers on the plot seem random with no specific
% trend. If

```
% a trend was present then airline fuel cost would be a good indicator  
of  
% airfare price.
```

ACADEMIC INTEGRITY STATEMENT

I/We have not used source code obtained from any other unauthorized source, either modified or unmodified. Neither have I/we provided access to my/our code to another. The project I/we am/are submitting is my/our own original work.

Published with MATLAB® R2016a