Contents


```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132
% Program Description
%       Allows a user to predict temperature anomaly when given year.
%   The scrpt loads data, constructs the model, displays the
%   regression information in text and in a plot
%
%
% Assigment Information
%   Assignment:          PS 04, Problem 2
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%       Team ID:             001-05
%       Contributor:         Name, login@purdue [repeat for each]
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

```
%import all the data needed from txt file
allData=importdata('Data_global_temp_anomalies.txt','\t');
year=allData.data(:,1);
temperatureAnomaly=allData.data(:,2);
```

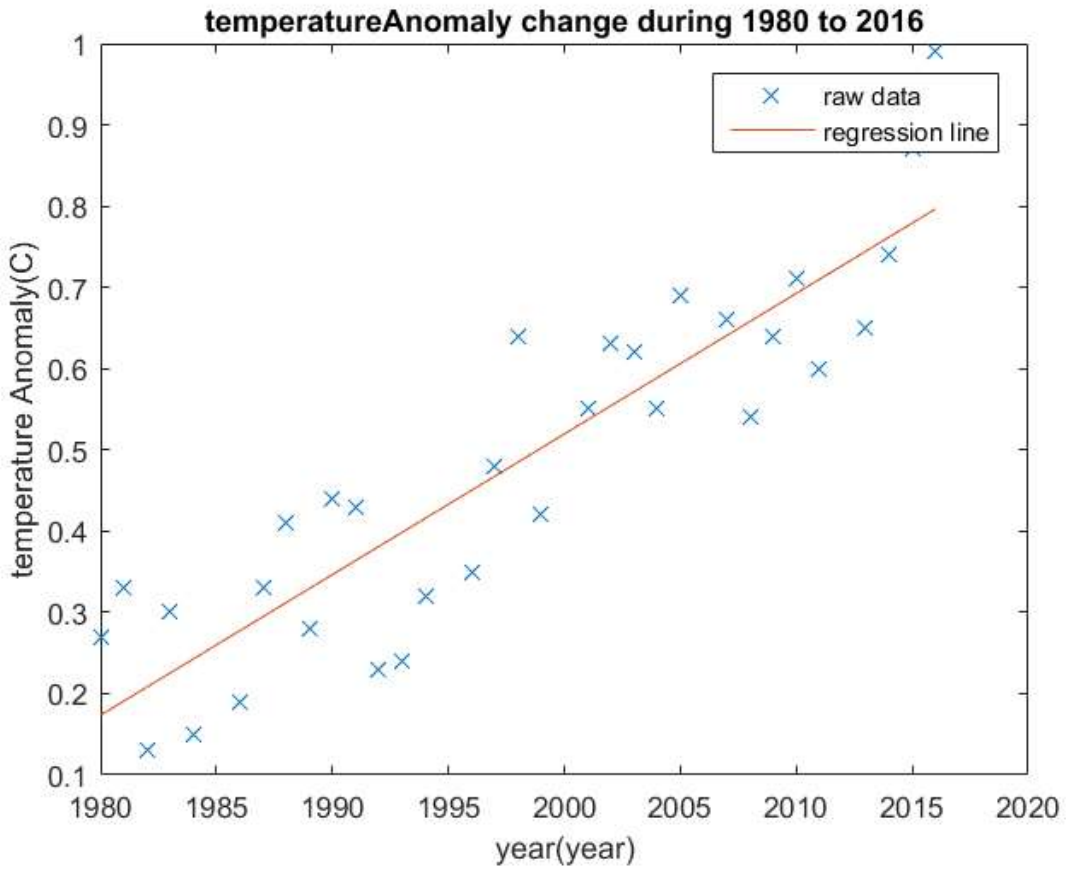
CALCULATIONS

```
%calculate the coefficient a,b for y=a*x+b
result=polyfit(year,temperatureAnomaly,1);
%calculate SSE and SST
SST=sum((temperatureAnomaly-mean(temperatureAnomaly)).^2);
SSE=sum((temperatureAnomaly-result(1)*year-result(2)).^2);
%calculate R^2
rSquare=1-SSE/SST;
```

FORMATTED TEXT & FIGURE DISPLAYS

```
fprintf('The equation is temperatureAnomal = %.4f year %.4f.\n',result);
fprintf('SST  %.4f\nSSE = %.4f\nR^2= %.4f\n',SST,SSE,rSquare);
%plot raw data;
plot(year,temperatureAnomaly,'x');
hold on;
%plot regression line
plot(year,year*result(1)+result(2));
legend('raw data','regression line')
xlabel('year(year)');
ylabel('temperature Anomaly(C)');
title('temperatureAnomaly change during 1980 to 2016');
```

```
The equation is temperatureAnomal = 0.0173 year -34.0936.
SST  1.4114
SSE = 0.2810
R^2= 0.8009
```



ANALYSIS

-- Q1

The excel and matlab use the same method to get a best fit linear regresion so they have the same result.

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.

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