Contents


```
function [slope,intercept,r_sq]=PS06_regressionUDF_fu194(dataX,dataY)
```

```
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
% ENGR 132
% Program Description
% input 2 vectors with agreed dimentions ,return the e best-fit line's
% slope, intercept, and coefficient of determination and print them in
% commmend lines
%
% Function Call
% function [slope,intercept,r_sq]=PS06_regressionUDF_fu194(dataX,dataY)
%
% Input Arguments
% dataX - independent varaible data set
%
% Output Arguments
% dataY - dependent variable data set
%
% Assigment Information
%   Assignment:     PS 04, Problem 3
%   Author:         Yuefan Fu,fu194@purdue.edu
%   Team ID:        001-05
%       Contributor:    Name, login@purdue [repeat for each]
%
%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%%
```

INITIALIZATION

CALCULATIONS

```
coefReg=polyfit(dataX,dataY,1);
slope=coefReg(1);
intercept=coefReg(2);
yFit=polyval(coefReg,dataX);
SST=sum((dataY-mean(dataY)).^2);
SSE=sum((dataY-yFit).^2);
r_sq=1-SSE/SST;
```

FORMATTED TEXT & FIGURE DISPLAYS

COMMAND WINDOW OUTPUT

```
fprintf('Best-fit Line Information:\n');
fprintf('slope = %.2f:\n',slope);
fprintf('Intercept = %.2f:\n',intercept);
fprintf('Coefficient of determination = %.3f:\n',r_sq);
```

```
Best-fit Line Information:
slope = 7.96:
Intercept = -56.13:
Coefficient of determination = 0.887:
```

ANALYSIS

--- Q1

when run script, the all the variable used will be saved in workspace, but when use UDF, nothing will be added to workspace

--- Q2

Only the first output value will be assigned to variable ans in workspace

--- Q3

I can see the header in doc and help , when someone want to use the function, they can see help or doc rather than open the original code of the function

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.

```
end
```

```
ans =
```

```
    7.9631
```

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