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                                CSCI3656_ProblemSet6_1.m
function f_xmid = CSCI3656_ProblemSet6_1( x1, x2, f_x1, f_x2, x_mid )

% Variables for Linear Interpolation/Extrapolation:
% f(x*) = f_xmid,      Solution/Output
% x1     = x1,         Initial x's
% x2     = x2
% f(x1) = f_x1,        Initial functions
% f(x2) = f_x2
% x*     = x_mid,      Between x1 and x2, desired function's input

% CITED DATA SOURCE:
http://www.censusindia.gov.in/2011census/PCA/A2\_Data\_Table.html

%  $P1(x) = ((x1 - x)y0 + (x - x0)y1) / (x1 - x0)$ 
f_xmid = (x_mid - x1) * (f_x2 - f_x1) / (x2 - x1) + f_x1;

scatter([x1, x2, x_mid], [f_x1, f_x2, f_xmid], 50, 'black', 'filled')
lsline
plottools

```