Contents

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4.a

```
clc;
clear;
close all;

Income = readtable('C:\Users\gu\Desktop\UCSD\Fall Quarter\COGS109\Data\Income2.csv'); %read c
sv file as input
Income;

figure(1)
scatter(Income.Education, Income.Income)
ylabel('Income in k $')
xlabel('Level of education')
title('Correlation of education and income level (1)')
```

4.b

```
mean = mean(Income.Income);
```

4.c

```
std = std(Income.Income);
```

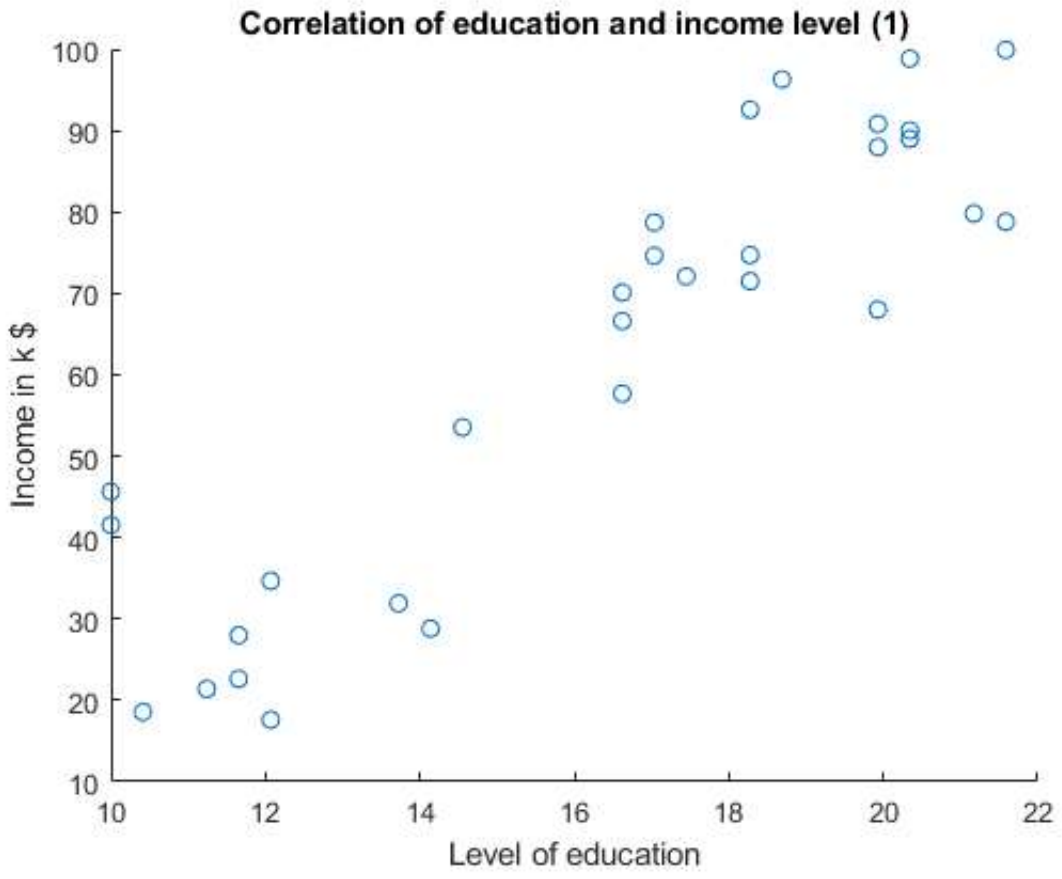
4.d

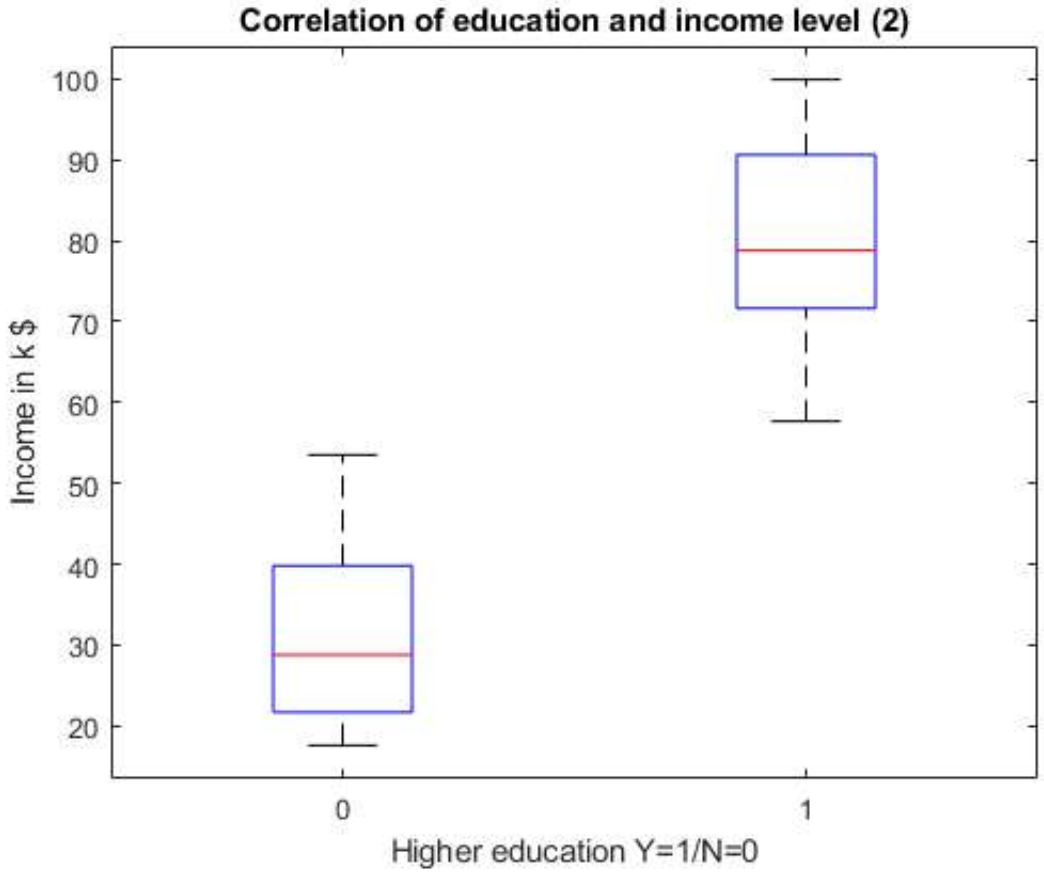
```
SEM = std/(sqrt(length(Income.Income)));
```

4.e

```
x = Income.Education;
x_categorical = (x>=16); % create categorical variable
y = Income.Income; % variable name
```

```
HigherEd1 = zeros(1,size(y,1)); %create vector 1s
HigherEd0 = zeros(1,size(x_categorical,1)); % create vector for 0s

for i=1:size(y,1); % for loop at length of y
    if x_categorical(i) == 1; % if value in x_categorical is 1
        HigherEd1(i) = y(i); % apprehend value from y to vector
    elseif x_categorical(i) == 0; % if value in x_c... is 0
        HigherEd0(i) = y(i); % apprehend value to vector
    end
end

HigherEd1(HigherEd1==0) = []; % remove all 0 values from vector
HigherEd0(HigherEd0==0) = []; % remove all 0 values from vector

figure(2)
HigherEd = [HigherEd1 HigherEd0]; % create matrix
group = [ones(1,19),zeros(1,11)]; % create groups for boxplot
boxplot(HigherEd,group);
ylabel('Income in k $')
xlabel('Higher education Y=1/N=0')
title('Correlation of education and income level (2)')

%%%%%%%%
```





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