PCA steps:

1. standardization of data

2. computing covarience

3. calculate eigen vector and eigen value: |a-lambdaI|

4.compute principal components

5.reduce dimensionality

[1 2

2 3]

|1 0

0 1|

LambdaI=[Lambda 0

0 Lambda|

|1-Y, 2|

|2, 3-Y| Lambda=(1-Y)(3-Y)-4=3-Y-3Y+Y2=

y2-4Y+3=

y=3,1(lambda values)

Eigen vectors:

|a-LambdaI|(X)

|1-?, 2|[X for 3= eigen vectors are=(2,-2)