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**1. Introduction**

This assignment will help you understand the concepts learnt in the session.

**2. Objective**

This assignment will test your skills on the concepts of statistics.

**3. Prerequisites**

Not applicable.

**4. Associated Data Files**

Not applicable.

**5. Problem Statement**

3. If the scores for a given sample distribution are:

32 32 35 36 37 38 38 39 39 39 40 40 42 45

Find the Variance and The Standard Deviation

Answer:

Variance measures how far a data set is spread out. The technical definition is “The [average](http://www.statisticshowto.com/average/)of the squared differences from the [mean](http://www.statisticshowto.com/mean/),” but all it really does is to give you a very general idea of the spread of your data.

Variance = ∑[({\displaystyle x\_{i}}××i- x̅)2{\displaystyle ^{2}}]/(n - 1)

To calculate variance first of all we have to find mean of the given dataset.

Mean of data is 32+32+35+36+37+38+38+39+39+39+40+40+42+45/14=38

Now subtract mean from each data point and square the result.

32-38= -6 = 36

32-38= -6 = 36

35-38= -3 = -9

36-38= -2 = 4

37-38= -1 = 1

38-38= 0 = 0

38-38= 0 = 0

39-38= 1= 1

39-38= 1= 1

39-38= 1= 1

40-38= 2= 4

40-38= 2= 4

42-38= 4= 16

45-38= 7= 49

After calculating the end result we will get 36 +36+9+4+1+0+0+1+1+1+4+4+16+49=162

After using the formula of variance we will get our result covariance = 162/14-1 = 162/13 = 12.46

Once we will get our variance its quite easy to find the standard deviation as SD is basically nothing but square root of variable.

Standard deviation of above data set will be =√12.46 = 3.53

2. The following table shows percent variations of two financial indices, the NYSE (New York Stock Exchange ) and the NASDAQ composite (National Association of Securities Dealers Automated Quotation) in 10 consecutive days:



Use a suitable measure to quantify the dependence between the variations of the two indices and comment on the result.