**ASSIGNMENT 2.2**

**Problem Statement-1:**

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

**Solution:**

|  |  |  |  |
| --- | --- | --- | --- |
| Numbers | Mean | Difference | Squared difference |
| 32 | 38 | -6 | 36 |
| 32 | -6 | 36 |
| 35 | -3 | 9 |
| 36 | -2 | 4 |
| 37 | -1 | 1 |
| 38 | 0 | 0 |
| 38 | 0 | 0 |
| 39 | 1 | 1 |
| 39 | 1 | 1 |
| 39 | 1 | 1 |
| 40 | 2 | 4 |
| 40 | 2 | 4 |
| 42 | 4 | 16 |
| 45 | 7 | 49 |
|  | | Total | 162 |

Therefore,

Variance (σ2) = 162/14 = 11.57142857

Standard Deviation (σ) = Sqrt(11.57142857) = 3.40168

**Problem Statement-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:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| NYSE | 0.58 | 0.01 | 0.43 | -0.14 | -1.15 | -0.15 | -1.23 | -0.88 | -1.26 | 0.08 |
| NASDAQ | 0.7 | -0.79 | 0.85 | -0.16 | -0.71 | -0.02 | -1.1 | -0.77 | -0.78 | -0.35 |

Use a suitable measure to quantify the dependence between the variations of the two indices

and comment on the result.

**Solution:**

Trend line: “y=0.7811x-0.0232”, with a positive slope.

Hence,

The two: NYSE, NASDAQ, follow a directly proportional relationship.

This fact is reinforced by the value of coefficient of determination, R²= 0.6832 and

Value of Coefficient of Correlation, R= 0.826586 ( Positive Value)

Thus both the entities follow a directly proportional relationship.