

Assignment 3 - AKICS - Python Class

Q1. Calculate the mean, standard deviation, and variance of a given array of numbers [2, 7, 3, 12, 9] using **for loop**

Q2. Calculate the mean, standard deviation, and variance of a given array of numbers [2, 7, 3, 12, 9] using a **while loop**

Q3. Calculate the sum of the first **n** natural numbers where **n = 50000** using **for loop**

Q4. Given a target element **target = 55** and an array **marks = [33, 65, 90, 45, 55.5, 88, 90, 98, 75, 45, 55, 55.1, 55.4, 45.8, 88, 90, 76, 53]** find if the **target** element is in the marks list using **for loop**

Q5. Solve **Q4** using a **while loop**

Q6. From the list of marks given in **Q4** find the number of students who have scored **more than 70 marks**

Mean Formula

Formula

$$m = \frac{\text{sum of the terms}}{\text{number of terms}}$$

m = mean

Standard Deviation Formula

Formula



$$\sigma = \sqrt{\frac{\sum (x_i - \mu)^2}{N}}$$

σ = population standard deviation

N = the size of the population

x_i = each value from the population

μ = the population mean

Variance Formula

Formula

$$S^2 = \frac{\sum (x_i - \bar{x})^2}{n - 1}$$

S^2 = sample variance

x_i = the value of the one observation

\bar{x} = the mean value of all observations

n = the number of observations