

Q1- Write the steps of the Insertion Sort algorithm for this array [22, 27, 16, 2, 18, 6]

Answer:

Step1: [2, 27, 16, 22, 18, 6]

Step2: [2, 6, 16, 22, 18, 27]

Step3: [2, 6, 16, 18, 22, 27]

Q2- Write the Big-O notation

Answer:

Step1: [2, 27, 16, 22, 18, 6] ----> n

Step2: [2, 6, 16, 22, 18, 27] ----> n-1

Step3: [2, 6, 16, 18, 22, 27] ----> n-2

Big-O notation is $O(n^2)$

Q3- Which case is the number of 18?

Answer: 18 is the average case

Q4- Write the first four steps of the Insertion Sort algorithm for this array [7, 3, 5, 8, 2, 9, 4, 15, 6]

Answer:

Step1: [2, 3, 5, 8, 7, 9, 4, 15, 6]

Step2: [2, 3, 5, 8, 7, 9, 4, 15, 6]

Step3: [2, 3, 4, 8, 7, 9, 5, 15, 6]

Steps4: [2, 3, 4, 5, 7, 9, 8, 15, 6]