**Excercise – 2 Implementing the E-Commerce Search Function (Theory)**

**1.Explain Big O notation and how it helps in analyzing algorithms.**

**Answer:**

Big O notation is the way of representing to describe the efficiency of an algorithm.

This notation helps to describe the efficiency in terms of Time Complexity and Space Complexity.

It helps the algorithm to evaluate how fast the algorithm runs on the given input.

**2.Describe the best,average and worst case scenarios for search operations.**

**Answer:**

**Best-Case:** This describes the best scenario of an algorithm.

* In search operations the best case is the finding the element at the first position this takes the compelxity of O(1).

**Average-Case:**This describes the Average scenario of the algorithm.

* In Search operations the Average case scenario is the finding the element in the midway of the collection this takes the complexity of 0(n)

**Worst-case:**This describes the least favarouble scenario of the algorithm.

* In Search operations the worst case scenario is the finding the element in the last position in a collection or the element is not found in the collection.This takes the O(n) complexity where n is the number of elements.