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Assignment 3:

Write a Python program to store first year percentage of students in array. Write

function for sorting array of floating point numbers in ascending order using

a) Selection Sort

b) Bubble sort and display top five scores.

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| """  -----------------------------------------------------  Assignment 3:  Write a Python program to store first year percentage of students in array. Write  function for sorting array of floating point numbers in ascending order using  a) Selection Sort  b) Bubble sort and display top five scores.  -----------------------------------------------------  """  # ====================================================================  # concepts learned  # Quick sort is a recursive method [method that calls itself]  # Divide - and - conquer algorithm  # very efficient for large data sets  # Big Oh Analysis -  # Worst case - O(n^2)  # Average case is - O(nlogn)  # Performance depends on pivot selection  # ====================================================================  def insert(array, marks\_of\_students): # taking user inputs  print("Enter students marks in array: ")  for i in range(marks\_of\_students):  num = float(input(f"Enter Mark{i+1}: "))  array.append(num)  def display(array, marks\_of\_students): # displaying sorted output  for i in range(marks\_of\_students):  print(array[i])  print()  def selection\_sort(array, marks\_of\_students):  for i in range(marks\_of\_students - 1):  index = i  for j in range(i + 1, marks\_of\_students):  if array[index] > array[j]:  temp = array[index]  array[index] = array[j]  array[j] = temp  print("============= Selection Sort ===============")  print("Sorted marks of students: ")  display(array, marks\_of\_students)  def bubble\_sort(array, marks\_of\_students):  for i in range(marks\_of\_students - 1):  for j in range(marks\_of\_students - 1 - i):  if array[j] > array[j + 1]:  temp = array[j]  array[j] = array[j+1]  array[j+1] = temp  print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\* Bubble Sort \*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*")  print("Sorted marks of students: ")  display(array, marks\_of\_students)  a = [] # array  b = []  m = int(input("Enter the number of marks of students we want in the array: "))  n = int(int(input("Enter the number of marks of students we want in the array: ")))  print("Which operation you want to perform?: ")  print("1. Bubble Sort")  print("2. Selection Sort")  insert(a, m)  selection\_sort(a, m)  bubble\_sort(b, n) |