12-10-23 | 1830125x | Lab-1

Task-1.1

Here we are running a Loop and a condition for checking if the number is even or odd and print the representing number of the test cases. Here if the num is divided by 2 (modulus) and return a 0 remainder then it is even if the remainder is not 0 then it is odd.

Te = O(n) 1 Loop + single task

Task-1.2

Here for calculating each operation we split the input expression into a list then separate 2 operands and the operation with variable. then we put some if condition to calculate 2 operands based on their operation. and print the result.

Task - 2

The bubble sort method will finish in on pass of the outer loop if the input array is already sorted in ascending order, giving it a time complexity of $\theta(n)$ (best cases). Since the condition arr[5] > arr[3+1] will never be true in this case. the inner loop won't swap anything.

$$TC = \theta(n)$$

Task-3

In this task the first loop in the sort_students function

we traverse all the id and marks and append them into the students list. Once we set up a inner sort function that returning it sorting key for the id and marks and return to the students list the we call the function sort_students with input id and marks then in the outer loop we traverse the student list and print the sorted id marks by calling.

Task-4

Here in the first loop we append all our inputs in a list, then we run a nested loop we split and sort all the name by alphabetical order we put some condition if else and print the order. elif condition is for same name