Basic Flow of the Program for calculating TopXSimpleLTVCustomers(x, D).

Performance Characteristics:

Heap data structure is used for displaying the top N customers with highest SimpleLTV.

We could have used simple sorting and display the top elements which is of the order n*log n, n being the number of elements. But building the heap with an efficient approach is of the order of n though my approach is still n*log n. This is one improvement that I can focus on.

Also, I think we can use stack based buffer to avoid re building of heap again and again.

Also, the initial repository, instead of Array List, we can use a Binary Search Red Black Tree as a symbol table whose key can be the key of each order.

There is a challenge of encoding and decoding the key since it has alphanumeric characters, but it can be decoded to a numeric value, if we assign each character a numeric value, like a as 11, b as 12 then for example a key ‘a12bc’ will become 11+ 1 + 2 + 12 + 13 = 37. But the current approach can have possibility of key collisions which need to be handled.

Basically, the flow is for Orders events only, the similar work flow can be followed for Site Visits and Image Upload too.