DS: systematic way to organize data inorder to use it effeciently.

DS: is all about arrangements of data and perorming eficient operations on that data (inside main memory.)

DS: is a named memory location, where data are stored, organized based on the associated operations.

ds= collection of data values, relationships among data+ collection of operations applied on the data

ds= data+operations

ds= template+algorithms

learnig ds+algo essential to write clean and optimized code.

ds operations:

1. seaching,

2. traversing,

3. sorting,

4. insertion, delation,

5. merging.

2. seaching:

\* binary search (sorted array): to find position of an element.

\* linear search: to search for element.

3. sorting:

\* insertion sort (to sort.): to check all elements from 0-n;

\* selection sort(like cards): sorts from left to right i.e sorted from unsorted.

\*\* bubble sort(swaps): compares adjusant elements,

\* merge sort: works on sorted array,

\*\* quick sort(divide&conquer): time&space complexity matters. for recursion,

\* bucket sort(like votes): divides elements into several groups,

\* heap sort: extract item from heap,

\* radix: sorts elements by first group of digit.