DATE : 22/08/2022

SCRIBED NOTES OF LECTURE

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SETS:

- A collection of well-defined distinct objects.
- Here well-defined states that membership of any element should not be ambiguous.

1. DYNAMIC SETS
2. STATIC SETS

STANDARD OPERATION ON SETS:

1)SUBSET (non cummulative):

Eg:

A is subset of B

If $\forall \{x \in A\} \Rightarrow \{x \in B\}$

- Proof by mathematical induction

  Total number of subset of a set = 2^k

  K=number of elements of the set

- Assume no. of subset of an element set is 2^k

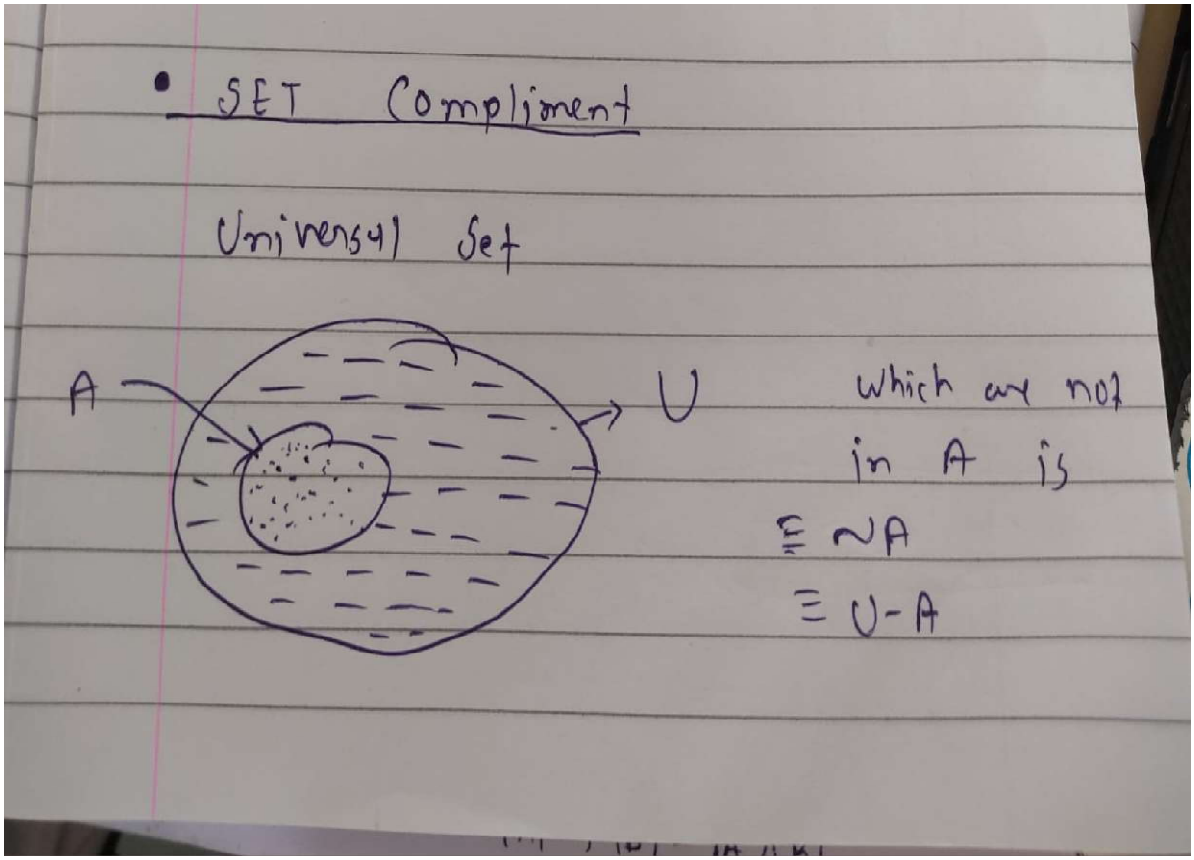
  $\forall K <= N$ consider K=N+1;

  Let the newly added element be x.

  All subset=Those include x + Those exclude x

- If $A \subseteq B$; $B \subseteq C \Rightarrow A \subseteq C$
- UNION(U) : $A \cup B = \{x \mid (x \in A) \cup (x \in B)\}$
- INTERSECTION($\cap$) : $A \cap B = \{x \mid (x \in A) \cap (x \in B)\}$

SET COMPLIMENT :



- |A U B|=|A| + |B| - |A∩B|
- |A U B U C|=|A| + |B| +|C|- |A∩B|-|B∩C|-|C∩A|+
  | A∩B∩C |