

LET'S START WITH DBMS :).

Attribute closure/closure set

Attribute closure helps us for identifying candidate keys, checking for functional dependencies, and in normalisation.

X^+ where x is an attribute or set of attribute which have all the attributes in a relation which can determine X .

Ques : Consider we have a relation R with attributes A, B, C, D, E and FD are
 $A \rightarrow B, B \rightarrow C, C \rightarrow D, D \rightarrow E$

1. Now according to the rule of Reflexivity all the attributes can determine themselves.
 $A \rightarrow A, B \rightarrow B, C \rightarrow C, D \rightarrow D, E \rightarrow E$

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2. Now according to the rule of transitivity if A determines B and B determines C, then A can also determine C and same for all other attributes.

$A \rightarrow C, A \rightarrow D, A \rightarrow E$

$B \rightarrow D, B \rightarrow E$

$C \rightarrow E$

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3. Now according to the rule of UNION if as the determinant is same we can combine dependent

For A

$A \rightarrow B, A \rightarrow C, A \rightarrow D, A \rightarrow E, A \rightarrow A$

$A \rightarrow ABCDE$

For C

$C \rightarrow D, C \rightarrow E, C \rightarrow C$

$C \rightarrow DEC$

For E

$E \rightarrow E$

For B

$B \rightarrow C, B \rightarrow D, B \rightarrow E, B \rightarrow B$

$B \rightarrow CDEB$

For D

$D \rightarrow E, D \rightarrow D$

$D \rightarrow ED$

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4. Now lets find the closure set of attributes

A- {A,B,C,D,E}

B- {B,C,D,E}

C- {C,D,E}

D- {D,E}

E- {E}

AB - {A,B,C,D,E}