Module IV

Closure of an FD

Closure of an attribute

- Closure of an attribute X is represented as X+ is the set of attributes that can be derived using inference axioms.
- F={A→B,B→C,C→D}
- Find A+
- Step 1:A+={A}
- consider left hand side of FD

- F={A→B,B→C,C→D}
- Step 1:A+={A}
- consider A→B
- A+={AB}
- Consider B→C
- A+={ABC}
- Consider C→D
- A+={ABCD}
- Since no more FDs has to consider, A+={ABCD}

Algorithm

- **Algorithm**: Determining X+, the Closure of : the set of attribute X under F

  X+= X;

  repeat

    oldX+= X+;

    for each functional dependency Y→ Z in F do

    If X+ ⊃ Y then X += X+ ∪Z;

  until (X+ = oldX+);

- Given F={A→B, B→D, AD→F, F→C}
- Find
- 1. A+
- 2.(AB)+
- 3.(B)+