

CSC343 Prep9

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1. a) $\{B, D, E\}$
b) $\{A, B, C, D, E, F\}$
c) $\{A, D, E, F\}$
d) $\{B, C, D, E\}$
e) $\{A, B, C, D, E\}$
2. a) no, closure of B, B^+ is $\{B, D, E\}$, A is not in the set.
b) yes, closure of CF, CF^+ is $\{A, B, C, D, E, F\}$, E is in the set.
c) no, closure of DF, DF^+ is $\{A, D, E, F\}$, B is not in the set.
d) no, closure of BD, BD^+ is $\{B, D, E\}$, C is not in the set.
e) yes, closure of BFC, BFC^+ is $\{A, B, C, D, E, F\}$, A is in the set.
3. **ABD**
 $A^+ = \{A, D, C, E\}$, FDs = $A \rightarrow D$

ABD
 $B^+ = \{A, B, C, D, E\}$, FDs = $B \rightarrow A, B \rightarrow D$

ABD
 $D^+ = \{A, C, D, E\}$, FDs = $D \rightarrow A$

ABD
 $BD^+ = \{A, B, C, D, E\}$, FDs = NONE

ABD
 $AD^+ = \{A, C, D, E\}$, FDs = NONE

ABD
 $AB^+ = \{A, B, C, D, E\}$, FDs = NONE

ABD

$ABD^+ = \{A, B, C, D, E\}$, FDs = NONE

Projection of S on ABD is: $A \rightarrow D$, $B \rightarrow A$, $B \rightarrow D$, $D \rightarrow A$

4. An instance of R is below. The '2' that is bold and highlighted is the redundant data, because we already had the in the first row $F(5) \rightarrow D(2)$

A	B	C	D	E	F
3	1	1	2	4	5
4	7	2	3	5	6
5	6	4	<u>2</u>	8	5