Amrit Singh

1. Given F = {a🡪b, b🡪c, c🡪 {d,e}}. What is the closure of b, {b}+?

b+ 🡪 b,c,d,e

1. Given R(a,b,c,d,e,f). Given the following functional dependency:

F = { fd1: {a,b} 🡪 {c,d,e,f}, fd2: c 🡪 {a,b,d,e,f }}.

Is R in 2nd normal form? Justify your answer.

R is in 2nd normal form. This due to the super key 🡪 {a,b}

{a,b}+ 🡪 {a,b,c,d,e,f}

1. Given R(a,b,c,d,e,f). Given the following functional dependency:

F = { fd1:{a,b} 🡪 { c,d,e,f }, fd2: c 🡪 { a,b,d,e,f }, fd3:e🡪 a}.

Is R in 3rd normal form? Justify your answer.

R is in the 3rd normal form because of the super key {c}

{a,b}+ 🡪 {a,b,c,d,e,f}

{c}+ 🡪 {c,a,b,d,e,f}

{e}+ 🡪 {a}

1. Given R(a,b,c,d,e,f). Given the following functional dependency:

F = { fd1:{a,b} 🡪 {c,d,e,f}, fd2: c 🡪 { a,b,d,e,f }, fd3: d🡪 b}.

Is R in 3rd normal form? Justify your answer.

R is in 3rd normal form because of super key {c}.

{a,b}+ 🡪 {a,b,c,d,e,f}

{c}+ 🡪 {c,a,b,d,e,f}

{d}+ 🡪 {b}