Examples: State FD and Keys

http://jcsites.juniata.edu/faculty/rhodes/dbms/funcdep.htm

Ex. All addresses in the same town have the same zip code

|  |  |  |  |
| --- | --- | --- | --- |
| **SSN** | **Name** | **Town** | **Zip** |
| 1234 | Joe | Huntingdon | 16652 |
| 2345 | Mary | Huntingdon | 16652 |
| 3456 | Tom | Huntingdon | 16652 |
| 5948 | Harry | Alexandria | 16603 |

|  |  |  |  |
| --- | --- | --- | --- |
| **SSN** | **Name** | **Address** | **Hobbies** |
| 1111 | Joe | 123 Main | hiking |
| 1111 | Joe | 123 Main | biking |
| 2222 | Mary | 321 Elm | lacross |

 ***{stuId}→{lastName}***, but not the reverse

 ***{stuId} →{lastName, major, credits, status, socSecNo, stuId}***

 ***{socSecNo} →{stuId, lastName, major, credits, status, socSecNo}***

 ***{credits}→{status}*,** but not ***{status}→{credits}***

**Trivial Functional Dependency**

The FD X***→***Y is ***trivial*** if set {Y} is a subset of set {X}

Examples: If A and B are attributes of R,

* {A}***→***{A}
* {A,B} ***→***{A}
* {A,B} ***→***{B}
* {A,B} ***→***{A,B}

are all trivial FDsand will not contribute to the evaluation of normalization.

http://www.rlvision.com/blog/method-for-determining-candidate-keys-and-highest-normal-form-of-a-relation-based-on-functional-dependencies/

R(A,B,C)

A → B

B → {A,C}

R(A,B,C,D,E,F)

A → B

B → A

{B,C} → D

C → E

R(A,B,C,D,E)

A → {B,C}

{B,C} → A,D

D → E