

Weather DB

Primary key: time

Uniquely identified specific row

Okay heres how this is going to work

Weather DB Schema:

DATA:

| Primary Key (time increment) | VAR0 | VAR1 | VAR2 | Foreign Key (Location ID) |
|---------------------------------|------|------|------|------------------------------|
| .1 | 12 | 1 | 76 | 1 |
| .2 | 12.1 | 2 | 77 | 1 |
| .3 | 12.3 | 3 | 77 | 1 |
| .4 | 12.5 | 4 | 78 | 1 |

LOCATION

| Primary Key (Location ID) | Location |
|---------------------------|---------------|
| 1 | Asheville |
| 2 | Maggie Valley |
| 3 | Fairmont WV |

Here's the thought process:

For every given data set, the Location ID will have the same value in every row. This value corresponds to another table that stores Location IDs corresponding with their actual physical location. This solves two problems:

Unique Primary Keys / Max table size

In the first DB, the primary key (immutable) will be time increment. In order to store the data of multiple locations in this DB, there would have to be an additional column for location, and X additional columns for every variable measured. If there were three variables measured, and two locations, this would require a column count of $f(x)=1+(X*4)$ where $x = \#$ of locations. One SQL table can have 1024 columns meaning the theoretical maximum number of locations for this schema would be 255

Probably going to go with a generic authentication DB that contains
User (primary key)
Password Hash
Last Login
TBD