Headstorm – Database Challenge

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To complete the challenges, I made some safe assumptions about the data.

1. The protection plan column, which is either true or false is an attribute that each user will have. That is, the user and the protection plan have a one-to-one relationship.
2. The Basic Widget order and the Advanced widget order signify the order details for basic and advanced widgets respectively. A user can make many orders of basic and advanced widgets. So, the relationship between the user and the Basic and Advanced widget order is one-to-many. The number of orders of basic and advanced widgets need not necessarily be same.

Based on the assumptions, the data can be normalized into three tables for convenience. The structure is as follows –

1. Table 1 – Users
2. Table 2 – Basic Orders
3. Table 3 – Advanced Orders

Columns in Users table –

|  |  |  |
| --- | --- | --- |
| Column | Type | Constraints/Checks |
| User\_Id | bigint | Primary Key |
| Name | Varchar(25) | NOT NULL |
| Work\_Phone | Varchar(10) | UNIQUE, CHECK (REGEXP\_LIKE(Work\_Phone, '^0\d{9}|\d{10}$')) |
| Cell\_Phone | Varchar(10) | UNIQUE, CHECK (REGEXP\_LIKE(Cell\_Phone, '^0\d{9}|\d{10}$')) |
| Email | Varchar(40) | UNIQUE |
| Address | Varchar(60) |  |
| Protection\_plan | BOOLEAN |  |

General comments –

1. The Protection\_plan column is true if the user has opted for protection, false otherwise.
2. The Work\_Phone and Cell\_Phone must be in the specified format, contain 10 digits.
3. The columns Name, Work\_Phone, Cell\_Phone and Email cannot be null.
4. The User\_id is the primary key of this table.

Columns in Basic\_Orders table –

|  |  |  |
| --- | --- | --- |
| Column | Type | Constraints/Checks |
| Basic\_Order\_ID | Bigint | Primary Key |
| User\_Id | Bigint | FK to User\_id in Users table, NOT NULL |
| Basic\_widget\_order | Integer |  |

General comments –

1. Basic\_Order\_ID is the primary key for this table.

Columns in Advanced\_Orders table –

|  |  |  |
| --- | --- | --- |
| Column | Type | Constraints/Checks |
| Advanced\_Order\_ID | Bigint | Primary Key |
| User\_Id | Bigint | FK to User\_id in Users table, NOT NULL |
| Advanced\_widget\_order | Integer |  |

General comments –

1. Advanced\_Order\_ID is the primary key for this table.