**Requirements:**

Who is donating?

What is the donor’s information?

What is the name of the toy being donated?

Is it on the wish list?

Who are the toys going to?

What are the toys unique product ID?

Toys donated must be registered with a product Number. (No homemade gifts)

Donors must have an email to provide.

Multiple toys can be donated.

Different types of toys can be donated.

Recipients receive one toy.

**Holiday Toy Drive (Rough Draft 1):**

**Donor**

- DonorName (varchar(100))

- DonorEmail (varchar(100)) (Primary Key)

- ToyDonated (varchar(100)) (Foreign Key)

**Candidate Keys:**

* DonorEmail
* DonorEmail, DonorName
* DonorEmail, ToyDonated
* DonorEmail, DonorName, ToyDonated

**Toy**

- ToyName (varchar(100)) (Primary Key)

- DonorName (varchar(100))

- IsOnWishlist (bool)

**Candidate Keys:**

* ToyName
* ToyName, DonorName
* ToyName, IsOnWishlist
* ToyName, DonorName, IsOnWishlist

**Recipient**

- RecipientName (varchar(100)) (Primary Key)

- ToyRecieved (varchar(100))

- DonorName (varchar(100))

**Candidate Keys:**

* RecipientName
* RecipientName, ToyRecieved
* RecipientName, DonorName
* RecipientName, ToyRecieved, DonorName

A screenshot of a computer screen

Description automatically generated

After reviewing my rough draft, the tables are not yet in first form due to a lack of good primary keys and rows that are not quite individual values. I changed ToyDonated to toy name to suggest one value. I changed the toy table to ToyDonated which will have the productId, number of that toy donated by each person, and whether or not it was on the wishlist. Lastly, I made ToyRecieved reflect the ToyId since it could also suggest multiple values.

**Holiday Toy Drive (Rough Draft 2):**

**Donor**

- DonorName (varchar(100))

- DonorEmail (varchar(100)) (Primary Key)

- ToyName (varchar(100))

**Candidate Keys:**

* DonorEmail
* DonorEmail, DonorName
* DonorEmail, ToyName
* DonorEmail, DonorName, ToyName

**ToyDonated**

- ToyName (varchar(100))

- ProductId (int) (Primary Key)

- DonorEmail (varchar(100))

- IsOnWishlist (bool)

- NumberOfToys (int)

**Candidate Keys: (Large Amount that would not make sense as primary keys)**

* ProductId
* DonorEmail
* ProductId, DonorEmail

**Recipient**

- RecipientName (varchar(100))

- IdOfToyRecieved (int) (Primary Key)

- DonorName (varchar(100))

**Candidate Keys:**

* IdOfToyRecieved
* IdOfToyRecieved, DonorName
* IdOfToyRecieved, RecipientName
* IdOfToyRecieved, RecipientName, DonorName

A screenshot of a computer screen

Description automatically generated

My tables are not yet in second normal form due to my toy table having some dependecies that need to be split into separate tables. IsOnWishlist and NumberOfToys would better fit in a ToyDetails relation. This will change the ToyDonated table as well to just hold ToyName, ProductId, and DonorEmail.

**Holiday Toy Drive (Rough Draft 3):**

**Donor**

- DonorName (varchar(100))

- DonorEmail (varchar(100)) (Primary Key)

- ToyName (varchar(100))

**Candidate Keys:**

* DonorEmail
* DonorEmail, DonorName
* DonorEmail, ToyName
* DonorEmail, ToyName, DonorName

**ToyDonated**

- ToyName (varchar(100))

- ProductId (int) (Primary Key)

- DonorEmail (varchar(100))

**Candidate Keys:**

* ProductId
* DonorEmail
* ProductId, ToyName
* DonorEmail, ToyName
* DonorEmail, ProductId
* ProductId, DonorEmail, ToyName

**ToyDetails**

- ProductId (int) (Primary Key)

- IsOnWishList (bool)

- NumberOfToys (int)

**Candidate Keys:**

* ProductId
* ProductId, IsOnWishList
* ProductId, NumberOfToys
* ProductId, NumberOfToys, IsOnWishList

**Recipient**

- RecipientName (varchar(100))

- IdOfToyRecieved (int) (Primary Key)

- DonorName (varchar(100))

**Candidate Keys:**

* IdOfToyRecieved
* IdOfToyRecieved, RecipientName
* IdOfToyRecieved, DonorName
* IdOfToyRecieved, RecipientName, DonorName

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Description automatically generated**

To make this database in third normal form I am going to remove ToyName from the Donor table since it is not functionally dependent on DonorEmail. I also removed DonorName from the Recipient table since it is not necessary nor is it functionally dependent on the primary key.

**Holiday Toy Drive (Final Database):**

**Donor**

- DonorName (varchar(100))

- DonorEmail (varchar(100)) (Primary Key)

**Candidate Keys:**

* DonorEmail
* DonorEmail, DonorName

**ToyDonated**

- ToyName (varchar(100))

- ProductId (int) (Primary Key)

- DonorEmail (varchar(100)) (Foreign Key)

**Candidate Keys:**

* ProductId
* ProductId, ToyName
* ProductId, DonorEmail
* ProductId, DonorEmail, ToyName

**ToyDetails**

- ProductId (int) (Primary Key) (Foreign Key)

- IsOnWishList (bool)

- NumberOfToys (int)

**Candidate Keys:**

* ProductID
* ProductID, IsOnWishList
* ProductID, NumberOfToys
* ProductID, NumberOfToys, IsOnWishList

**Recipient**

- RecipientName (varchar(100))

- IdOfToyRecieved (int) (Primary Key) (Foreign Key)

**Candidate Keys:**

* IdOfToyRecieved
* IdOfToyRecieved, RecipientName

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Description automatically generated**