Group number : 39

Members : Shahmat Uzaer Reza Nafee, Andy liu

STEP 2:

Schema:

1. Items (Item ID, Item Title, Creator Name, Genre, Format)
2. Borrowing (Borrowing ID, Item ID$^{FK\text{-}Items}$, User ID$^{FK\text{-}Users}$, Due Date)
3. Users (User ID, User Name, Email, Phone number)
4. Fines (Fine ID, Borrowing ID$^{FK\text{-}Borrowing}$, Fine Amount, Fine Date)
5. Events (Event ID, Event Name, Description, Event Date, Room ID$^{FK\text{-}Rooms}$)
6. EventParticipants (Event ID$^{FK\text{-}Events}$, User ID$^{FK\text{-}Users}$)
7. EventPersonnel (Event ID$^{FK\text{-}Events}$, Personnel ID$^{FK\text{-}Personnel}$)
8. Rooms (Room ID, Room Name, Capacity)
9. Personnel (Personnel ID, Staff Name, Position, Email, Phone number)
10. FutureItems (Item ID$^{FK\text{-}Items}$, Arrival Date)

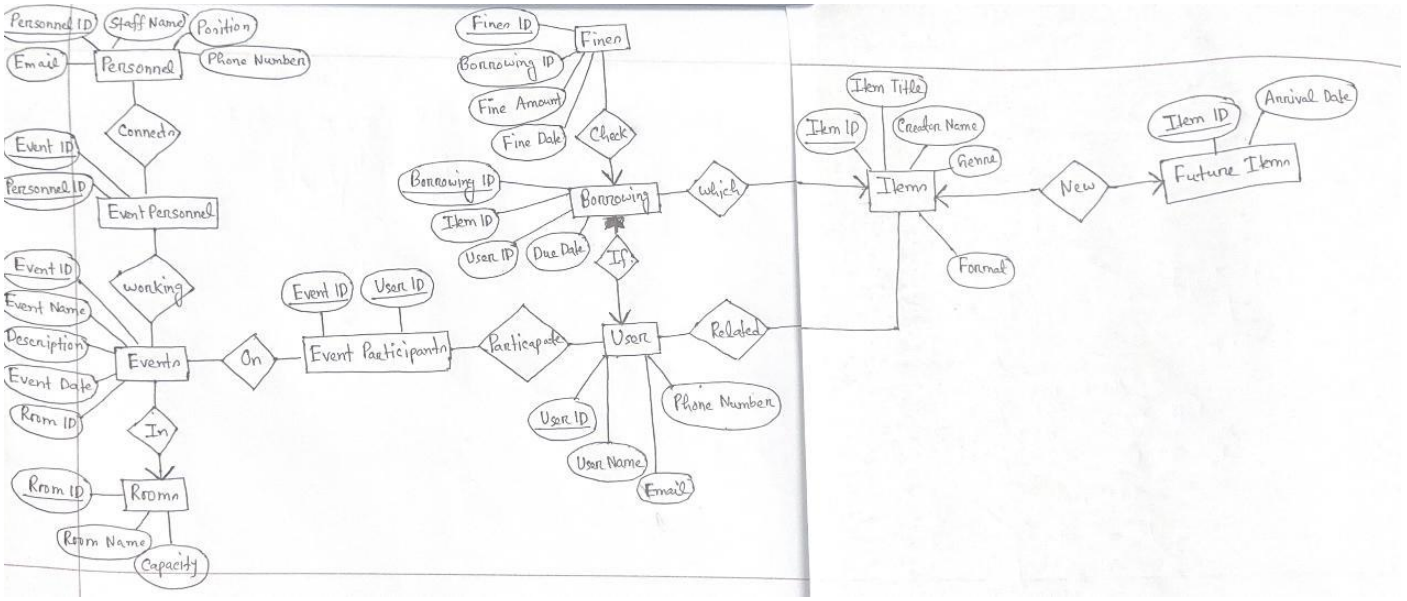
Project Specifications:

With these schema , an user can have information on :

- ➢ User details
- ➢ Item details
- ➢ Which Items are borrowed by the user
- ➢ If the user has any fines because of borrowing any items
- ➢ Details on any events
- ➢ Who is working in any events

- ➢ Which users have joined in events
- ➢ Where the event is happening
- ➢ Staff details
- ➢ What are the upcoming items that will be coming soon

STEP 3: ERD



STEP 4:

The FDs of this schema are:

Item ID -> Item Title, Creator Name, Genre, Format

Borrowing ID -> Item ID, User ID, Due Date

User ID -> User Name, Email, Phone number

Fine ID -> Borrowing ID, Fine Amount, Fine Date

Event ID -> Event Name, Description, Event Date, Room ID

Event ID, User ID -> Event ID, User ID

Event ID, Personnel ID ->Event ID, Personnel ID

Room ID -> Room Name, Capacity

Personnel ID -> Staff Name, Position, Email, Phone number, Employment Details

Item ID -> Arrival Date

Here, the L.H.S are the candidate keys for each table.

Now, Checking the L.H.S of each FD's , none of them has non-trivial functional dependencies as they can uniquely identify its other attributes from that table. So, it's **in BCNF.**