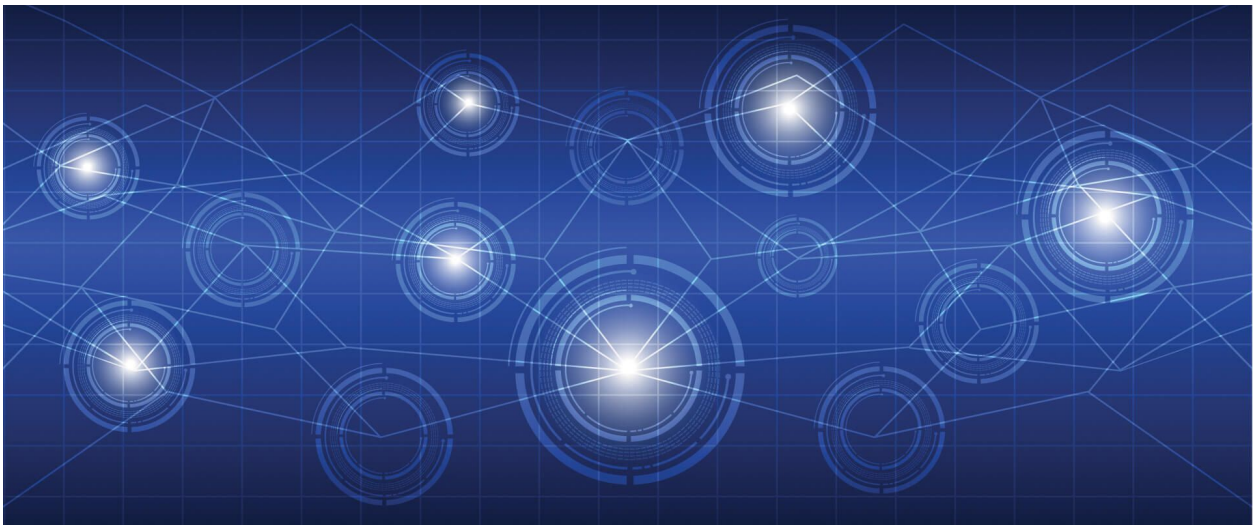

Tiwall Project

Tiwall's Website

Phase 1 : Extraction of Entities

First and foremost, we attempted to extract anything that appeared to be an entity within a collection. As you navigate through the pages of this website, you will observe distinct concepts of "Event" that can be categorized into various types such as theatre, concerts, educational courses, and more.

To delve into more detail, we encountered challenges in defining the relationships between these entities:

- Ticket
- Purchase
- Seat
- Session
- User_Account

On the other hand, we harbored doubts regarding the consideration of certain entities or the selection of specific attributes as a primary key (PK). In response, we consulted our expert, Mr. Javid, who provided assistance in resolving this matter.

`Primary view of entities and their primary keys`

Later on, we opted to treat each seat in every session of an event as a distinct object (record in the Seat table), despite it being a concrete object in the real world. However, we later decided to revise this approach. To facilitate this change, we needed to separate the "Status" attribute from the Seat table since each seat could have multiple statuses across different sessions of an event. In addition, we translated all entity and attribute names into English to enhance the overall neatness and presentation, making it more readable.

`View_of_Entities_untill_here`

After all these challenges, we established a new intermediary entity between Seat and Session, naming it Seat_Status, which successfully resolved the puzzle at hand.

`View_of_Entities`

Now, It’s time to examine the Normality level of these entities:

	A	B	C	D	E
1	**Entity/Feature**				
2	**Event**	**Event_ID**	Event_type	Name	Duration
3					
4	**Theatre**	**Theatre_ID**	Event_ID		
5					
6	**Concert**	**Concert_ID**	Event_ID		
7					
8	**Threatre_Film**	**Threatre_Film_ID**	Event_ID		
9					
10	**Movies_Series**	**Movies_Series_ID**	Event_ID		
11					
12	**Education**	**Education_ID**	Event_ID		
13					
14	**Entertainment**	**Entertainment_ID**	Event_ID		
15					
16	**Exhibit**	**Exhibit_ID**	Event_ID		

The relationship between these entities is one of Inheritance. "Event" serves as the overarching concept that encompasses any attribute that any of the subsequent entities may possess. In essence, each instance of "Theatre," "Concert," and so forth is considered an "Event." For instance, to access the attributes of a specific "Theatre," you would first consult the "Theatre" table. Subsequently, you obtain the Event_ID associated with it and retrieve the complete set of attributes by referencing the "Event" table. As it's evident, there is no factor posing a threat to normality from NF-1 to NF-3 here.

User_account	**Username**	First_name	Last_name	Visible_name

This entity is a little separated from the others; So it is neither a threat to normality.

20	**Ticket**	**Ticket_no**	Seat_no	Session_no	Track_no	
21						
22	**Comment**	**Comment_no**	Username	Event_ID	Date	Type
23						
24	**Purchase**	**Track_no**	Username	Event_ID	Expense	Ticket_count

In this section, we do not observe any transitive dependency. This is because each attribute is directly related to its respective entity and does not rely on others through

foreign keys. Additionally, there is no partial dependency, as all primary keys are singular.

26	**Site**	**Site_no**	Province	City	Address(text)	Phone	Location(Map URL)
27							
28	**Hall**	**Hall_no**	Site_no	Hall_number			
29							
30	**Seat**	**Seat_no**	Hall_no	Floor	Row	Seat_number	
31							
32	**Seat_Status**	**Seat_no**	**Session_no**	Status	Price		
33							
34	**Session**	**Session_no**	Event_ID	Start_time	End_time	Date	

And here, each "Site" has several "Halls," and each "Hall" has multiple "Seats." So far, everything is in order until we encounter "Seat_Status," which has a composite primary key. However, it appears that both "Status" and "Price" depend on both "Seat_no" and "Session_no." Consequently, it doesn't violate NF-3 (Third Normal Form).

36	**Cast_occupation**	**Cast_Occupation_no**	Cast_ID	Event_ID	Occupation(in this event)
37					
38	**Cast**	**Cast_ID**	First_name	Last_name	
39					
40	**Photo**	**Photo_ID**	Event_ID	Link(URL)	
41					
42	**Video**	**Video_ID**	Event_ID	Link(URL)	

Everything is clear about "Photo" and "Video" here. Initially, "Casts" were perceived as several individuals participating in different events(same with the primary situation we considered about seats). However, with the introduction of a new table named "Cast_Occupation," each person now has a single record in the "Cast" table but may have multiple records in the "Cast_Occupation" table. The only element that might potentially violate normality is the "Occupation" attribute. However, since it depends on both "Cast" and "Event" in every record, it doesn't pose a violation of normality.