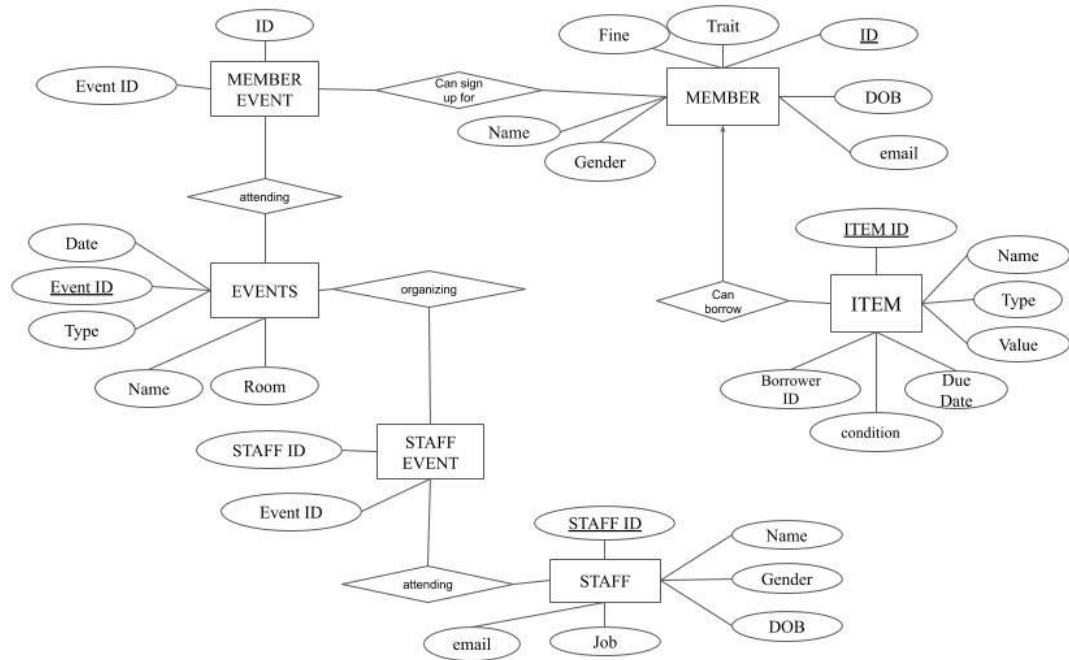


**CMPT 354 Project: The Library Application**  
**Taeyoung Eun 301365637 & Kenta Horie 301374650**



## Part 2

Our library application was devised with the need to service and maintain the information about 3 groups: items (books, CDs, magazines, etc), members, and events.

Everyone with access to the library is a member, and they will be given a member ID. Each member has the option of borrowing items, but if the item is not returned before the due date, they will receive a fine.

The members can also participate in various library events, and they will receive recommendations based on the type of events that they enjoy. The library is held in one of many rooms in the library which the application will select based on availability. It tracks the number of attendees and the organization staff of the event. Events can be added or removed. Members can be added or deleted.

There is personnel/staff who will be assigned a job for the library, and they can also work/volunteer for a library event. Staff can be added or deleted.

The library application will track all the items which are future additions to its archives with the approximate date of its arrival. Items can be added or deleted.

#### Part 4

The Boyce-Codd Normal form essentially has to satisfy two conditions:  
The first being that the design is in third normal form or in other words, no transitive dependencies. The other being that for any dependency  $A \rightarrow B$ , A is a Superkey.  
Firstly, nowhere in our design has any form of transitive dependency since the attributes within the database doesn't have long strands of functional dependencies. For the second condition, None of the primary keys are functionally dependent on non-primary keys. Each main entity has a unique ID (item, member, staff, event) that is used to determine the rest of the information of their respective entity and is not dependent on other attributes in any other entities. As such, they are perceived as a super key.

#### Part 5

Refer to the notebook!