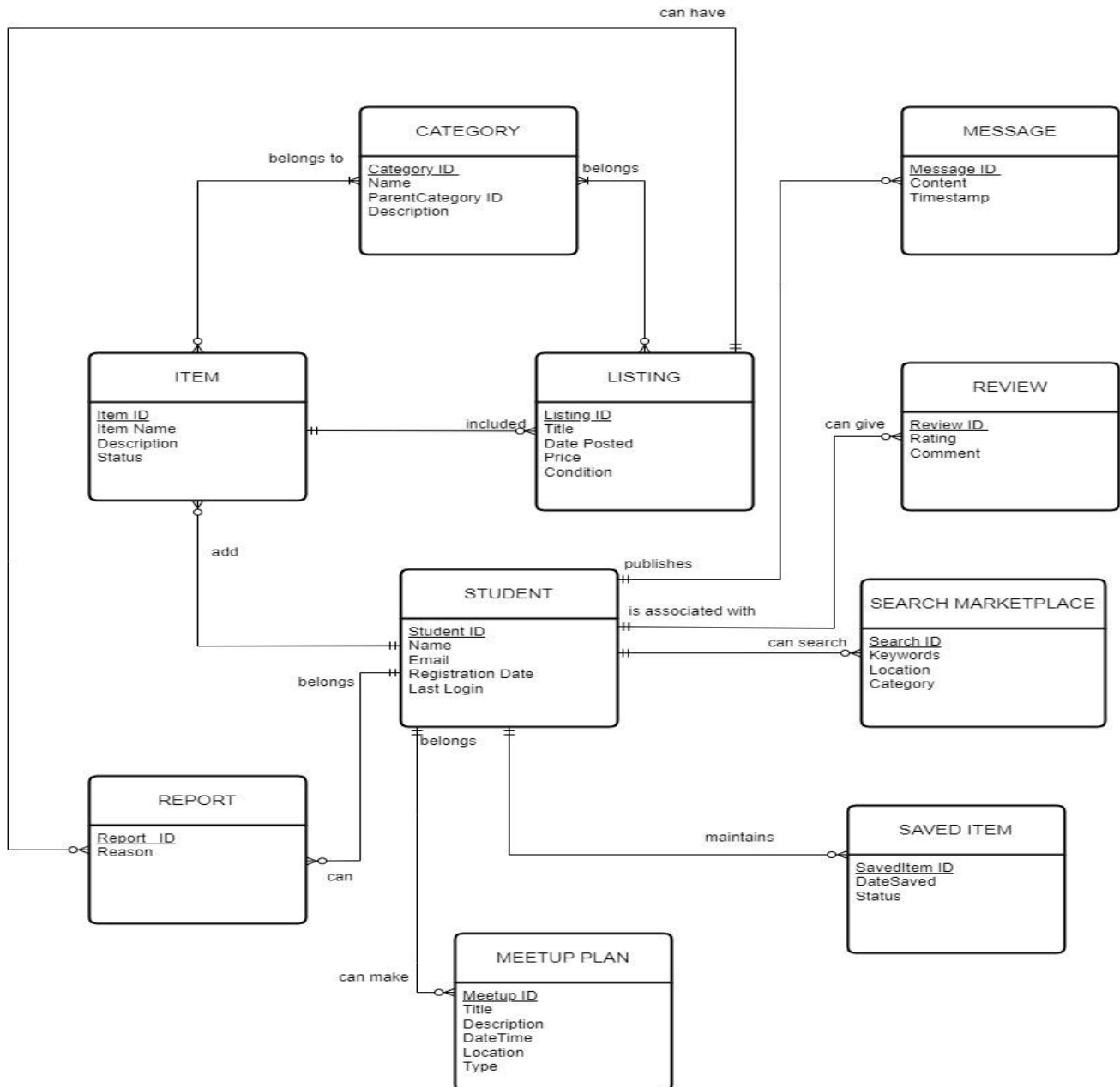# Data Management and Database Design DAMG 6210

Project Name - Student Marketplace

Project Group - 15

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P2. Database Design, Initial ERD

ERD:

ENTITIES:

1. **Student:** This entity represents the users of the marketplace. Students can browse items, make purchases, leave reviews, save items, attend meetups, and communicate with others through messages. Having a "Student" entity allows the platform to manage user accounts, track user interactions, and personalize the experience.
2. **Item:** The "Item" entity represents the products or services being offered in the marketplace. Each item typically has attributes such as title, description, price, and seller information. This entity is essential for creating listings, conducting searches, and enabling transactions.
3. **Category:** Categories help organize items within the marketplace. Items are often categorized into different groups, making it easier for users to browse and find what they're looking for. The "Category" entity allows for the structured organization of items.

4. **Listing:** A "Listing" entity represents an individual or collection of items that a student has put up for sale or exchange in the marketplace. It ties the items to a specific student seller and contains additional details like item condition and location.
5. **Review:** The "Review" entity allows students to leave feedback and ratings on items and sellers. Reviews contribute to building trust and transparency within the marketplace by letting users share their experiences.
6. **Search Marketplace:** A "Search Marketplace" entity represents the information about search queries performed by students such as Keywords, Location.
7. **SavedItem:** "SavedItem" keeps track of items that students have saved or bookmarked for future reference. It allows users to curate a list of items they're interested in without committing to a purchase immediately.
8. **Meetup:** "Meetup" refers to events or gatherings organized within the marketplace, where students can connect in person or virtually. This entity is included to manage and promote community building within the platform.
9. **Message:** The "Message" entity is used for communication between students. Messaging enables users to ask questions about listings, negotiate prices, and coordinate meetups or item exchanges. It's a vital part of facilitating transactions and interactions.
10. **Report:** The "Report" entity may be included to allow students to report inappropriate content, fraudulent activity, or other issues within the marketplace. Reports help maintain the integrity and safety of the platform.

RELATIONSHIPS:

STUDENT: (StudentID, Name, Email, Registration Date, Last Login)

- STUDENT can SEARCH MARKETPLACE and each SEARCH belongs to one STUDENT
- STUDENT can give REVIEWs and each REVIEW belongs to one STUDENT
- STUDENT is linked to every MESSAGE that they send, each MESSAGE has one sender and one recipient
- each STUDENT can save multiple ITEMS as SAVED ITEMS
- STUDENTs can have multiple MEETUP PLANs with other students
- STUDENTs can report multiple LISTINGS
- STUDENT can add multiple ITEMS

ITEM: (Item ID, Item Name, Description, Status)

- Each ITEM belongs to one STUDENT and every STUDENT can add multiple ITEMS
- Each ITEM can be a LISTING while optionally belonging to one or more CATEGORY

SAVED ITEM: (SavedItem ID, DateSaved, Status)

- Each SAVED ITEM belongs to one STUDENT
- Each STUDENT may have multiple SAVED ITEMs

MEETUP PLAN: (MeetupID, OrganizerStudentID, Title, Description, DateTime, Location, Type)

- Every MEETUP PLAN belongs to one STUDENT
- One STUDENT can have multiple MEETUP PLANs

CATEGORY: (CategoryID, Name, ParentCategoryID, Description)

- Every LISTING can belong to one or more CATEGORIES.

- One CATEGORY can contain zero or multiple LISTINGS.
- Every ITEM can belong to one or more CATEGORIES.
- One CATEGORY can have zero or multiple ITEMs associated with it.

LISTING: (ListingID, Title, Date Posted, Price, Condition)

- One LISTING represents one ITEM, but an ITEM can be showcased in zero or multiple LISTINGS.
- Each LISTING can have zero or more REPORTS associated with it.

RATING: (Review_ID, Rating, Comment)

- A STUDENT can give multiple reviews, but an REVIEW must belong to a STUDENT.

SEARCH MARKETPLACE:(Search_ID, Keywords, Location, Category)

- A STUDENT can be responsible for multiple SEARCH MARKETPLACE queries, but a single SEARCH MARKET query must be associated to a single STUDENT.

REPORT : (Report_ID, Reason)

- A STUDENT can have multiple REPORT and many REPORT belongs to one STUDENT
- REPORT can have multiple LISTING and Many LISTING may belong to multiple REPORT

MESSAGE : (Message_ID, Content, Timestamp)

- STUDENT may send many MESSAGE
- MESSAGE belongs to a STUDENT