CS 157A Project Data Model & DB Design

Revision

Three-Tier Web Application

SJSU Bookie

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Team 4

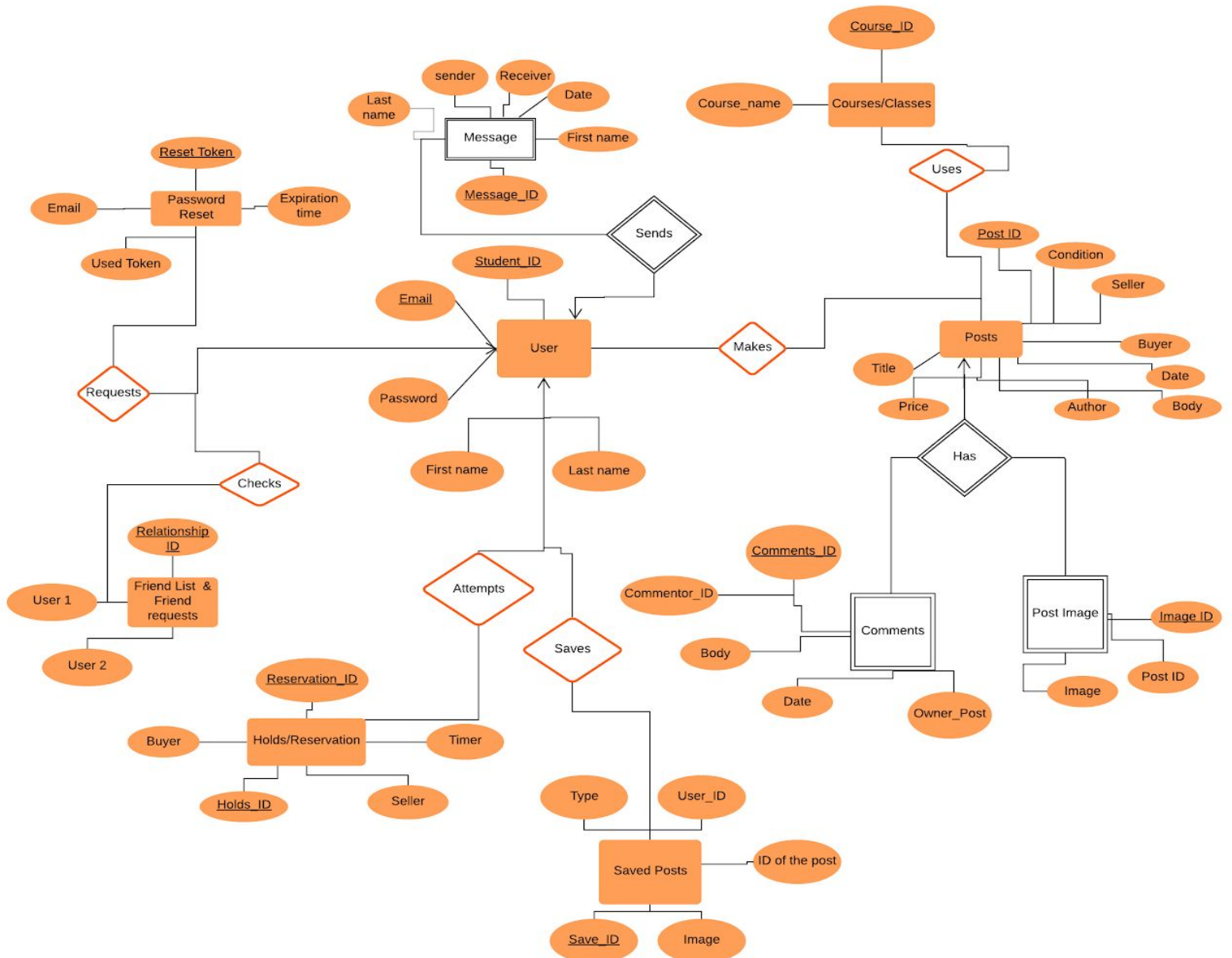Advisor: Dr. Mike Wu

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Figure 1: SJSUBookie E/R Revised Diagram

Explanations for E/R Diagram:

- **Tables**
  - User
    - The users who are using our SJSU Bookie. The Unique keys are the user's email and student ID.
  - Password Reset
    - Unique key is the reset token where this allows the user to be able to reset their password in case they forgot it. Token is used as validation and identification.
  - Post
    - Posted by a user, this entity has details of the book they are trying to sell. Another user can put a hold, view or comment on it, but only the original poster can edit/delete the posting. These are recognized by the post id.
  - Saved Posts
    - This is a log/list of posts that is relevant to a user. These posts can include posts that you've made, posts that you've commented on, or posts that you favorited. These are identified by the post_id and saved_id
  - Messages
    - Users can send messages to other users, but the constraint is the person must be a user, then he or she can send messages to other users. The message ID number is the unique key.
  - FriendList/Friend Friend Requests
    - A user is able to add another user as their friend on SJSUBookie in order to maintain communication or be able to communicate with one another. A friend request is considered accepted when both users recognize that the other is the friend on the database. These are uniquely identified by the relationship ID.
  - Holds/Reservations
    - A hold is basically a contract stating that one user is interested in another user's post. This is temporary let other users know that the book might be bought. Identified by Hold/Reservation_ID.
  - Comments
    - Users can leave comments under a post. The unique key of comments is comment ID, which we use to identify the comments.
  - Post Image

- - - It will be a table of images the user uploaded. The users would upload images when they are creating a selling post. The unique key is the image ID.
  - ○ Course/Classes
    - ■ Course is to help posts identify which class/course the book belongs to. Identified by the course_ID like (CS157A, CMPE165… etc)
- ● ENTITY RELATIONSHIP EXPLANATION
  - ○ **FORMAT: ENTITY_1 RELATIONSHIP ENTITY_2**
  - ○ User requests Password Reset
    - ■ A user will have the option to reset their password if they've forgotten it.
  - ○ User Checks User Friend request
    - ■ A user has the option to see all pending friend requests and accept friend requests from other users.
  - ○ User Attempts to buy holds/reservation
    - ■ A user must be able to put a reservation on hold if they are interested in the listing but unable to buy immediately. This will prevent another user from buying the listed book.
  - ○ User Logs Saved Posts
    - ■ Any post the user has saved, posted, or removed will be logged, providing the option to view at a later time.
  - ○ User Makes Posts
    - ■ A user needs to be able to make a post to sell a textbook.
  - ○ Posts have comments
    - ■ Every available post can have comments regarding the book or the seller.
  - ○ Posts have post image
    - ■ A post should have a corresponding image matching the textbook cover.
  - ○ Posts use course/classes
    - ■ Each book posting can have relevant classes associated with to improve search results.
  - ○ User sends messages
    - ■ Buyers and sellers can communicate by sending messages to increase transaction security.

Schemas:
- ● Users(<u>Stdent_ID</u>, <u>Email</u>, User, Password, First name, last name)
- ● Message(<u>Message_ID</u>, First name, Date, Receiver, sender, Last name)
- ● Holds/Reservation(<u>Reservation_ID</u>, <u>Holds_ID</u>, Buyer, TImer, Seller)
- ● Saved Posts (<u>Save_ID</u>, User_ID, post type, ID of the post, imageID)

- Friend List & Friend requests(<u>Realtionship_ID</u>, User1, User2)
- Password Reset(<u>Reset Token</u>, Email, Expiration time, Used token)
- Posts(<u>Post_ID</u>, Book_condition, Seller, Buyer, Book_Date, Body, Author, Price, TItle)
- Comments(<u>Comments_ID</u>, Commentor_ID, Body, Date, Owner_Post)
- Courses/classes(<u>Course_ID</u>, Course_name)
- Post Image(<u>Image_ID</u>, Post ID, Image)

Tables screenshots of each table and its content in MySQL:

- FriendListAndRequeset:

relationshipID	user1	user2
1001	Jonathan	Cole
1003	Diana	Cole
1013	Jane	Diana
1010	Cole	Jane
1008	Jonathan	Jason
1009	Jonathan	Julia
1002	Jonathan	Marry
1004	Diana	Marry
1000	Jonathan	Yu
1005	Jimmy	Yu
1006	Jane	Yu
1007	Khadeja	Yu
1011	Jonathan	Yu
1012	Jonathan	Yu
1014	Ashley	Yu

- Holds/Reservation

reservationID	holdsID	buyer	timer	seller
1111	2222	Jonathan	2019-10-30	Yu
1112	2223	Ashley	2019-10-29	Yu
1113	2224	Jonathan	2019-10-27	Diana
1114	2225	Ashley	2019-10-29	Diana
1115	2226	Jonathan	2019-10-30	Cole
1116	2227	Jonathan	2019-10-30	Kha…
1117	2228	Cole	2019-10-27	Yu
1118	2229	Ashley	2019-10-30	Kha…
1119	2230	Jason	2019-10-22	Mike
1120	2231	Jonathan	2019-10-30	Mike
1121	2232	Jonny	2019-10-30	Yu
1122	2233	Yu	2019-10-30	Jimmy
1123	2234	Jonathan	2019-10-30	Jimmy
1124	2235	Jimmy	2019-10-30	Cole
1125	2236	Cole	2019-10-24	Faith
1126	2237	Jonathan	2019-10-30	David
1127	2222	Jonathan	2019-10-30	Yu

● Saved post

saveID	userID	postType	ID_Post	imageID
1000	2000	comment	3000	4000
1001	2001	comment	3001	4001
1002	2002	comment	3002	4002
1003	2003	comment	3003	4003
1004	2004	comment	3004	4004
1005	2005	comment	3005	4005
1006	2006	comment	3006	4006
1007	2007	comment	3007	4007
1008	2008	comment	3008	4008
1009	2009	comment	3009	4009
1010	2010	comment	3010	4010
1011	2011	comment	3011	4011
1012	2012	comment	3012	4012
1013	2013	comment	3013	4013
1014	2014	comment	3014	4014

● Post

postID	BookCondition	seller	buyer	book_date	body	author	price	title
1000	2000	Yu	Cole	2018-10-01	buy it!	Mike Wu	90	Introduction of Database
1001	2001	Yu	Jonathan	2018-10-01	buy it!	Mike Wu	90	Introduction of Database
1002	2002	Diana	Cole	2018-10-01	you need this!	Jason Lee	50	How to cook
1003	2003	Yu	Diana	2018-10-01	buy it now!	Mike Wu	90	Introduction of Database
1004	2004	Yu	Cole	2017-10-01	buy it	Mike Wu	90	Introduction of Database
1005	2005	Dave	Cole	2017-10-01	buy it	Mike Wu	90	Introduction of Database
1006	2006	Yu	Steve	2019-10-01	buy it	Mike Wu	90	Introduction of Database
1007	2007	Jane	Cole	2019-10-01	buy it	Mike Wu	90	Introduction of Database
1008	2008	Jane	Jimmy	2019-10-01	buy it	Mike Wu	90	Introduction of Database
1009	2009	Marry	Cole	2019-10-03	buy it	Mike Wu	90	Introduction of Database
1010	2010	Diana	Khadeja	2019-10-05	eat healthy!	Jonathan Van	100	Organic Cooking
1011	2011	Jane	Diana	2019-10-01	buy it	Mike Wu	90	Introduction of Database
1012	2012	Yu	Cole	2019-10-01	buy it	Mike Wu	90	Introduction of Database
1013	2013	Jane	Cole	2019-10-28	eat healthy!	Jonathan Van	100	Organic Cooking
1014	2014	Jonny	Cole	2019-10-28	eat healthy!	Jonathan Van	100	Organic Cooking

● PostsImage

imageID	postID	Image
1010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
2010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
3010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
4010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
5010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
5931	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
6010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
7010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
8010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
9010	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
9211	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
9391	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
9641	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
9731	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
9861	393939	http://www.sjsu.edu/cies/pics/tower_hall_02.jpg
NULL	NULL	NULL

● Courses

courseID	courseName
1888	CS 157a, Intro to Introductions
8838	CS 157a, Intro to Introductions
8848	CS 157a, Intro to Introductions
8858	CS 157a, Intro to Introductions
8878	CS 157a, Intro to Introductions
8881	CS 157a, Intro to Introductions
8882	CS 157a, Intro to Introductions
8883	CS 157a, Intro to Introductions
8884	CS 157a, Intro to Introductions
8885	CS 157a, Intro to Introductions
8886	CS 157a, Intro to Introductions
8887	CS 157a, Intro to Introductions
8888	CS 157a, Intro to Introductions
8889	CS 157a, Intro to Introductions
8898	CS 157a, Intro to Introductions
NULL	NULL

- PasswordReset

resetToken	email	expirationTime	usedToken
221	jane@doe.com	1000-01-01 00:00:00	0
321	jane@doe.com	1000-01-01 00:00:00	0
322	jane@doe.com	1000-01-01 00:00:00	0
331	jane@doe.com	1000-01-01 00:00:00	0
333	jane@doe.com	1000-01-01 00:00:00	0
371	jane@doe.com	1000-01-01 00:00:00	0
421	jane@doe.com	1000-01-01 00:00:00	0
431	jane@doe.com	1000-01-01 00:00:00	0
521	jane@doe.com	1000-01-01 00:00:00	0
666	jane@doe.com	1000-01-01 00:00:00	0
667	jane@doe.com	1000-01-01 00:00:00	0
677	jane@doe.com	1000-01-01 00:00:00	0
721	jane@doe.com	1000-01-01 00:00:00	0
777	jane@doe.com	1000-01-01 00:00:00	0
921	jane@doe.com	1000-01-01 00:00:00	0
NULL	NULL	NULL	NULL

- Users

studentID	email	user	password	firstName	lastName
111222	jane@doe.com	janedoe	aaa1234	Jane	Doe
121222	jane@doe.com	janedoe	aaa1234	Jane	Doe
131222	jane@doe.com	janedoe	aaa1234	Jane	Doe
151222	jane@doe.com	janedoe	aaa1234	Jane	Doe
171222	jane@doe.com	janedoe	aaa1234	Jane	Doe
181222	jane@doe.com	janedoe	aaa1234	Jane	Doe
10000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
110000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
400000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
500000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
600000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
700000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
800000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
900000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
1000000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
1100000000	janedoe@sjsu.com	janedoe	aaa1234	Jane	Doe
NULL	NULL	NULL	NULL	NULL	NULL

● Message

messageID	firstName	date	receiver	sender	lastName
110	Jane	2000-01-04	John	Jane	Doe
120	Jane	2000-01-04	John	Jane	Doe
130	Jane	2000-01-04	John	Jane	Doe
140	Jane	2000-01-04	John	Jane	Doe
150	Jane	2000-01-04	John	Jane	Doe
160	Jane	2000-01-04	John	Jane	Doe
170	Jane	2000-01-04	John	Jane	Doe
180	Jane	2000-01-04	John	Jane	Doe
190	Jane	2000-01-04	John	Jane	Doe
1113	Jane	2000-01-04	John	Jane	Doe
110000000	Jane	2000-01-04	John	Jane	Doe
111000000	Jane	2000-01-04	John	Jane	Doe
120000000	Jane	2000-01-04	John	Jane	Doe
130000000	Jane	2000-01-04	John	Jane	Doe
140000000	Jane	2000-01-04	John	Jane	Doe
150000000	Jane	2000-01-04	John	Jane	Doe
160000000	Jane	2000-01-04	John	Jane	Doe
170000000	Jane	2000-01-04	John	Jane	Doe
180000000	Jane	2000-01-04	John	Jane	Doe
190000000	Jane	2000-01-04	John	Jane	Doe
NULL	NULL	NULL	NULL	NULL	NULL

● Comments

commentID	commentorID	body	date	ownerPost
2233	222333	cool book!	2000-01-01	393939
2237	222333	cool book!	2000-01-01	393939
111333	222333	cool book!	2000-01-01	393939
112333	222333	cool book!	2000-01-01	393939
114333	222333	cool book!	2000-01-01	393939
114493	222333	cool book!	2000-01-01	393939
114497	222333	cool book!	2000-01-01	393939
115533	222333	cool book!	2000-01-01	393939
115537	222333	cool book!	2000-01-01	393939
116633	222333	cool book!	2000-01-01	393939
116637	222333	cool book!	2000-01-01	393939
117333	222333	cool book!	2000-01-01	393939
117773	222333	cool book!	2000-01-01	393939
117777	222333	cool book!	2000-01-01	393939
124433	222333	cool book!	2000-01-01	393939
124437	222333	cool book!	2000-01-01	393939
333333	222333	cool book!	2000-01-01	393939
555333	222333	cool book!	2000-01-01	393939
777333	222333	cool book!	2000-01-01	393939
NULL	NULL	NULL	NULL	NULL