# DBMS Assignment 1

## PESUVariance - Learn, Grow & Challenge Yourself!

**Team ID: H1**

**Names and respective SRN's:**
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**Semester: 5, Section: H**

**Problem Statement:**

The aim of our project is to build a Computer Science/Data Science educational platform specifically aimed towards PES Students or beginners. It allows users to find and publish data sets, discuss and work with other users, enter competitions to solve challenges and test their knowledge with quizzes. It is similar to Kaggle and other hackathon websites. Our project will involve more user friendly interfaces, simpler mechanisms and beginner friendly content. We will also work on security and specific roles catered towards PES University students. This would be a helpful tool in facilitating the regular hackathons occurring internally in PES University.

Below are the Entity Descriptions and their respective attributes:

1. **Login** - Login Table stores all the details related to login sessions. Attributes stored are Login ID (specifies unique ID of login session), Username and Password, Login Status. Both Login ID and username are composite keys (both are key attributes). Login status denotes if the user is logged in or out. Login associated with a user can also be done in various devices.

2. **User** - The user table stores all the details related to users that have signed up for PESUVariance. Attributes stored are Username, User ID, Email ID, Profile Picture, Phone Number, Bio, Activity, Type (Student, Business, Instructor). User ID is the Key Attribute for the User Entity.

3. **Competition** - The competition entity contains details of any competitions that have been added to the website. The attributes are Competition ID, Competition Name, Dataset ID (FK), Image, Sponsor, Description, Date & Time, Rules, Code Requirements, Grade, Leaderboard, No. of entries(derived from count of participation ID). The Competition ID is the key attribute.

4. **Post -** The Post entity lets a user post on our platform. The attributes are Post Owner, PostTitle, PostID, Upvotes, Images & Timeline. They can post images as well through the Image attribute. The Upvotes attribute indicates the number of likes for the particular post. PostID is the key attribute.

5. **Comment -** The comment entity lets a user comment on top of existing posts, thereby creating a way of encouraging engagement on the platform. We have also ensured to include replies to existing comments as a Recursive Relation. Attributes stored are Comment ID ( specifies unique ID for each comment), Comment owner (to identify the user who commented), Timeline (date & time as composite keys).

6. **Quiz -** The Quiz entity contains the attributes Quiz ID (to uniquely identify the quizzes), Quiz Name, Number of Questions (Derived Attribute), Timeline (date & time as composite keys), Complexity (In terms of Easy, Medium, Hard ), Instructor, Score.

7. **Questions -** The question entity has the description of the question as its attribute and Question ID to uniquely identify it.

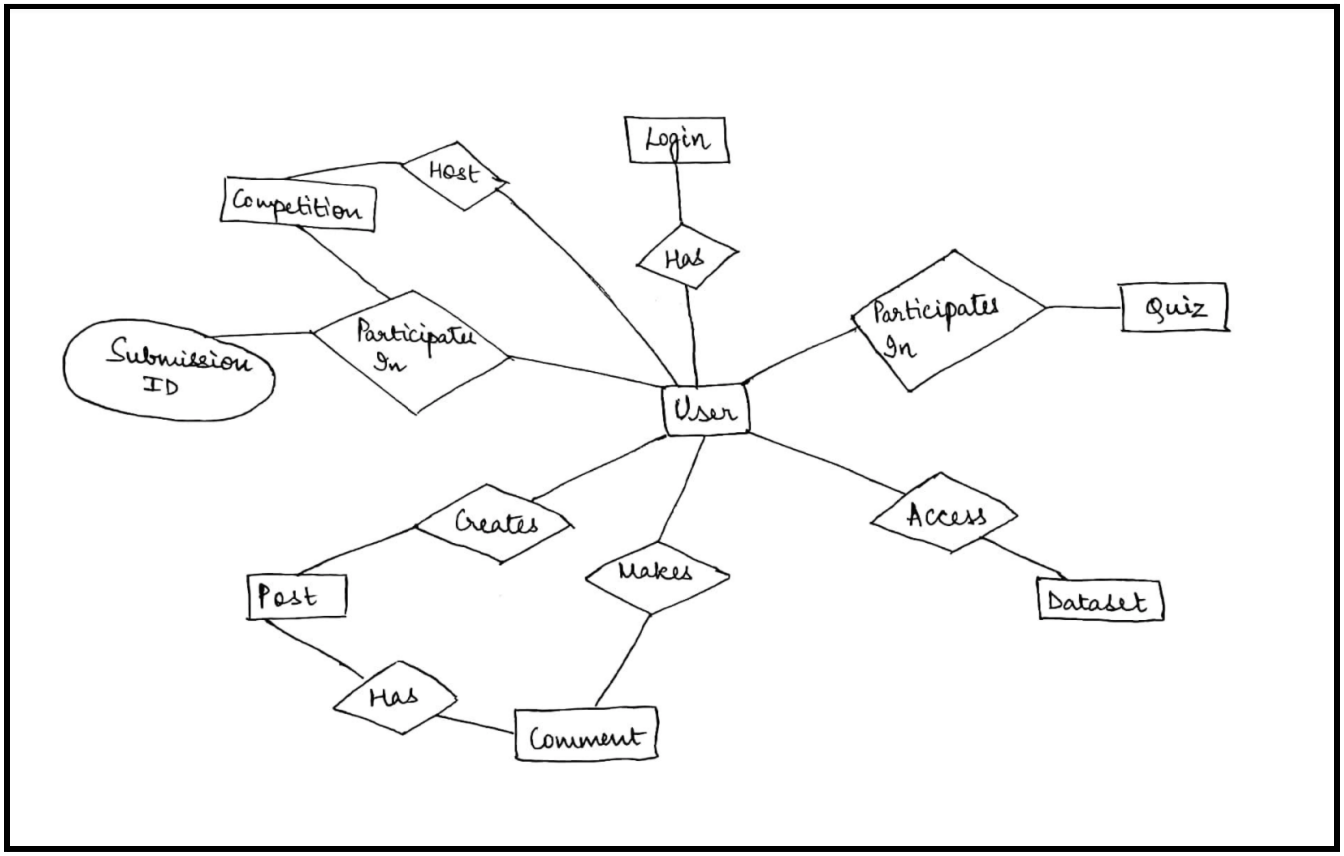
8. **Answers -** The Answers entity contains details of the answers to be displayed for the respective question. It has attributes AnswerKey, Answer1,Answer2,Answer3, where AnswerKey is the key attribute of the answer entity and it contains the correct answer option for that particular option.

9. **Dataset -** The entity dataset, can be uploaded or downloaded by the user. The attribute Dataset ID has been used to uniquely identify the dataset. The attributes for dataset are Size, Dataset name, Dataset Owner, Description, File and Timeline (date & time as composite keys).

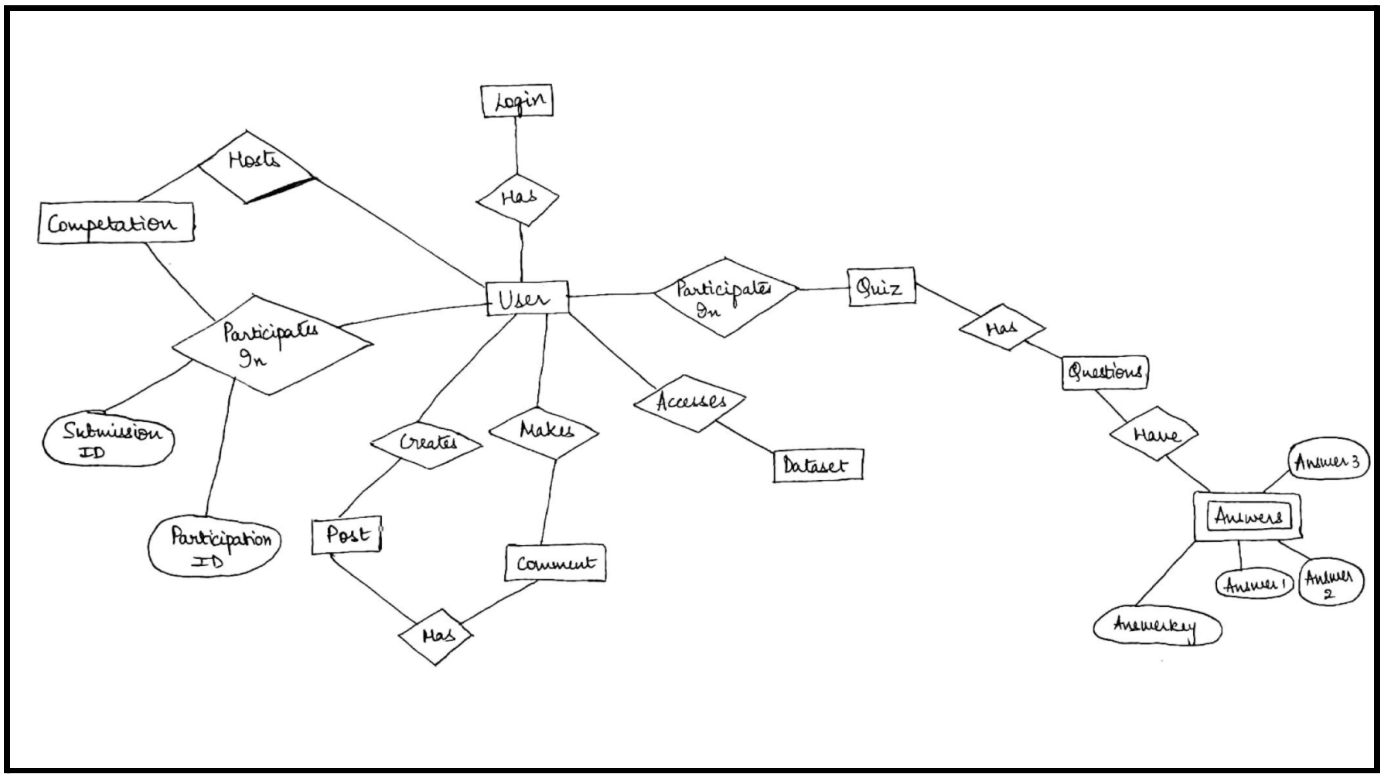
10. **Leaderboard -** The entity leaderboard, ranks the user for a particular competition on the basis of grade, execution speed and the number of test cases passed. The leaderboard has Rank and Submission ID as a unique key.

**Stages of ER diagram:**

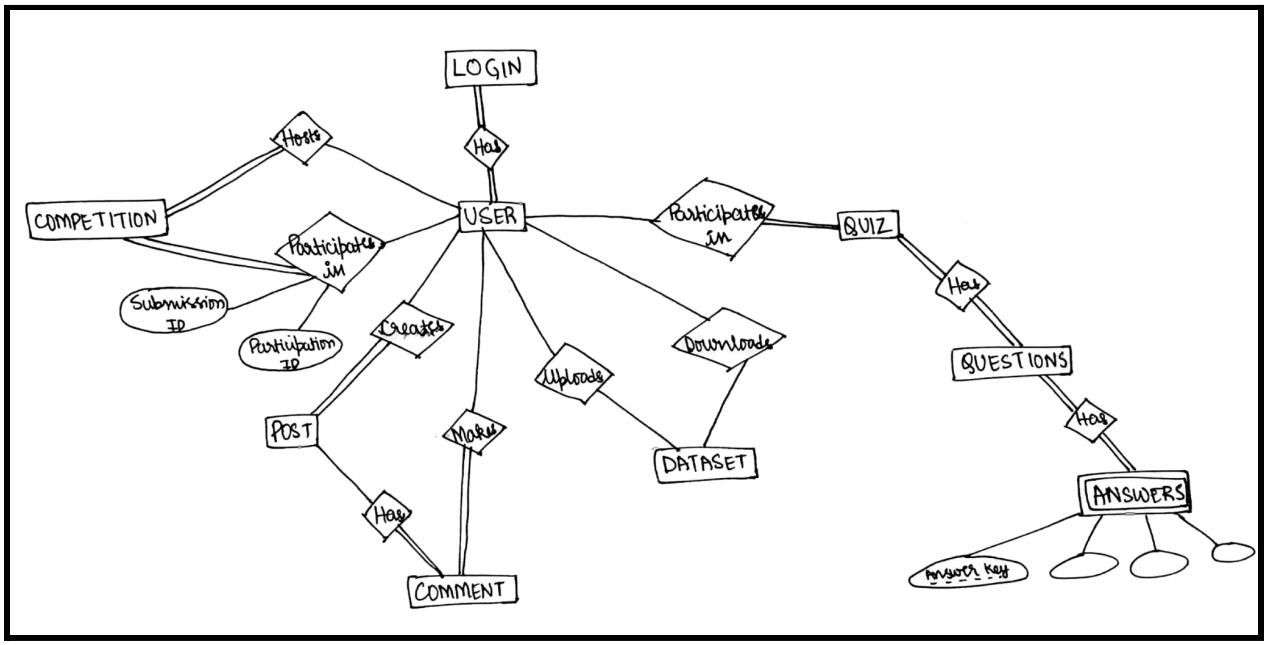
Stage 1:



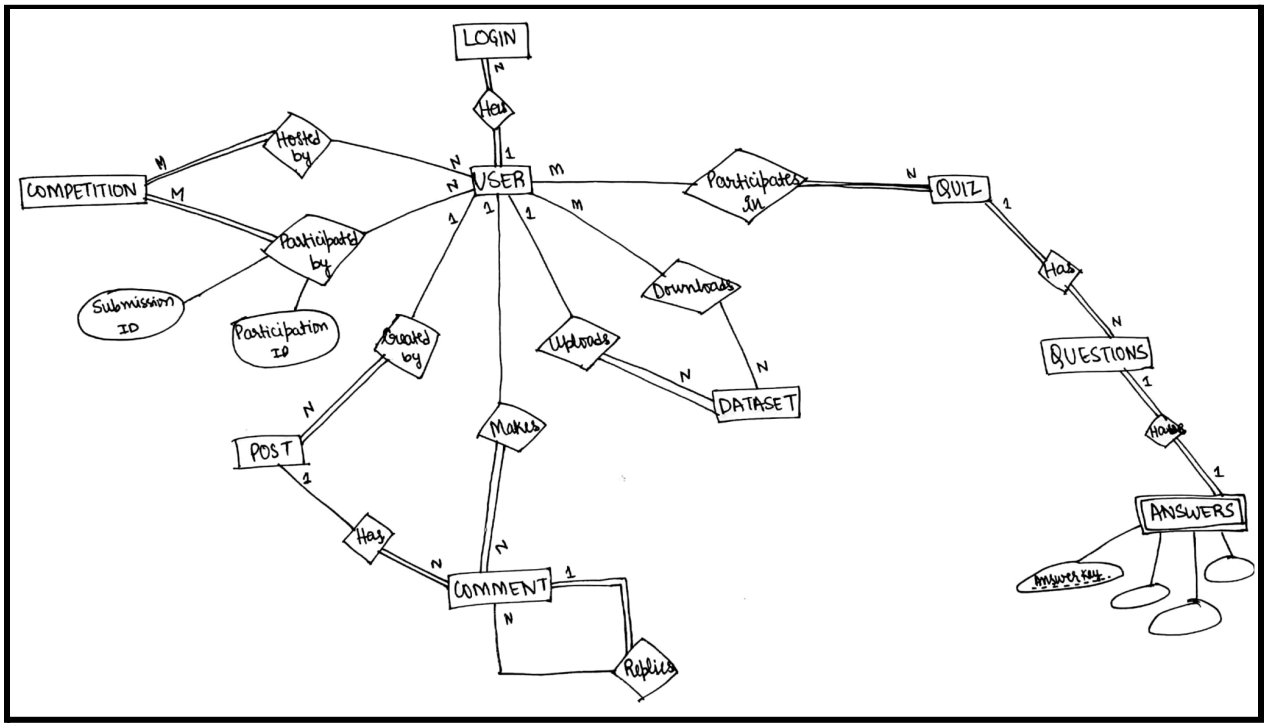
Stage 2:




Stage 3:



Stage 4:



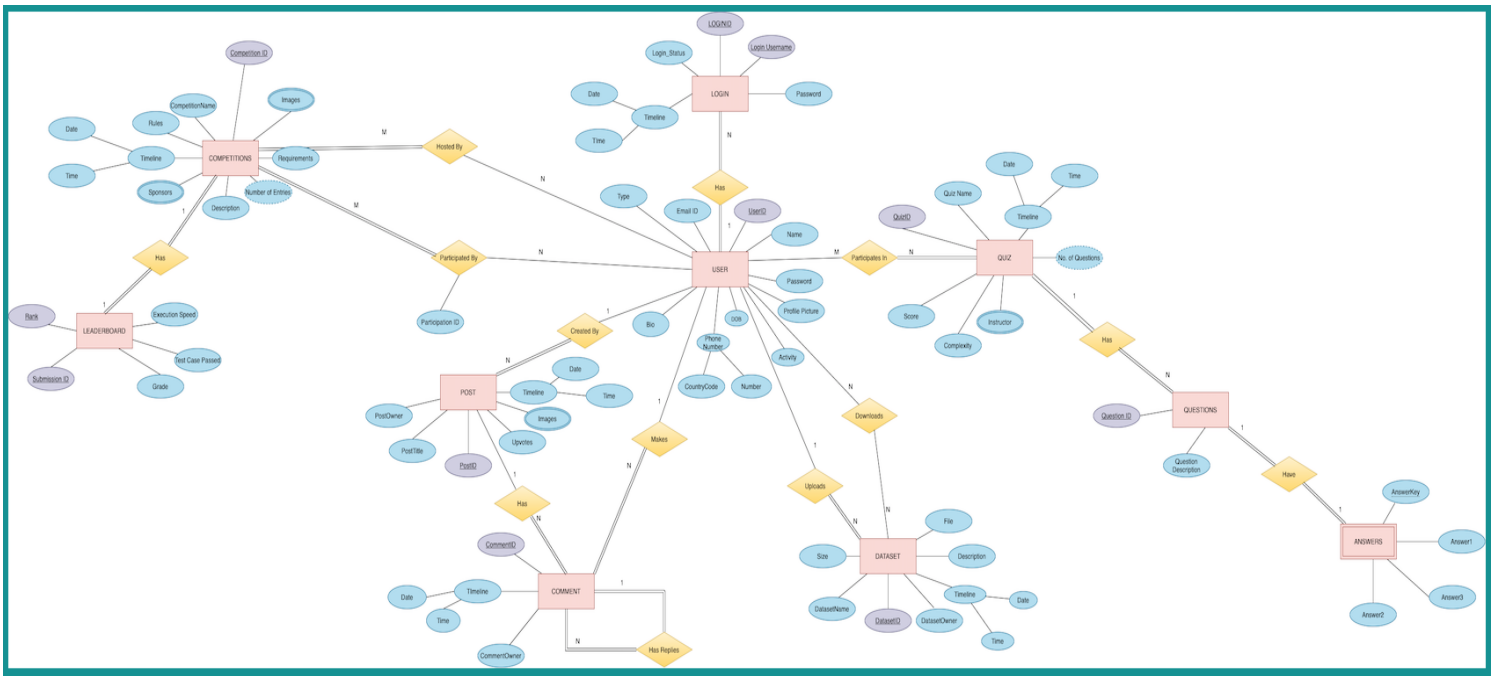

**ER tool used: diagrams.net**

The ER tool used was diagrams.net. It is an open source technology stack for building diagramming applications, and the world's most widely used browser-based end-user diagramming software.
When we share a diagrams.net diagram, anyone can open and edit it at the same time. There is no limit on the usage of software resources and is also free to use. It automatically saves our updates on the diagram to the google drive and the same can be accessible whenever we want to add more features. We can also save the file as editable bmp and upload the same later if we want to edit the file. It also provides us with multiple storage options, like google drive, device, dropbox, etc.

**Reference links and installation steps for the tool:**

Diagrams.net requires no installation and can be used online.

**Final ER diagram:**




**In case the image is unclear please refer to the .png file uploaded in the google drive link mentioned below. The image can be *opened with* diagram.net (option provided on the top once document is opened)**

**Contribution of each member:**

Shrikar Madhu - Entities, Attributes, Participation, Making Final ER Diagram.
Sravya Yepuri - Entities, Attributes, Participation, Making Rough ER Diagrams.
Sri Ramya Priya Vedula - Entities, Attributes, Cardinality, Making Rough ER Diagrams.
Yousha Mahamuni - Entities, Attributes, Cardinality, Making Final ER Diagram.

**Time spent to build the ER diagram:**

Entities, Attributes - 2 Hours
Participation, Cardinality - 2 Hours
Making Rough ER Diagrams - 3 Hours
Making Final ER Diagram and Final changes - 4 Hours

**Google Drive Link:**
https://drive.google.com/drive/folders/1dnIL_wwvHX1KzgyL_P42ALY0oY4yQtRA?usp=sharing