**Department Of Information Technology**

A.Y. 2020-2021

Class: SE-ITA/B, Semester: III

Subject: **Structured Query Lab**

## Experiment – 1: Formulate a problem statement for the chosen real life application.

**1. Aim:** To Formulate a problem statement for the chosen real life application.

**2. Objective:** To perform the experiment, the students should be able to Formulate a problem statement for the chosen real life application Identify Entities and related features needed for an application

**3. Outcome** L302.1**:** To Construct problem definition statements for real life applications.

**4. Prerequisite:** Understanding of use of databases in real time applications.

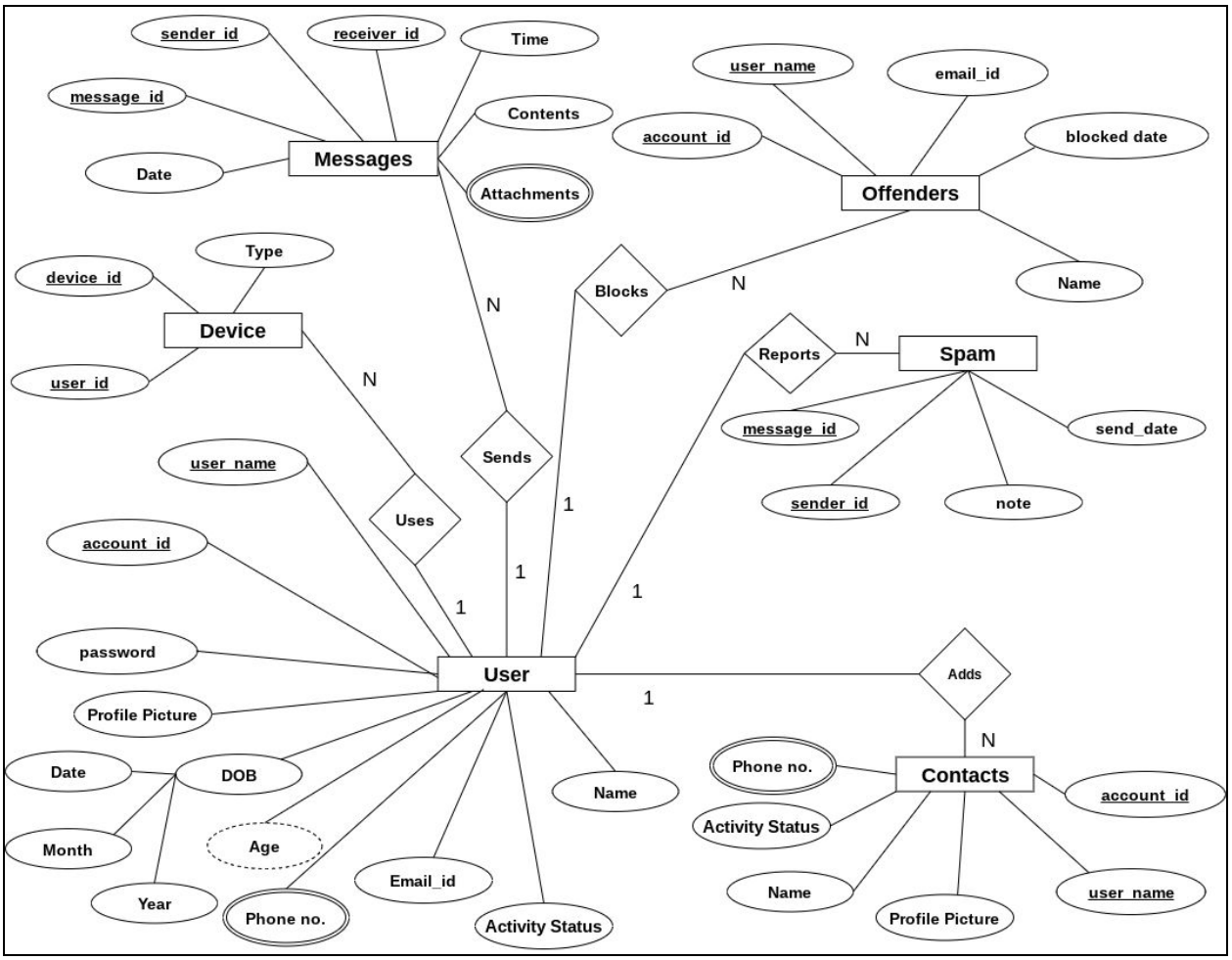
**5. Requirements:.** PC and Internet, Microsoft Word

**6. Laboratory Exercise:**

**Problem statement -**

A social networking site allows users to create a public profile and interact with other users on the website. The details of the **user** like account_id, user_name, password, email_id, phone number, name, profile picture, DOB are recorded. Once the account is created the user can add other users to interact with and the **contacts** will be recorded on the basis of account_id, user_name, email_id, phone number, name. The **devices** used by the user will also be recorded as type of device, device id, user id. The user can send **messages** to other users which will be stored according to message_id, sender_id, receiver_id, type of message, attachment, created date, send date. The user can report **spam** messages which will be recorded on the basis of message_id, sender_id, send date, send date, notes. The user can also block **offenders** and a blocked list will be created on the

basis of account_id, user_name, name, email_id, blocked on date.




## 7. Post Experimental Exercise-

## A. Questions:

1. What are the advantages of storing data in database?

A Database Management System (DBMS) is defined as the software system that allows users to define, create, maintain and control access to the database. DBMS makes it possible for end users to create, read, update and delete data in the database. It is a layer between programs and data.

Advantages are:-

- Controlled Redundancy: Saving of Multiple Copies of the same data is avoided.
- Restricting Unauthorized Access: This improves security by not allowing unauthorised queries and user access data

- Provide Storage Structures for efficient Query processing
- Provide easy Back–up & Recovery
- Provide Multiple user interfaces: Different interfaces for casual users, application programmers and naive users.

2. What is a problem statement?

A problem statement is a short description of the object to be designed by the student/programmer. It consists of an introduction to the system, what is the need for the system, Limitations of the existing system (if any), Problem definition in terms of entities and attributes and how they are related to each other. It also has the advantages of the current system over the existing system

3. What is the need of a database? Etc.

In traditional file systems, we cannot store data in the form of objects. In practical-world applications, data is stored in objects and not files. So in a file system, some application software maps the data stored in files to objects so that can be used further. We can directly store data in the form of objects in a database management system. Application level code needs to be written to handle, store and scan through the data in a file system whereas a DBMS gives us the ability to query the database.

**B. Conclusion:**

1. Write what was performed in the experiment

The title of the experiment was achieved by understanding what a problem statement is and understanding its significance. Then a problem statement was formulated on the basis of Introduction to the system, the need for the system, limitations of existing system and problem definition in terms of Entities and attributes.

2. Mention few applications of what was studied.

Applications where we use Database Management Systems are:

Industry: Where it is a manufacturing unit, warehouse or distribution centre, each one needs a database to keep the records of ins and outs. For example distribution centres should keep a track of the product units that are supplied into the centre as well as the products that got delivered out from the distribution centre on each day.

Banking System: For storing customer info, tracking day to day credit and debit

transactions, generating bank statements etc. All this work has been done with the help of Database management systems.

Sales: To store customer information, production information and invoice details.

Airlines: To travel though airlines, we make early reservations, this reservation information along with flight schedule is stored in a database.

Education sector: Database systems are frequently used in schools and colleges to store and retrieve the data regarding student details, staff details, course details, exam details, payroll data, attendance details, fees details etc.

3. Write the significance of the studied topic

A database is typically designed so that it is easy to store and access information. A good database is crucial to any company or organisation. This is because the database stores all the pertinent details about the company such as employee records, transactional records, salary details etc.

**C. References:**

[1] Elmasri and Navathe, “Fundamentals of Database Systems”, 5th Edition, PEARSON Education.

[2] Korth, Silberchatz, Sudarshan, “Database System Concepts”, 6th Edition, McGraw – Hill