**EXPERIMENT-2**

**Case Study 1 & 4 (TRANSPORT DEPARTMENT) & (KL University ERP)**

PRE-LAB:

1. Mr. Jack started a small company. He wants to recruit some employees and he also wants to store all the details of his employees in a database. But he is totally confused on selecting either File based systems or Database Management systems for storing data and also for accessing it. Can you suggest a better database system with a valid reason?

2. Mr. Jack also needs to know the hazard of Data Inconsistency. Explain him?

3. The evolution of different databases has been observed since ages, but the difference between centralized and distributed databases has been a query for many students, could you help them to understand?

4. As we know keys are very significant in designing, specify their importance by classifying them?

5. Mr. Jack was surprised to see the complexity of the architecture and wondered what types of users interact with the database. Help him to understand about the three levels of abstraction and the widely used databases?

IN-LAB

Draw an ER Diagram for a given Case Study1

**CASE STUDY 1: TRANSPORT DEPARTMENT**

Transport Department, Government of Andhra Pradesh is providing various services to citizens of the state. Each district of a state having two or three RTO (Regional transport offices) will be available. These offices are headed by RTO (Regional Transport Officer). Each office contains various type of designated employees work under him. They will look after the following services.

**New License:** The citizens who have a minimum age of 18 years may approach to respective RTO based on address for getting license to drive a vehicle. They need to produce various documents like Photo identity and address proof for applying new license. Aadhar card number is mandatory for getting license. Initially the RTO will provide learner license for period of 30 days. There are two types of license will be provided. For non transport vehicles (two wheeler, four wheeler), transport vehicles (three wheeler, four wheeler, heavy vehicles etc). During these days the person can learn driving and traffic rules. RTO will be conducted driving test and online test and it will be monitored by officer. After passing tests person will get valid license for a particular duration based on the age. The license contains license number, name, father name/husband name, address, issue date, issued authority, type of license, validity, date of birth, blood group will be recorded. The rules will be changed time to time.

**Renewal of license:** Renewal of license will be done from one month before of expiry date and upto 15 days of expiry. He/She needs to follow the same rules and regulations stated in the above paragraph.

**Vehicle registration:** The RTO is offering another service for registration of new vehicles at dealer’s location. No need to rush to RTO office for vehicle registration. Initially, the dealer will register organization details (Dealership name, authorized to sell what class of vehicles, dealer license, address, duration of license) at transport office for registering new vehicles. The dealer will verify the details of the customer; collect all documents (address, identity proof and aadhar card is compulsory), required road tax for registering new vehicles without visiting RTO office. There will be a new rule also imposing against citizens, those who are having one vehicle with his/her name, he/she needs to apply additional tax to the Government. After registration of the vehicle Regd No, Owner Name, father/husband name, address, class of vehicle, manufacturing date, fuel used, type of body, chasis number, engine number, date of registration, valid upto, tax paid etc).

**Contract permits:** The RTO will provide contract permits for transport vehicles from one place to another place. The owner of a transport vehicle needs to apply for contract permit for a specific number of days. The owner needs to pay amount per seat. All the transport vehicles need to apply for fitness test. During this test the RTO will verify entire vehicle, if the vehicle is suitable for transport they will give fitness certificate.

**Educational Institution:** RTO will provide permit for vehicles of educational institutions. They needs to pay fewer amounts for fitness compared to contract vehicles and it is valid to one academic year. These vehicles will be permitted to carry students from their house to education institution. These vehicles may not permit for other purposes. Violation of any of the transport rules, the vehicle owner/driver will be imposed a fine/any other punishment as per the government rules. AP RTO

Draw an ER Diagram for a given Case Study 2

**CASE STUDY 4: KL University ERP**

KL University is offering various Engineering, Management and other courses to the students. University management planned to use online software for entire course management. The objective of the software is to share online resources among faculty and student community. There are different user roles to be defined by KLU management. The roles are Administrator, Officer, Faculty and student. The administrator is whole responsible person for smooth running of entire system. The administrator will create a user name and password to the other roles of the users by giving all the details of user. The Officer role is to generate reports including the student status, course additions and deletions etc. The process is to be started by the registration of courses in the current semester. The student will register specific number courses by choosing course and faculty name. After registration, the student will able to view the time table, attendance and course material shared by concerned faculty members. Student can view fee details in the current semester and previous semesters. He/She can also view regular attendance for every course.

The student can take the books from library on loan basis. Student can view the status of library books and other details like due date, fines etc. The student can also view the list of books available in library.

The student can register for hostel facility. Hostel authority will verify the details of the student, may approve his/her hostel seat depending on various parameters (discipline, academic performance etc.). Once allotment is done student can view the fee dues.

POST-LAB:

1) What is Weak Entity set?

2) What is Data Independence?

3) What is an attribute and explain different types of attributes?

4) What is the difference between entity type and entity set?

5) What are the main differences between Primary key and Unique Key?