Title of the Experiment

Expt. No. : **Date :**

(Refer to the sample Journal on page 2……)

Problem Statement : Brief problem statement as given in the syllabus copy

Concepts : Theoretical background of the experiment

Learning Outcomes : Key concepts learnt

ER-Diagram - Attach printout

Schema Diagram – Attach print out

CREATE TABLE statement with all the constraints for all the relations : **Write by hand**

One Insert statement for each table **: To be written by students**

Write SELECT * statements and their output for expt 1 and expt2

SQL Query Question 1 : Applicable to Expt 3- onwards

SQL Query 1 :

SQL Query 1 : Output

.

SQL Query Question n :

SQL Queryn :

SQL Queryn Output : GUI Screenshot and Source Code

Conclusions : Concluding remarks

Design of ER-Model for Indian Hockey League

Expt. No. : 1 **Date :** 27/01/2020

Problem Statement : Design an ER-Model for National Hockey leaguge application scenario using all the standard notations of ER-Model. Apply the ER-to-Relational Rules and normalization to get the relational schema and do the following :

a. Create the database with all necessary constraints(Primary and Foreign keys)
b. Populate each table with appropriate data
c. Execute simple queries on the tables created.(open ended)
d. Design a GUI using PHP/JAVA/ASP

Concepts : ER-Modeling is a first step towards building a database application. It helps in identifying various entities, their attributes and the relationship between them. The ER-Model helps the application developers to explain the customers, what all data would be stored and seek their suggestions to include all the data relevant to the application. While designing an ER-Model it is important to include only the attributes relevant to the entity types. Further after drawing ER-diagram the structural constraints, namely the cardinality ratios and participation constraints must be correctly indicated. There 7 mapping rules, which must be applied to the ER-diagram after completion to get the Relational model. The relational schema diagram for each relation must be drawn and the Primary key and Foreign keys must be correctly indicated. Then the DDL statements must be used to create the tables in Oracle DBMS. Using INSERT command data must be inserted and using SQL queries the data must be checked for its correctness.

Learning Outcomes :

1. ER-model is a set of concepts to describe data in graphical form
2. There are 7 ER-to-Relational mapping rules to get Relational model from ER-Model
3. Relational model is a set of concepts to describe data to RDBMS.
4. Relation, tuple, attribute, domain, Primary key, Foreign key are the concepts in Relational model
5. DDL statements help us to create tables and specify constraints.
6. DML statements help us to populate and manipulate the database
7. Design a GUI and write the program to connect to DBMS Server and display the data.

7. Learned to use SQL queries to list data stored in tables.

ER-Diagram - Attach printout

Schema Diagrama – Attach print out

CREATE TABLE statement with all the constraints for all the relations : **Write by hand**

One Insert statement for each table **: To be written by students**

SAMPLE Queires Executed in the Lab Session of Expt 1 and 2

Write SELECT * statements and their output for expt 1 and expt2

SQL Query Question 1 : Applicable to Expt 3- onwards

SQL Query 1 :

SQL Query 1 : Output

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SQL Query Question n :

SQL Queryn :

SQL Queryn Output :

GUI – Screen Shot

And Source Code…

Conclusions : We learnt to use the open source ER-design tool dia and created the ER-Model for the above said problem statement. Converted the ER-diagram into relational schema diagram by applying the ER-to-relational rules. We identified Primary and Foreign keys and created all the relations in Oracle DBMS using DDL statements. Further, the database was populated with real data using insert statement. The content of each table was displayed using SELECT sql statement. We learnt update and delete sql statements and also learnt alter table command to modify or add constraints to the table structure after they are created. Learnt how a GUI can be built to connect to a back end database in Oracle/MySQL using Java/PHP.