EXPERIMENT 1

Aim: Write detailed problem statement and design dimensional modelling (Creation of star and snowflake schema)

Objective: To learn fundamental of data warehousing.
To learn concepts of dimensional modelling
To learn star, snowflake and galaxy schema.

Theory: Dimensional modelling (DM) is the name of the logical design technique often used for data warehousing. Dimensional modelling always uses the concepts of facts, measures and dimensions. Facts are the typical numerical values that can be aggregated. Dimensions are the group of hierarchies and descriptors that define the facts.

Fact Table:
The fact table is not a typical relational database table as it is de-normalized on purpose to enhance query response time. The fact table typically contains records that are ready to explore, usually with adhoc queries. Records in the fact table are often reffered to as events, due to the time variant nature of data warehouse environment

Dimension table.
Nearly all the information in a typical fact table is also present in one or more dimension table. The main purpose of maintaining dimension table is to allow browsing the

the categories quickly and easily. The primary keys of each of the dimension tables are linked together to form the composite key of the fact table. In a star schema a design, there is only one de-normalized table for a given dimension.

Star schema architecture is the simplest data warehouse design. The main feature of a Star schema is a table at the centre, called fact table and the dimension table which allow the browsing of specific categories, summerizing, drill-downs, and specifying criteria. Typically most of the fact tables in database 3rd normal form while dimensional tables are denormalized.

Snowflake schema architecture is more complex variation of a star schema design. The main category is that the dimensional tables in Snowflake schema are normalized, so they have a typical relational database design. Snowflake schemas are generally used when the dimensional table becomes very big and the star schema cannot represent the complexity of the database

Fact Constellation Architecture: For each star schema or snow-flake schema, it is possible to construct a fact constellation schema. This schema is more complex than star or Snowflake schema, because it contains multiple fact tables. This allows the dimension tables to be shared among many fact table