

COMPANY TRAINING REPORT (COGNIZANT)

Project report submitted in partial fulfillment of the requirement
for the degree of Bachelor of Technology

in

Computer Science and Engineering/Information Technology

By

(Awantika (171292))

Under the supervision of

(Dr. Hari Singh)

to



Department of Computer Science & Engineering and Information
Technology

**Jaypee University of Information Technology Waknaghat,
Solan-173234, Himachal Pradesh**

ACKNOWLEDGEMENT

I would like to express my special thanks to my mentor Dr. Hari Singh who guided me throughout and by virtue of which i got the opportunity to work with my organization more effectively and as a result I'm able to show my report of the training, which also helped me in increasing my knowledge.

I am really thankful to him.

Awantika(171292)

Candidate's Declaration

I hereby declare that the work presented in this report entitled “ Cognizant Training Report” in partial fulfillment of the requirements for the award of the degree of **Bachelor of Technology in Computer Science and Engineering/Information Technology** submitted in the department of Computer Science & Engineering and Information Technology, Jaypee University of Information Technology Waknaghat is an authentic record of my own work carried out over a period from Feb 2021 to May 2021 under the supervision of **(Dr. Hari Singh)** (CSE dept.).

The matter embodied in the report has not been submitted for the award of any other degree or diploma.

A photograph of a handwritten signature in blue ink on a white surface. The signature is written in a cursive style and reads "Awantika".

(Student Signature)

Awantika , 171292

This is to certify that the above statement made by the candidate is true to the best of my knowledge.

A photograph of a handwritten signature in blue ink on a white surface. The signature is written in a cursive style and reads "Hari Singh".

(Supervisor Signature)

Dr. Hari Singh

Assistant Professor

CSE dept.

Project Report Undertaking

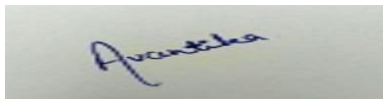
I Ms. Awantika Roll no._171292 from the Branch Computer Science is doing my internship with Cognizant Technology Solutions from 16February,2021 to 10July,2021.

As per procedure I have to submit my project report to the university related to my work that I have done during this internship.

I have compiled my project report. But due to COVID-19 situation my project mentor in the company is not able to sign my project report.

So I hereby declare that the project report is fully designed/developed by me and no part of the work is borrowed or purchased from any agency. And I'll produce a certificate/document of my internship completion with the company to TnP Cell whenever COVID-19 situation gets normal.

Signature

A rectangular box containing a handwritten signature in blue ink that reads "Awantika".

Awantika

Roll No.____171292

Date____24May,2021____

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ABOUT THE COMPANY

Cognizant (Nasdaq-100: CTSI) is one of the world's leading professional services companies, transforming clients' business, operating, and technology models for the digital era. Our unique industry-based, consultative approach helps clients envision, build and run more innovative and efficient businesses. Headquartered in the U.S., Cognizant is ranked 194 on the Fortune 500 and is consistently listed among the most admired companies in the world.

India is a crucial piece of our global business strategy, with global delivery centers in Mumbai, Bangalore, Chennai, Coimbatore, Gurgaon, Hyderabad, Kochi, Kolkata and Pune.

ABOUT THE TRAINING

Informatica DQ training spans around sixteen weeks. The training program has designed to improve the learning agility of the Gen Cs and help them in their continuous learning endeavors with trainer guidance.

In the early days of training Gen Cs are provided with the following by the respective Coaches and are given the following:

- Training Schedule.
- Informatica DQ curriculum access in Cognizant Learn to access contents/hands-on as part of training.
- On Demand / Persistent tool wire labs, environment details (Virtual environment) to connect to Informatica and other BU specific Skills.
- The server ID/password to login to tool shall be available in the desktop of the On-Demand or Persistent lab for practice/hands-on.

Assessments

- There are two knowledge based assessments and three skill-based assessment as part of training. Assessments details are available as part of the timetable and shall be scheduled as per the training plan by coaches. Respective coaches would provide the orientation.

At last gen's are provided with a case study project to implement their knowledge.

ABSTRACT

IDQ is the combination of applications and components which use Informatica Powercentre to deliver data quality in various scenarios. It has two components such as Data Quality Workbench and Data Quality Server.

So far we have read about the basic concepts of sql, java and informatica in this training and we have provided the insight details of the topics mentioned above in our report.

CHAPTER 1

SQL:

Structured Query Language - SQL

- SQL
- The most powerful & comprehensive database language – You can create, organize, retrieve and maintain data using SQL – Flexible and efficient language designed to manipulate and examine relational data

SQL TOPICS:

- 1.Data Definition Language
- 2.Alter tables
- 3.Data Manipulation
- 4.Selecting from Table
- 5.Selecting from multiple tables
- 6.Database Design
- 7.Aggregate Functions
- 8.Subqueries
- 9.MySql Functions Date Functions and String Functions.

1. Data Defintion Language:

A data definition language (DDL) is a computer language used to create and modify the structure of database objects in a database. These database objects include views, schemas, tables, indexes,etc.

2.Alter tables:

SQL alter table command is used to add,delete or modify columns in an existing table.

Syntax to add new column:

```
ALTER TABLE table_name ADD column_name datatype;
```

3.Data Manipulation:

It is a computer programming language used for adding and inserting, deleting, modifying or updating data in a database.It is a sublanguage of a broader database language as SQL and with DML comprised some of the operators in the language.

4.Selecting from Table:

The SELECT statement is used to fetch the data from a database table which returns data in the form of a result. These result tables are known as result sets.

5. Selecting from multiple tables:

The SELECT statement is used to retrieve fields from multiple tables. We use join query to get data from multiple tables.

6. Database Design:

It decides the type of objects we want to insert in the database. It has one-to-one relationships, one-to-many relationships, etc.

7. Aggregate Functions:

An aggregate function is a function where the values of multiple rows are grouped together as input on certain criteria to form a single value.

8. Subqueries:

Subquery is a query within another SQL query and used with WHERE clause. It is used to return data that will be used in the main query as a condition to further restrict the data to be retrieved.

9. MySQL Functions Date Functions and String Functions.

SQL string functions are used for string manipulation. It has a set of functions and operators for the proper use.

SYSTEM DESIGN:

1. Student info Table from Database:

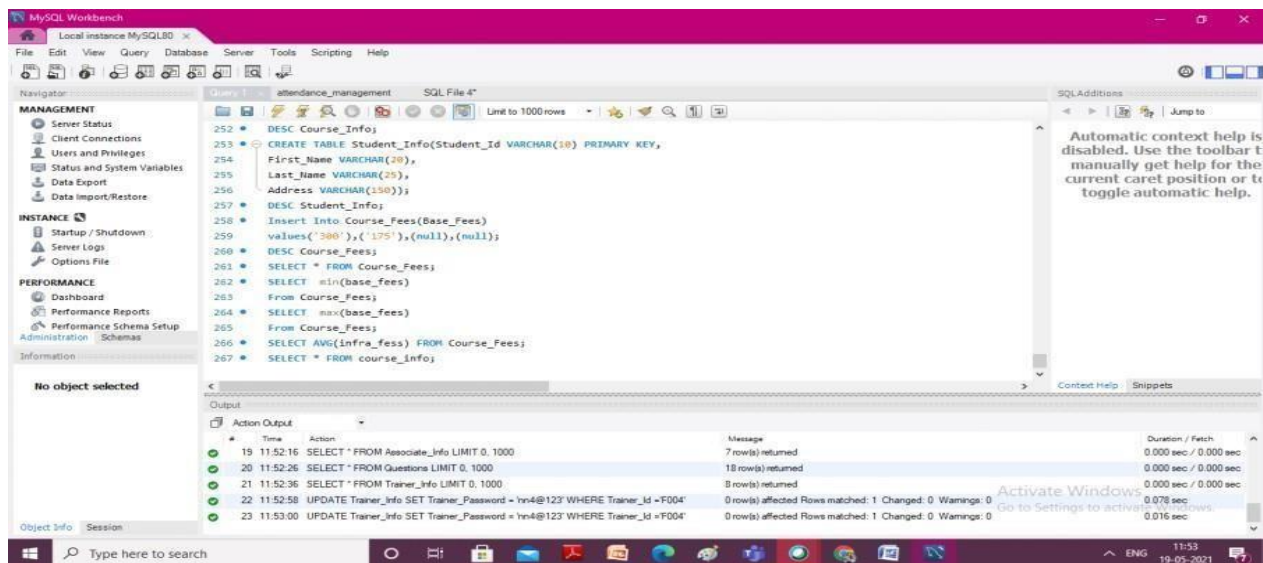


Fig.1.1

Associate Status Table from database:

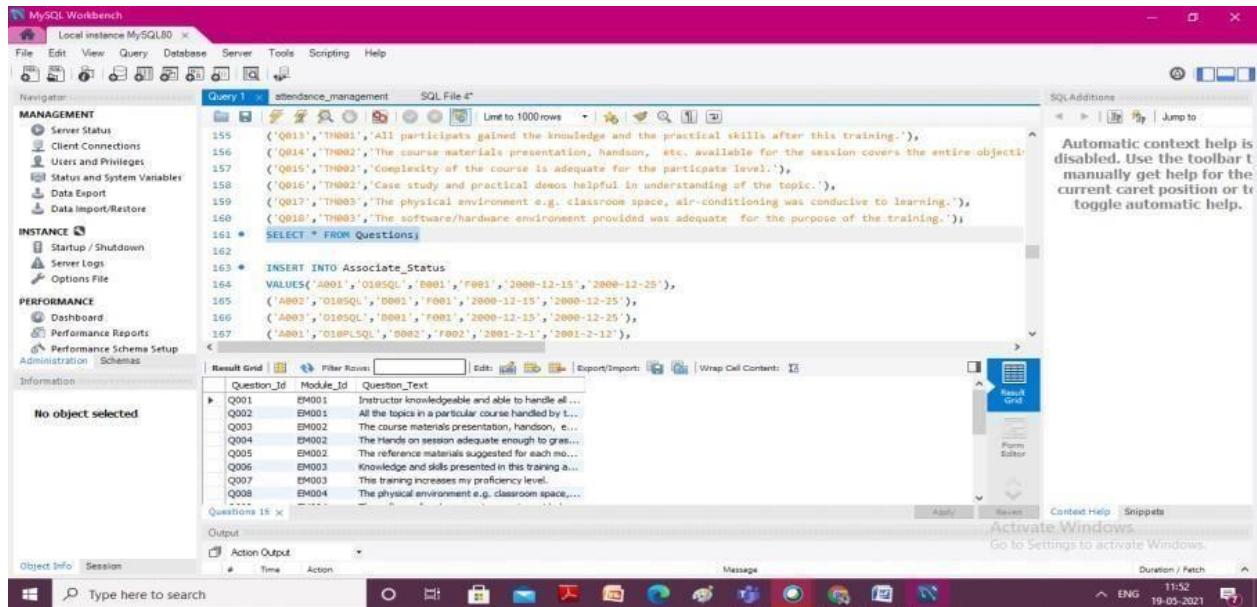


Fig.1.2

Update Table in Trainer_Info:

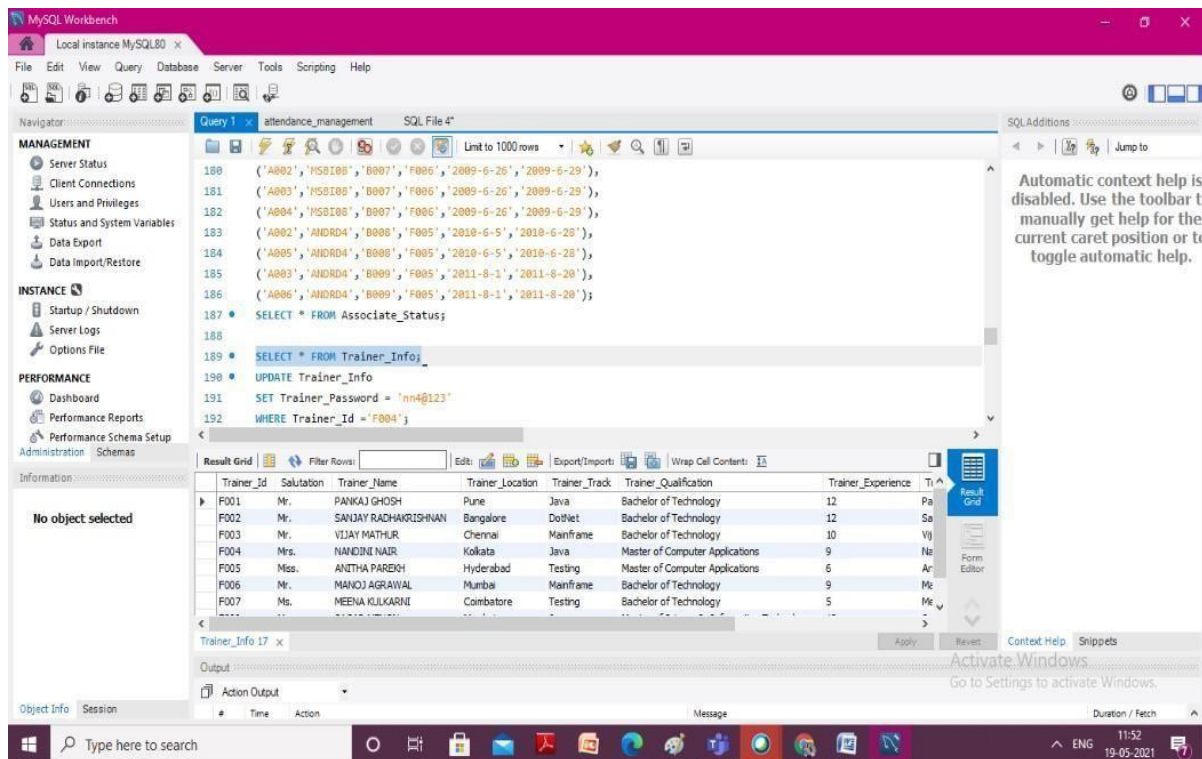


Fig.1.2

Insert data into Associate_Info table:

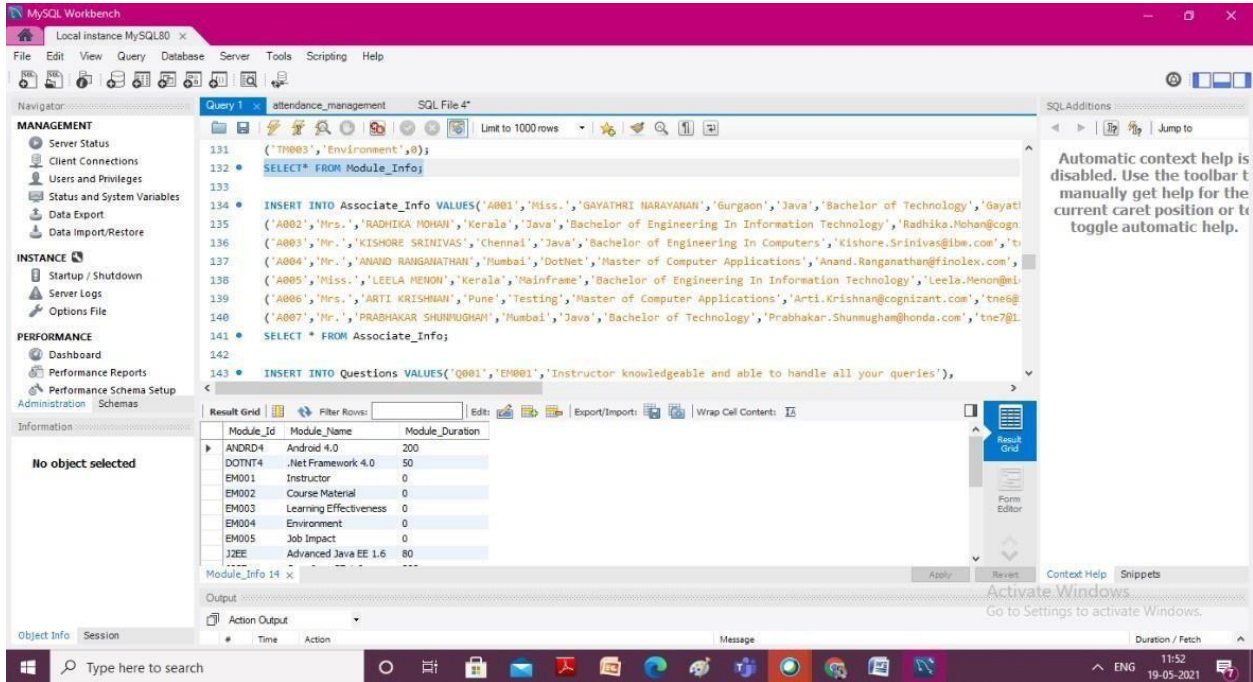


Fig.1.3

Insert data into Module_Info:

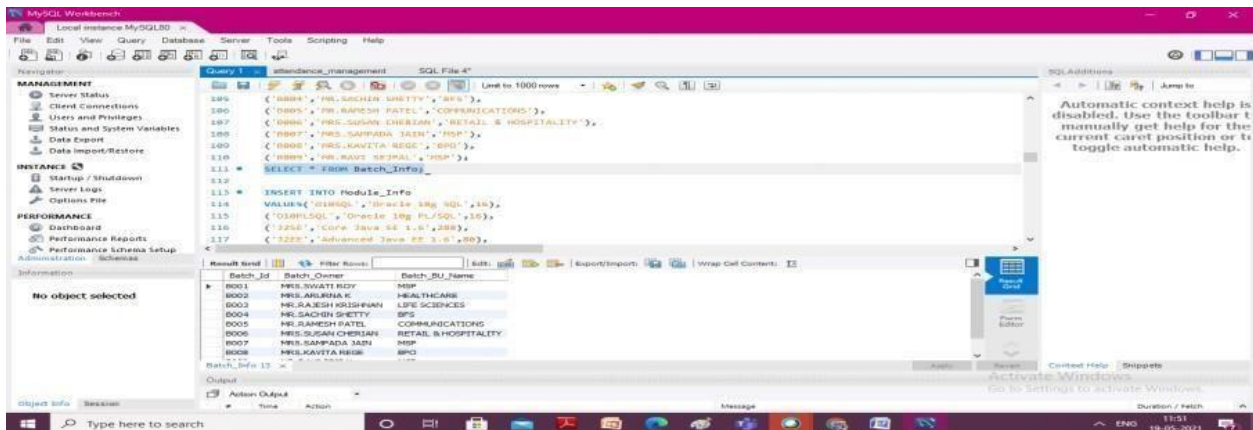


Fig.1.4

Insert data into Batch_Info Table:

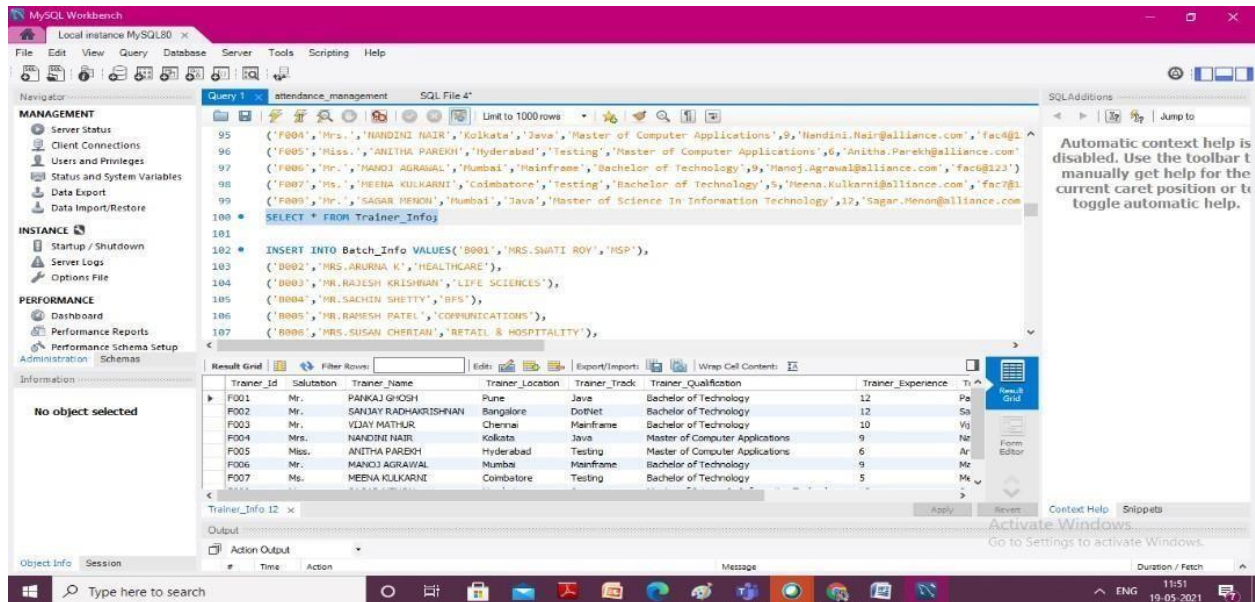


Fig.1.5

Creating table Trainer_Feedback in the database:

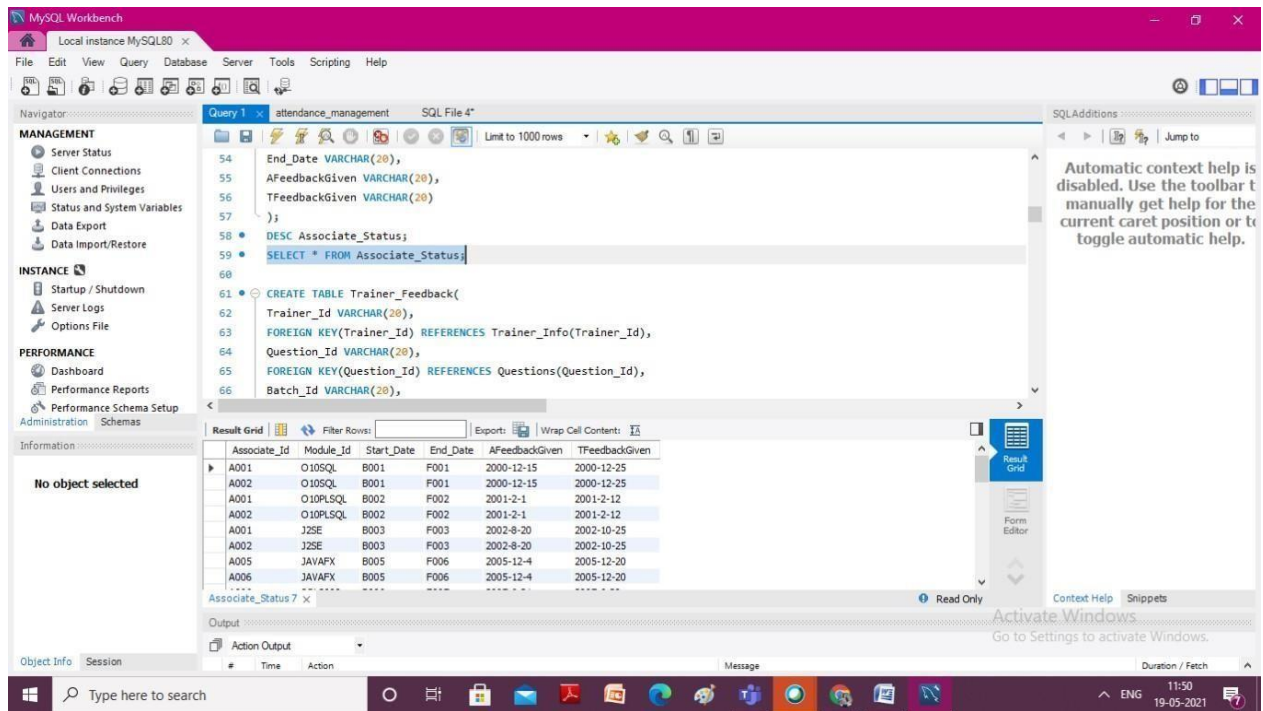


Fig.1.6

Creating Table Questions in the Database:

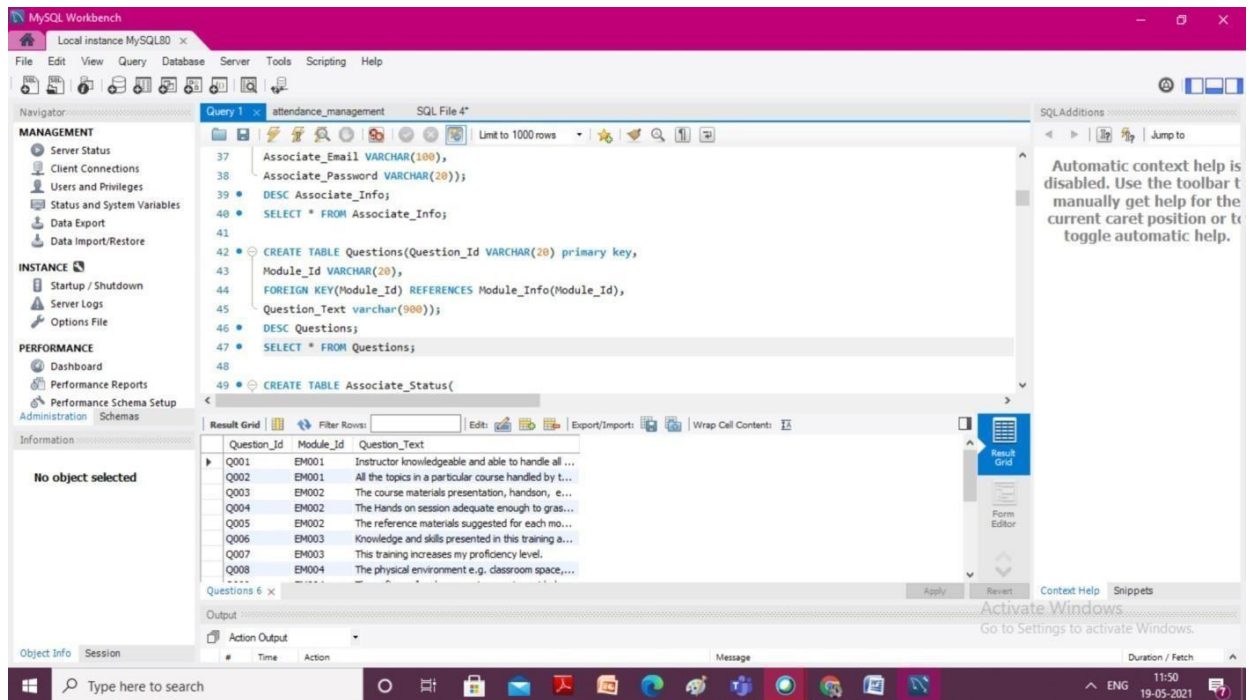


Fig.1.7

Creating table Module_Info in the databs

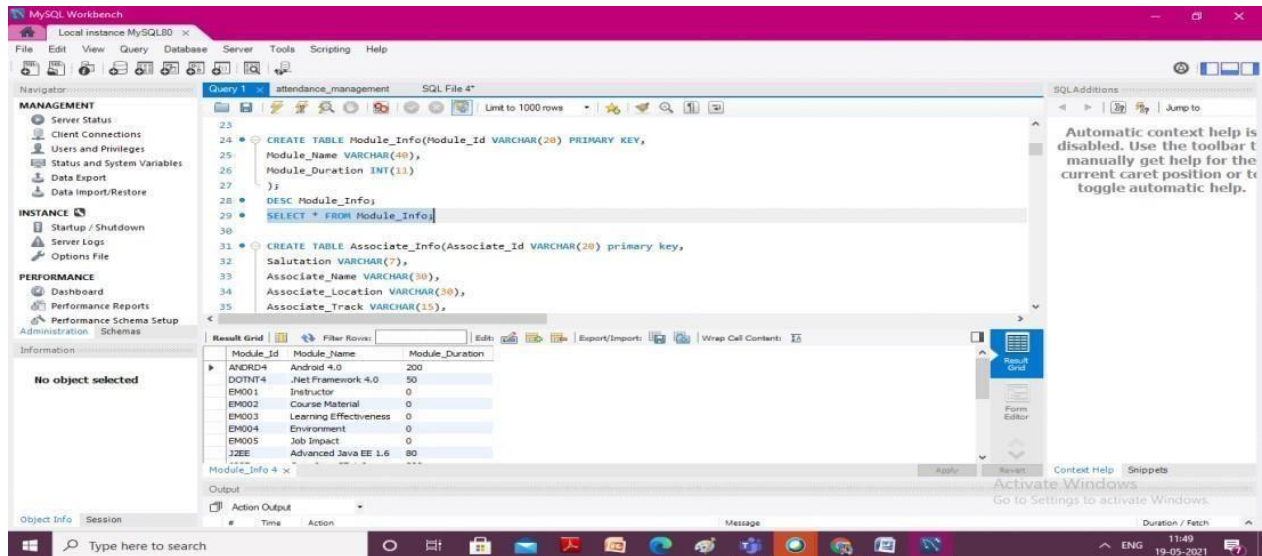


Fig.1.8

Creating Batch_Info table in the database:

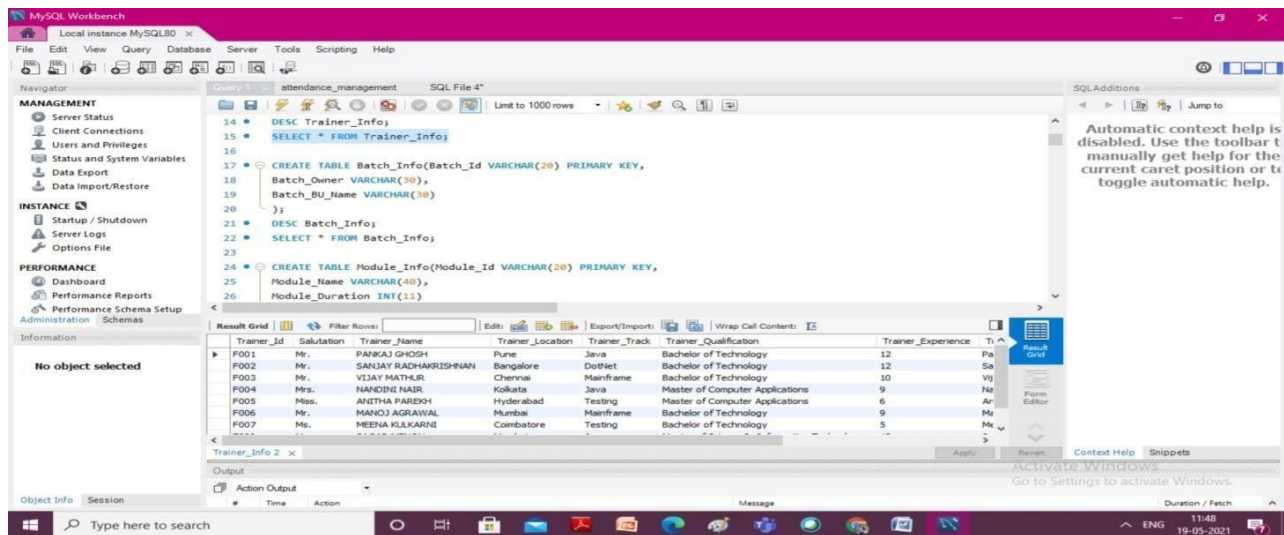


Fig.1.9

Describe table Trainer_Info:

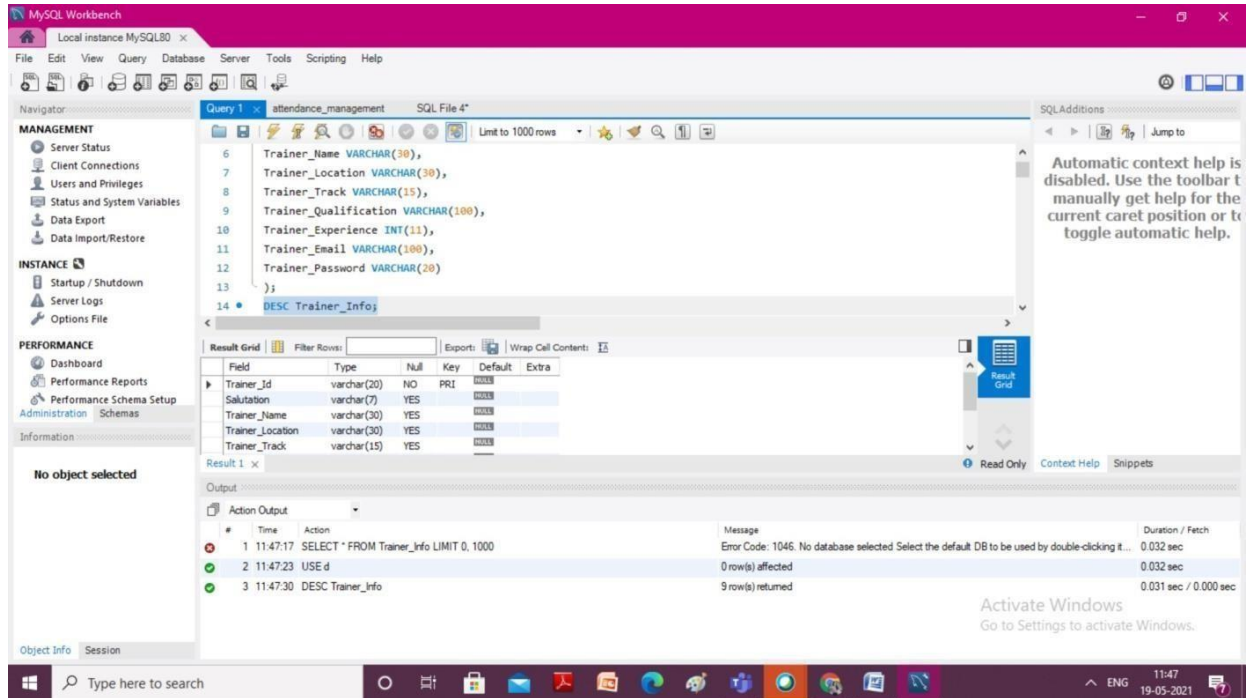


Fig1.10

Display Minimum and Maximum Base Fees from the Course Fees:

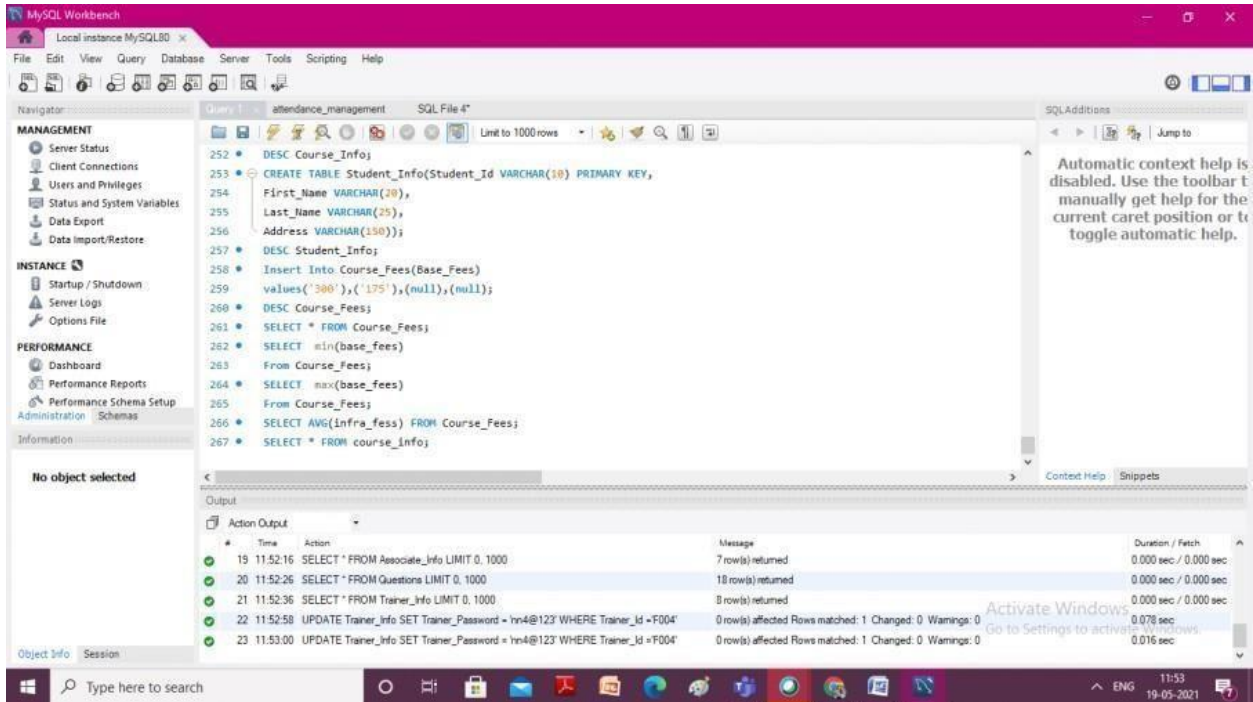


Fig.1.11

COFFEE STORE DATABASE

Customers table in the database:

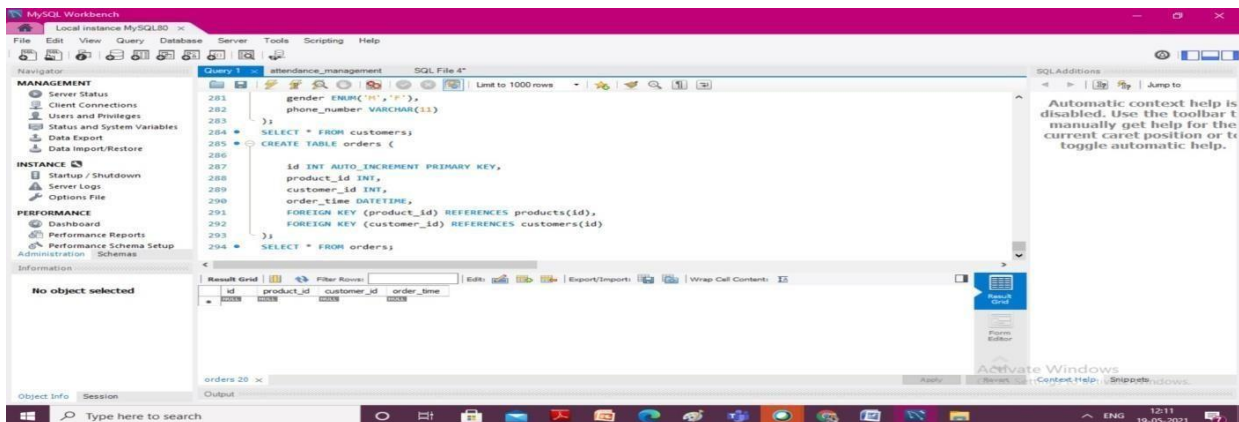


Fig1.12

Products and order tables in the database:

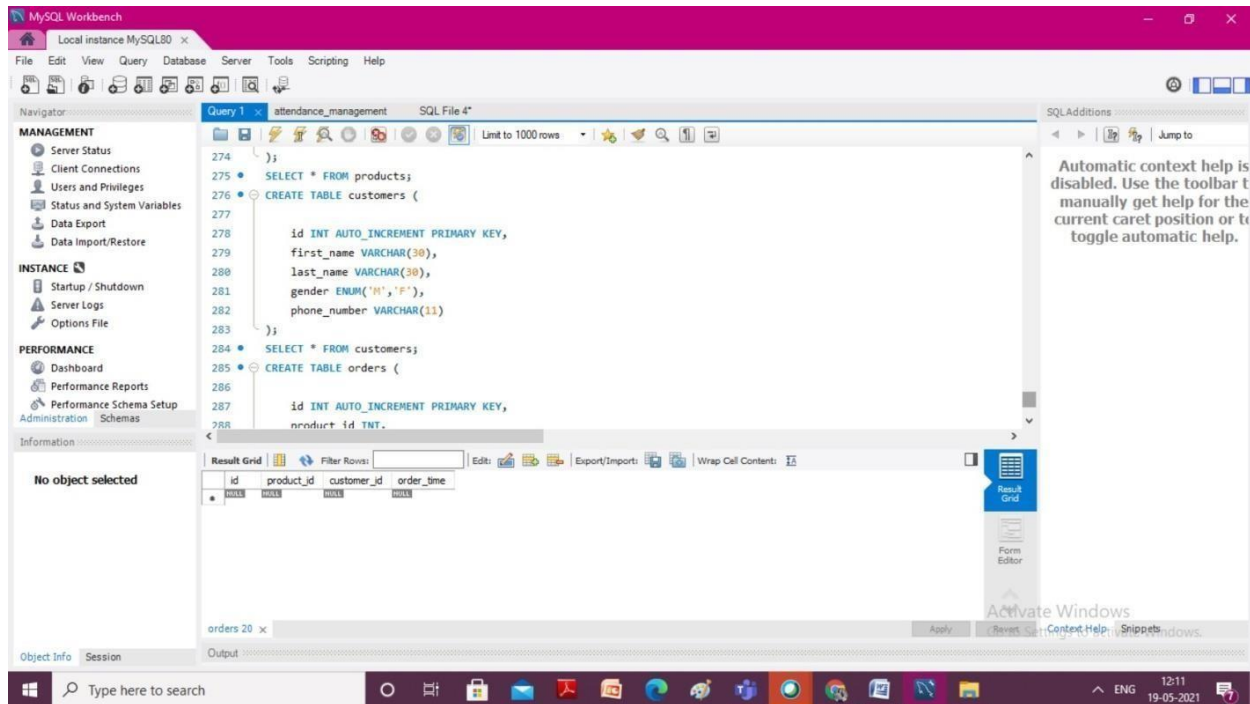


Fig1.13

CHAPTER 2

JAVA:

JAVATOPICS:

1. Building and deploying java programs with JAR files:

2. File Processing and Exception Handling:

3. The Collection Framework:

a. Introduction to collections:

b. Traversing Lists and custom types:

c. HashSet and LinkedHashSet with Hashcode:

d. Collections Methods and using comparable interface.

e. HashMap, LinkedHashMap and TreeMap.

4. Java Generics

5. Concurrency in the Java

a. Threading

b. Starting threads and the Runnable Interface.

c. Thread safety using synchronization.

d. Thread Safety with collections.

5. JDBC(Java Database Connectivity)

a. Using MySql Database

b. Database and SQL Commands

c. Use JDBC to send SQL Statements after connection

d. Inserting, updating and deleting data using JDBC.

1. Building and deploying java programs with JAR files:

We create a file JAR with manifest which contains the entry main() method to launch the application.

2. File Processing and Exception Handling:

By using file processing we can create ,insert ,update and delete files.

Exception Handling:

When an error occurred java stop and show a message and throws an exception. It has try, catch, throw, throws statements.

3. The Collection Framework

a. Introduction to collections:

Java collections manage the storage and control of articles..

Java Collections offer a variety of options to handle data efficiently and use data structures like ArrayList, Vector, LinkedList, PriorityQueue, HashSet, LinkedHashSet and TreeSet.

b. Traversing Lists and custom types:

To perform some operations on every node of list traversing is used for that. It can be done in singly linked-list.

c. HashSet and LinkedHashSet with Hashcode:

HashSet: It creates a collection that uses hashtable for storage. It implements the Set interface and inherits AbstractSet Class.

LinkedHashSet:

It is an ordered and sorted HashSet that uses doubly-linked List for all elements.

d.Collections Methods and using comparable interface:

It is a member of java collection framework.The java.util package contains collection class. Collections class is essentially utilized with the static strategies that work on the assortments or return the assortment. Every one of the strategies for this class toss the NullPointerException if the collections or item passed to the techniques is invalid.

e.HashMap, LinkedHashMap and TreeMap:

HashMap: In HashMap data is stored in “key/value” pairs. It can stores different data types such as String keys and Integer values. It is imported by using

Import.java.util.HashMap;

LinkedHashMap: It inherits HashMap class amd implements the Map interface. LinkedHashMap class is the Hashtable and the linkedlist implementation of Map interface .

TreeMap:It is the implementation of Map interface and Navigable Map along with the class of AbstractMap.

4. Concurrency in the Java

A Database and SQL Commands:

SELECT - extricates information from a data set

UPDATE - refreshes information in a data set

Erase - erases information from a data set

Supplement INTO - embeds new information into a data set

Make DATABASE - makes another data set

Change DATABASE - alters an information base

Make TABLE - makes another table

Change TABLE - alters a table

DROP TABLE - erases a table

Make INDEX - makes a list (search key)

DROP INDEX - erases a record

c. Use JDBC to send SQLStatements after connection:

To make a Statement occasion, you call the createStatement() technique on the Connection object you have recovered utilizing one of the DriverManager.getConnection() or DataSource.getConnection() strategies depicted prior.

When you have a Statement case, you can execute a SELECT inquiry by calling the executeQuery(String) strategy with the SQL you need to utilize.

To refresh information in the data set, utilize the executeUpdate(String SQL) strategy. This strategy returns the quantity of columns coordinated by the update proclamation, not the quantity of lines that were changed.

d. Inserting, updating and deleting data using JDBC:

The SQL explanation will be a SELECT or an UPDATE/INSERT, one can utilize the execute(String SQL) technique. This technique will return valid if the SQL question was a SELECT, or bogus on the off chance that it was an UPDATE, INSERT, or DELETE explanation. In the event that the assertion was a SELECT inquiry, you can recover the outcomes by calling the getResultSet() strategy. On the off chance that the proclamation was an UPDATE, INSERT, or DELETE articulation, you can recover the influenced lines tally by calling getUpdateCount() on the Statement case.

3. SYSTEM DESIGN:

Car Dealership Project:

File Dealership.java:

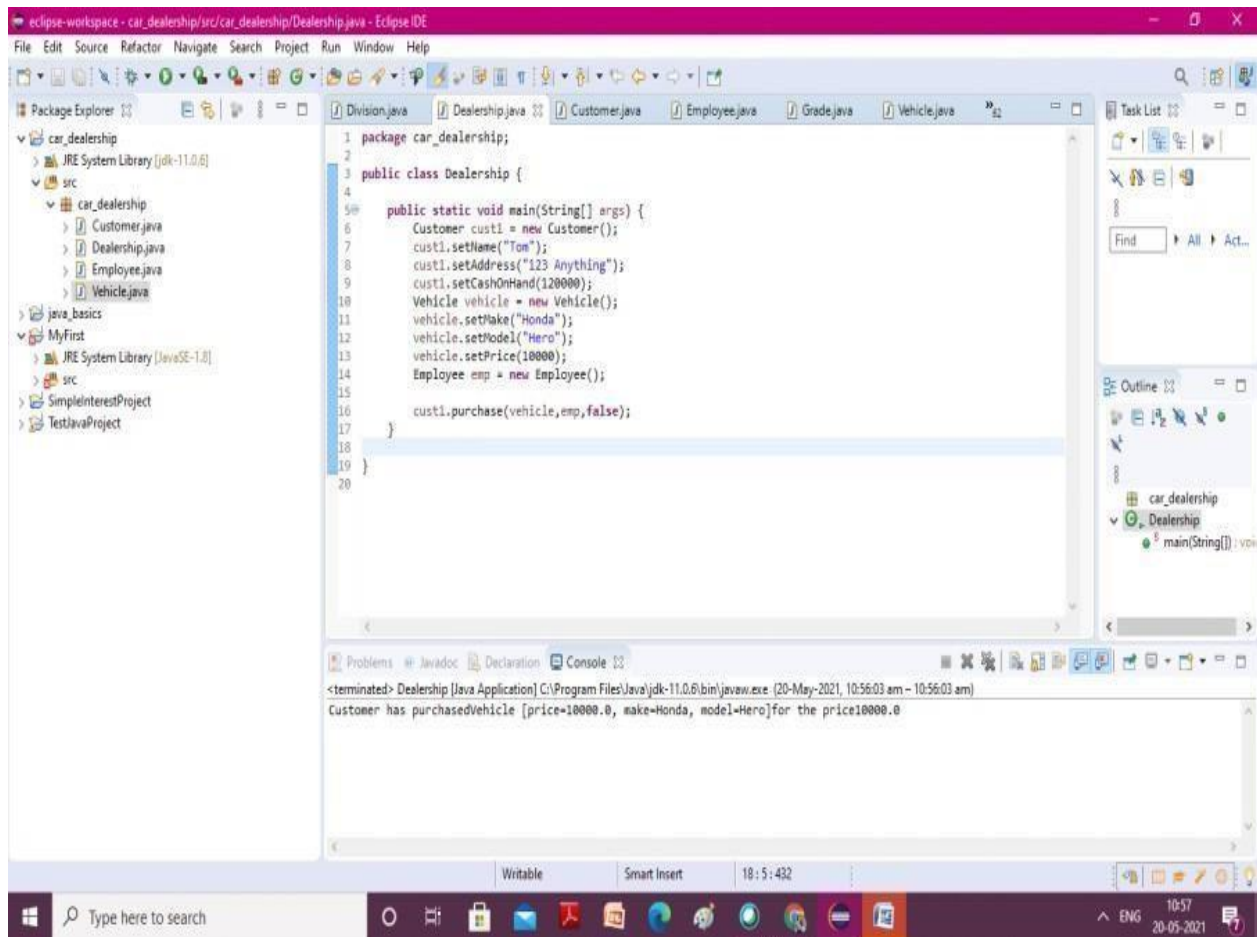


Fig.2.1

File Customer.java:

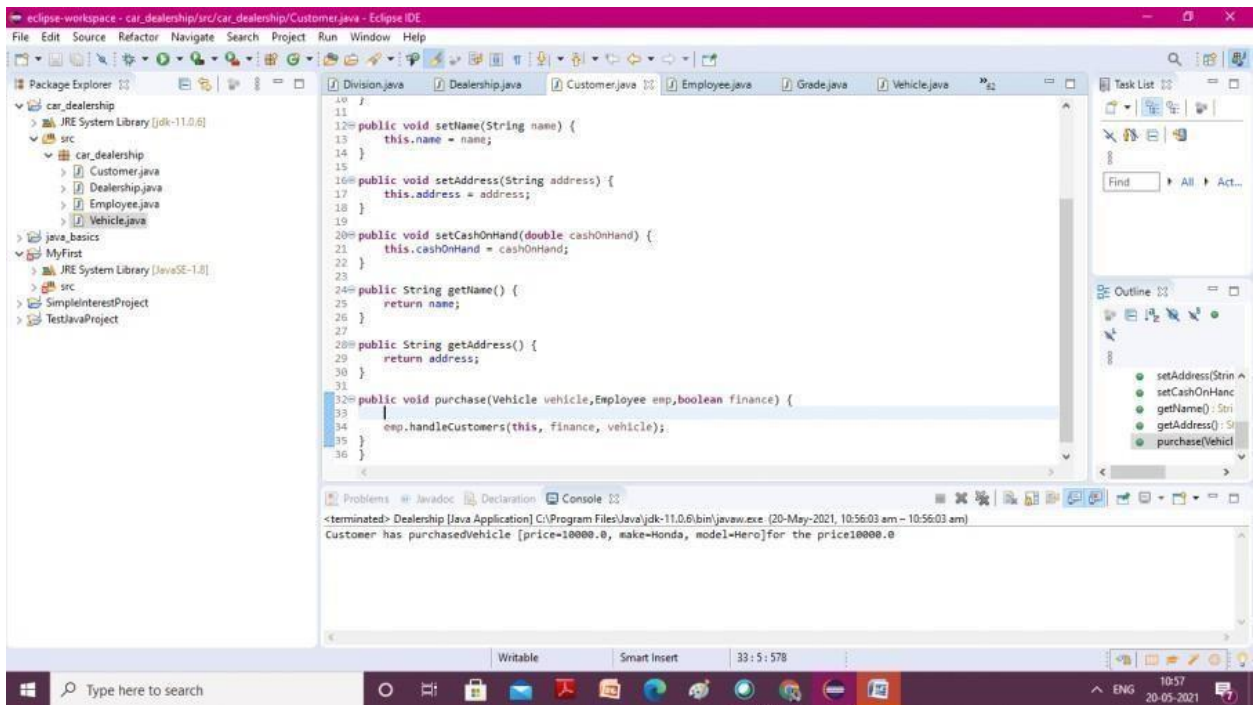


Fig.2.2

File Employee.java:

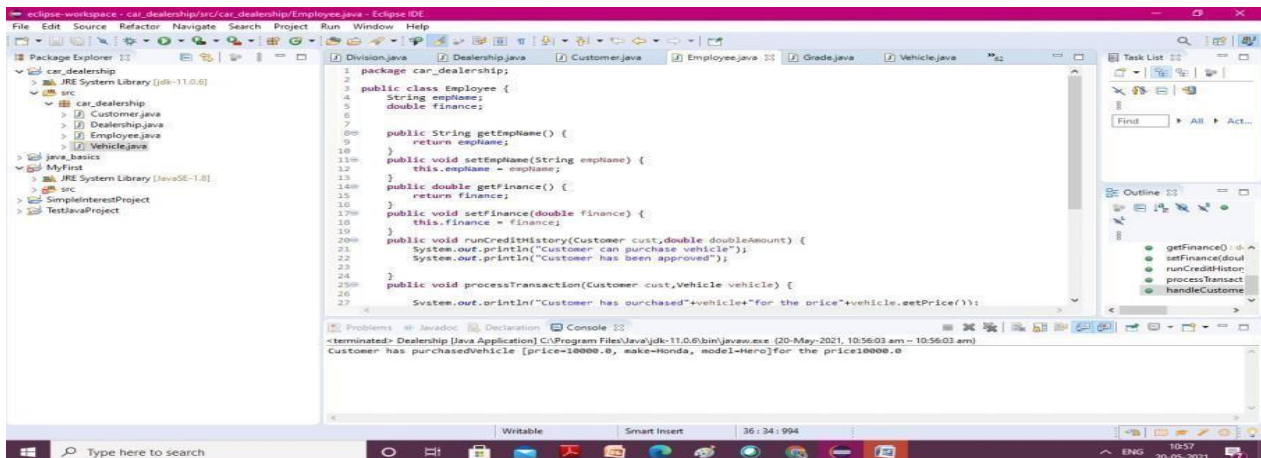


Fig.2.3

File Vehicle.java:

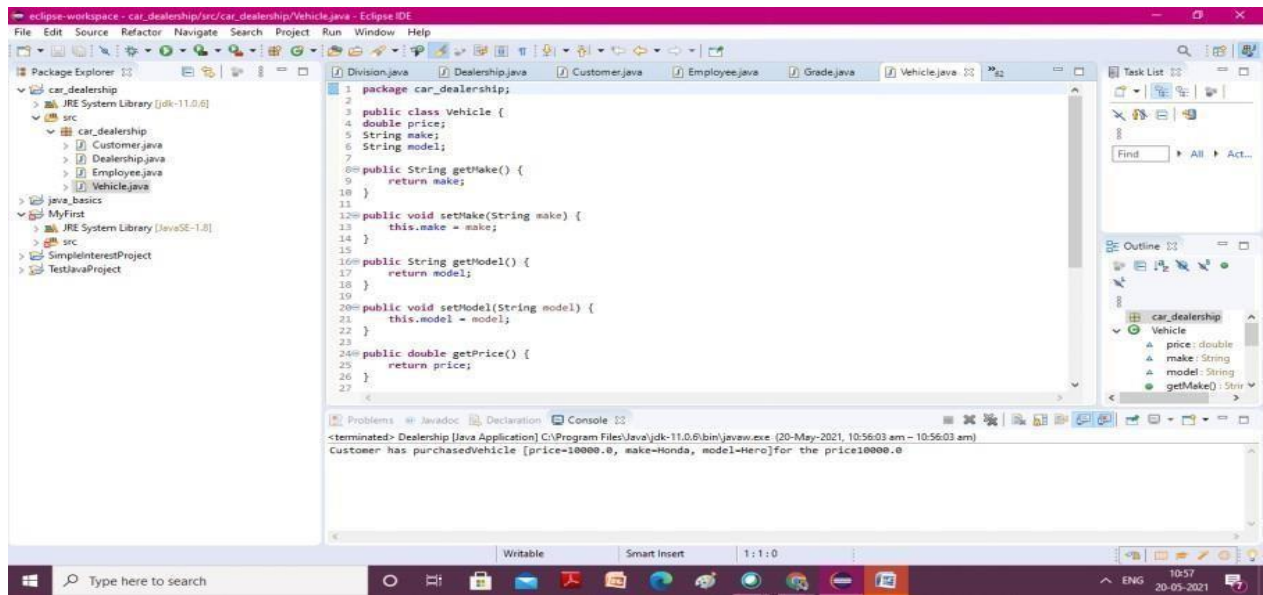


Fig.2.4

CHAPTER - 3

INFORMATICA:

Informatica Transformations:

Informatica Transformations are vault objects which can make, read, alters, or passes information to the characterized target designs like tables, records, or some other targets.

In Informatica, the reason for change is to adjust the source information as per the necessity of the objective framework. It additionally guarantees the nature of the information being stacked into the objective.

A Transformation is utilized to address a bunch of rules, which characterize the information stream and how the information is stacked into the objectives.

Informatica gives numerous changes to perform explicit functionalities.

In changes, To passing the information, we need to associate the ports to it, and through the yield ports, it returns the yield.

Grouping of Transformation

Change is grouped into two classes the first dependent on availability and second dependent on the adjustment of a few columns. In the first place, we will take a gander at the change dependent on availability.

1. Here are two kinds of change dependent on availability, for example,

- o Connected Transformations

- o Unconnected Transformations

In Informatica, one change is associated with different changes during mappings are called associated changes.

For instance, Source qualifier change of Source table Stud is associated with channel change to channel understudies of a class.

Those changes whose not connection to some other changes are called detached changes.

Promotion

Their usefulness is utilized by calling them inside different changes. Furthermore, these changes are not piece of the pipeline.

The associated changes are favored when the change is required each info line or expected to return a worth.

The detached changes are helpful if their usefulness is required intermittently just or dependent on specific conditions. For instance, figure the expense subtleties if charge esteem isn't accessible.

1. Here are two kinds of changes dependent on the adjustment of a few lines, for example,

- o Active Transformations

- o Passive Transformations

Dynamic Transformations are the individuals who change the information lines, and the quantity of info lines passed to them. For instance, if a change gets 10 quantities of lines as information, and it returns 15 quantities of lines as a yield, at that point it is a functioning change. In the dynamic change, the information is altered in the column.

Alloof Transformations don't change the quantity of info lines. In uninvolved changes, the quantity of info and yield lines stays as before, and information is altered at line level as it were.

In the latent change, we can't make new columns, and no current lines dropped.

Rundown of Transformations :

- Source Qualifier Transformation :

It converts the source data types .

It uses joins, filter rows and SQL query.

- Aggregator Transformation :

It performs all the calculations such as averages, sums ,counts,etc.

- Router Transformation :

In a Router change, Data Integration is utilized as a channel condition to assess each column of approaching information. It checks the states of every client characterized bunch prior to handling the default bunch.

On the off chance that a line associates more than one gathering channel condition, Data Integration passes the column on numerous occasions. We can drop pushes that don't meet any of the conditions to a default yield bunch.

o Joiner change :

The joiner change is utilized to join two heterogeneous sources. The joiner change joins sources based on a condition that matches at least one sets of sections between the two sources.

The two information pipelines incorporate an expert and a detail pipeline. We need to join the yield of the joiner change with another source to join multiple sources. What's more, to join n number of sources in planning, we need n-1 joiner changes.

In joiner change, there are two sources which we are utilizing for joins, for example,

Master Source

Detail Source

· Rank Transformation :

The rank transformation has an output port, and it is used to assign a rank to the rows.

In Informatica, it is used to select a bottom or top range of data. While string value ports can be ranked, the Informatica Rank Transformation is used to rank numeric port values. One might think MAX and MIN functions can accomplish this same task.

· Sequence Generator Transformation :

The Sequence Generator change is utilized to make exceptional essential key qualities and supplant missing essential keys.

For instance, in the event that we need to allocate arrangement esteems to the source records, we need to utilize a grouping generator.

The grouping generator change comprises of two yield ports. We can't alter or erase these ports, for example,

CURRVAL

NEXTVAL

· Transaction Control Transformation :

An exchange is the arrangement of columns limited by submit or rollback lines. We can characterize an exchange dependent on the fluctuating number of information columns. We can likewise distinguish exchanges dependent on a gathering of columns requested on a typical key, like worker ID or request section date.

When handling a high volume of information, there can be a circumstance to submit the information to the objective. Assuming a submit is performed excessively fast, it will be an overhead to the framework.

On the off chance that a submit is performed past the point of no return, on account of disappointment, there are odds of losing the information. So the Transaction control change gives adaptability.

o Lookup and Re-usable change :

Query change is utilized to look into a source, source qualifier, or focus to get the applicable information.

It is a sort of join activity where one of the joining tables is the source information, and the other joining table is the query table.

The Lookup change is utilized to recover information dependent on a predefined query condition. For instance, we can utilize a Lookup change to recover values from a data set table for codes utilized in source information.

At the point when a planning task incorporates a Lookup change, at that point the assignment inquiries the query source dependent on the query fields and a query condition. The Lookup change returns the consequence of the query to the objective or another change.

We can arrange the Lookup change to return a solitary column or various lines. This is the inactive change which permits playing out the query on the level records, social table, perspectives, and equivalent words.

At the point when we arrange the Lookup change to return various columns, the Lookup change is a functioning change. The query change upholds flat blending, for example, equijoin and nonequijoin.

At the point when the planning contains the stir up change, the mix administration inquiries the lock up information and contrasts it and query input port qualities.

The query change is made with the accompanying kind of ports, for example,

Info port (I)

Yield port (O)

Look into Ports (L)

Return Port (R)

o Normalizer Transformation :

The Normalizer is a functioning change. It is utilized to change over a solitary column into different lines. At the point when the Normalizer change gets a line that contains different happening information, it returns a line for each case of the numerous happening information.

Assuming in a solitary line, there is rehashing information in numerous segments, it tends to be parted into different columns. Here and there we have information in numerous happening segments.

For instance, a social source incorporates four fields with level deals information. We can design a Normalizer change to create a different yield column for every level.

At the point when the Normalizer returns different lines from an approaching line, it returns copy information for single-happening approaching segments.

The Normalizer change gets a line that contains different happening segments and returns a line for each occurrence of the numerous happening information. The change measures various happening sections or different happening gatherings of segments in each source column.

Channel Transformation is a functioning change since it changes the quantity of records. We can channel the records as per the necessities by utilizing the channel condition.

Stage 1: Create a planning having source "Stu" and target "Stu_target".

Stage 2: Then in the planning

1. Select Transformation menu
2. Select the make choice.

Stage 3: In the make change window

1. Select Filter Transformation from the rundown.
2. Enter Transformation name fltr_rollno_20
3. Select make choice

Stage 4: The channel change will be made, click on the Done fasten in the imaginative change window.

Stage 5: in the planning,

1. Drag and drop all the source qualifier segments from the channel change.
2. And Link the sections of channel change to the objective table.

Stage 6: Double snap on the channel change to open its properties, and

1. Select the properties menu.
2. Click on the channel condition manager.

Stage 7: Then,

1. Enter channel condition rollno=20.
2. Click on the OK catch.

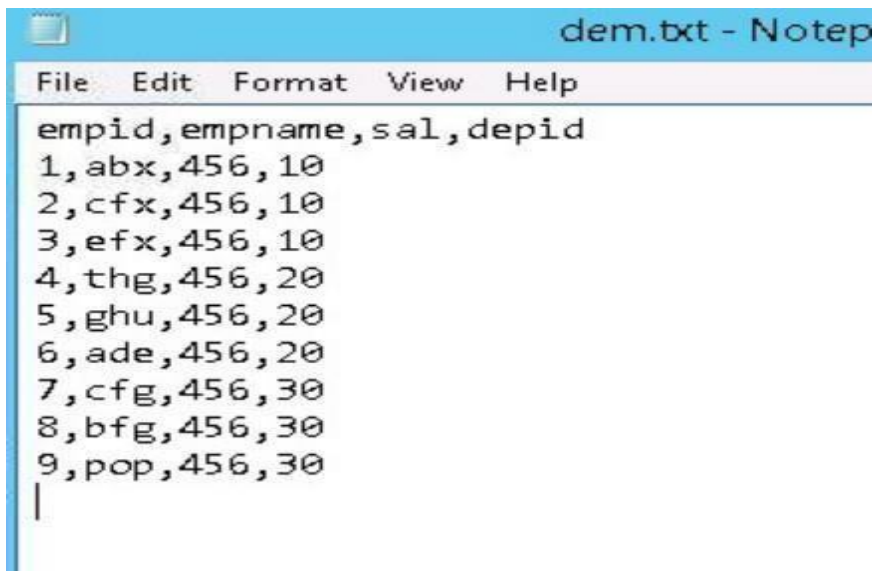
Stage 8: Again in the alter change window,

1. We will see the channel condition in the properties tab.

2. Click on the OK catch.

SYSTEM DESIGN:

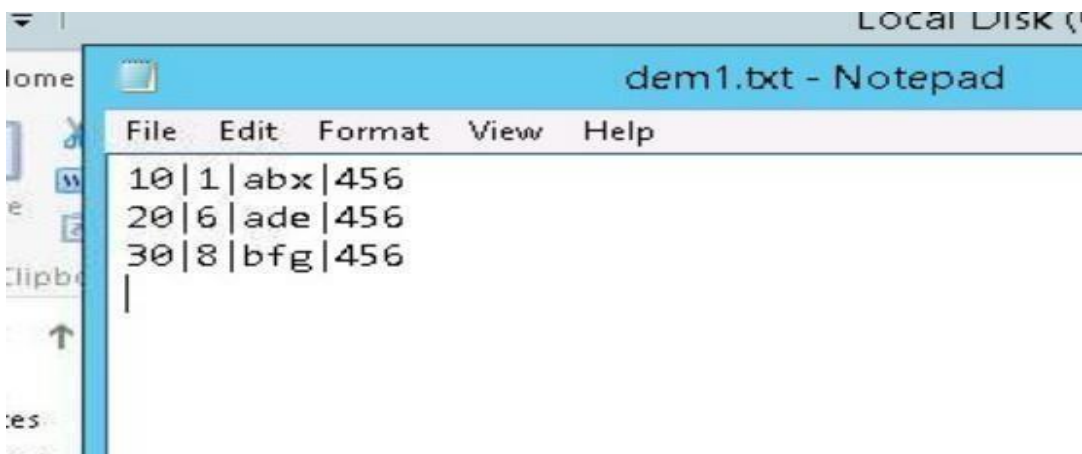
Source file:



```
dem.txt - Notepad
File Edit Format View Help
empid,empname,sal,depid
1,abx,456,10
2,cfx,456,10
3,efx,456,10
4,thg,456,20
5,ghu,456,20
6,ade,456,20
7,cfg,456,30
8,bfg,456,30
9,pop,456,30
|
```

Fig.3.1

Target File(dem1.txt):



```
Local Disk (C:)
dem1.txt - Notepad
File Edit Format View Help
10|1|abx|456
20|6|ade|456
30|8|bfg|456
|
```

Fig.3.2

Target File(dem2.txt):

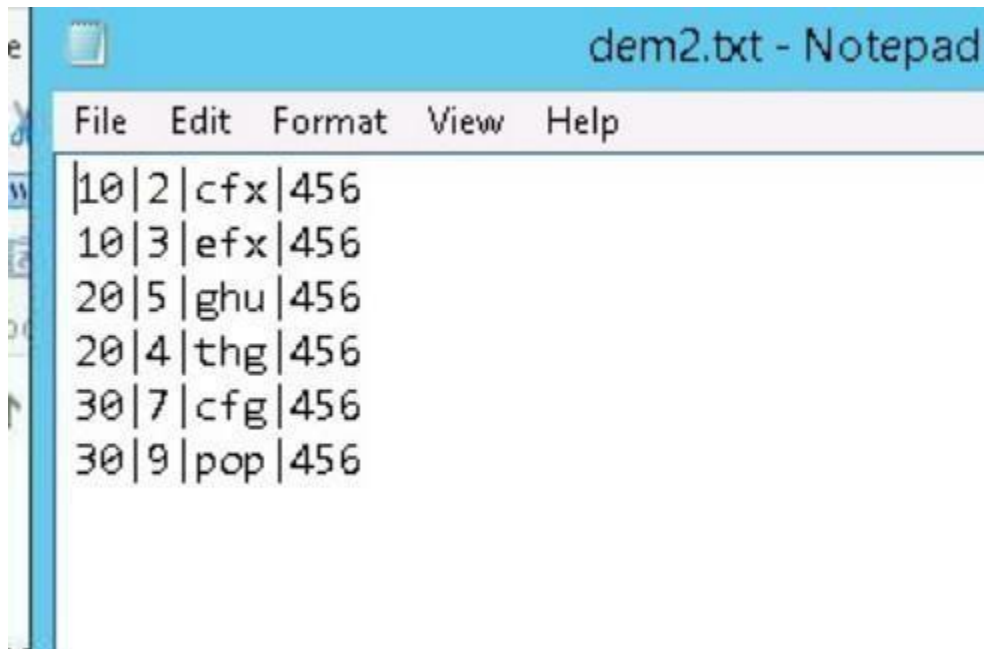


Fig.3.3

Mapping Designer:

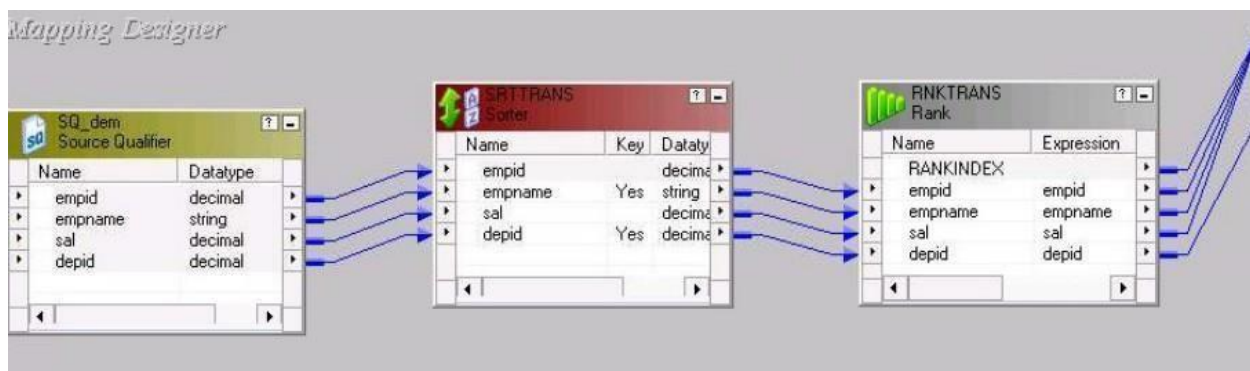


Fig.3.4

Sorter:

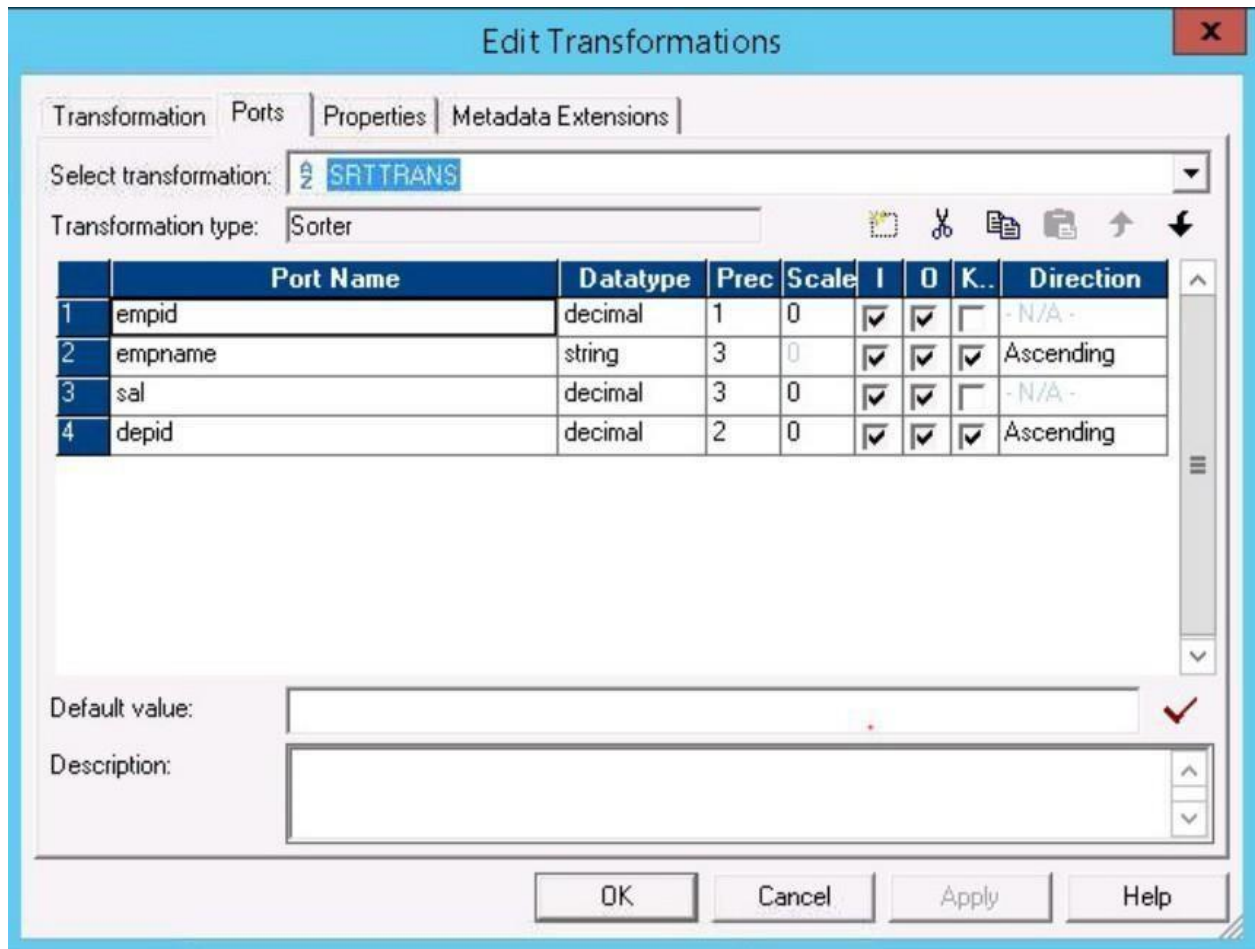


Fig.3.5

Rank:

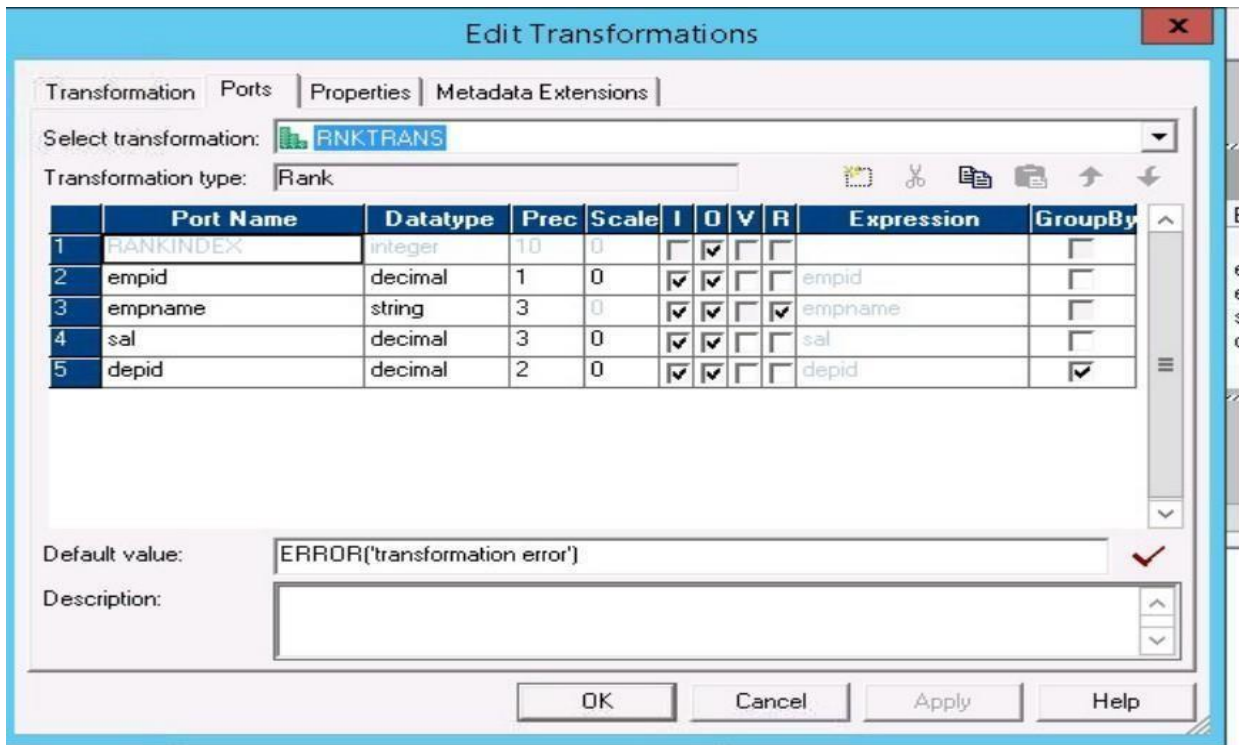


Fig.3.6

Mapping Designer:

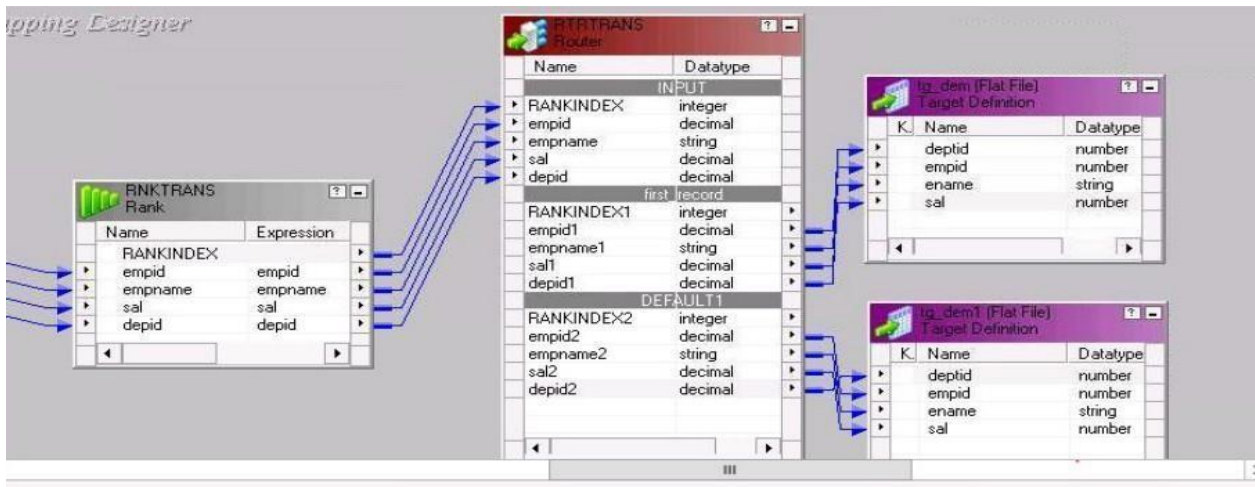


Fig.3.7

Router:

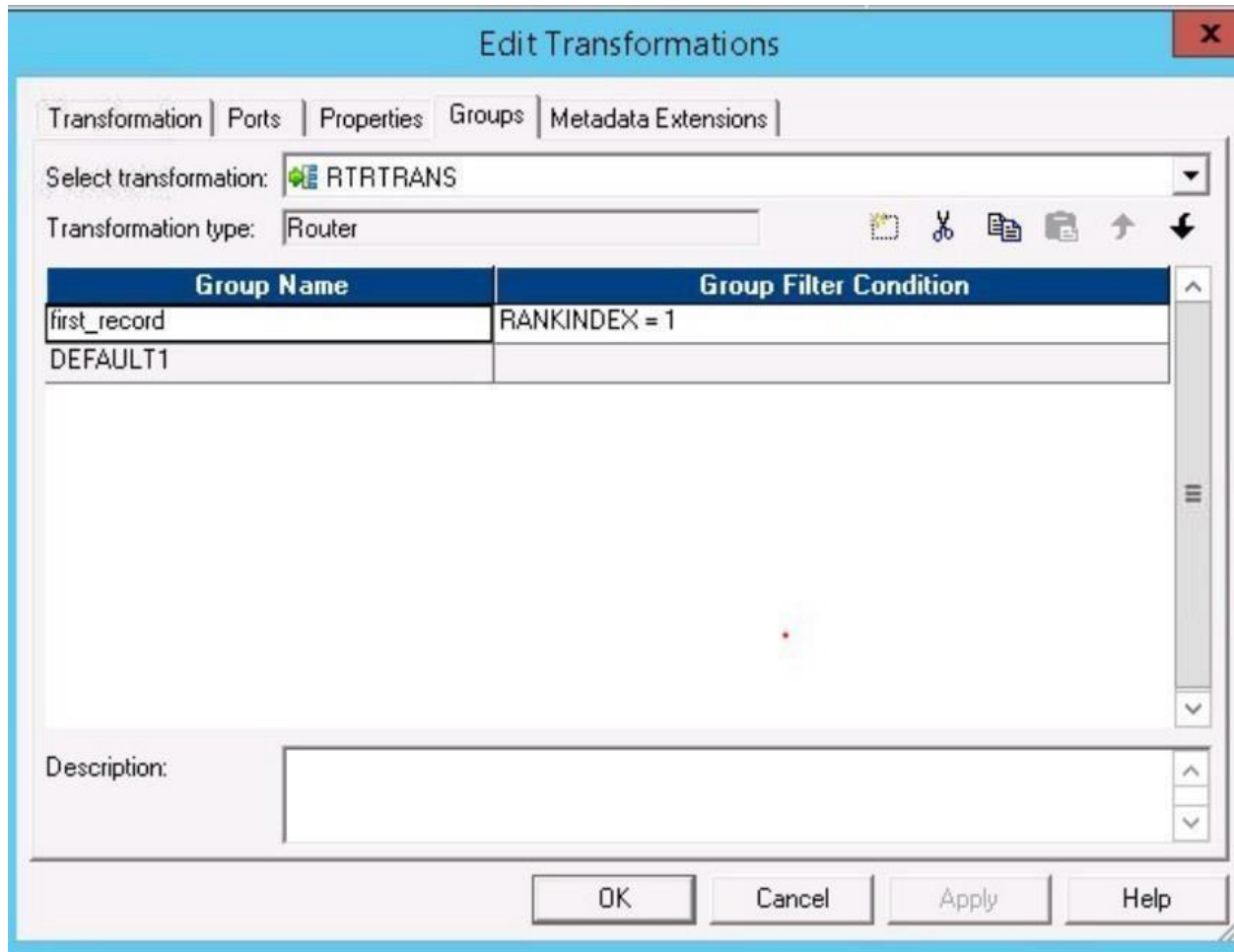


Fig.3.8

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