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## **1. Introduction**

The aim of this coursework is to design and create a database management system for a 'Good Food' company based on the provided case study and two unnormalized figures that depicted the basic concept of dishes and order values to be stored in the database system.

The required web-based database application will be developed with the support of the Visual Studio 2019 community using C# programming language. The application's overall design will be simple and convenient for any user to use. For data storage, I will use Oracle database, data modeler for creating ERD and table creation scripts and SQL developer for creating executing table creation and running all necessary SQL commands.

## 2. Textual Analysis and Preparation of Initial ERD

According to the given business case study, I came up with several key analyses for the initial ERD planning. The following is an explanation of the planning concept:

### Textual Analysis

Each restaurant registered in system can contain number of dishes and the dishes can belong to one or many restaurants.



Figure 1: Initial ERD of restaurant and Dishes

The customer can order from one or many restaurants and each restaurant can have multiple number of customers.



Figure 2: Initial ERD of Customer and Restaurant.

The customer can have multiples number of orders and each particular order belong to one customer.



Figure 3: Initial ERD of Customer and Order.

Each dish can have one or zero loyalty point where loyalty point can be for one or multiple dishes.



Figure 4: Initial ERD of Loyalty Point and Dishes.

The address contains multiple number of customers and customer must have one location address for the time of order delivery.



Figure 5: Initial ERD of Address and Customer.

The customers can order one or many dishes and dishes can have order from one or many customers.



Figure 6: Initial ERD of Order and Dishes.

Through all these analysis from the case study I have finally came into the conclusion of the initial ERD. Below presented diagram is the initial ERD from the case study.

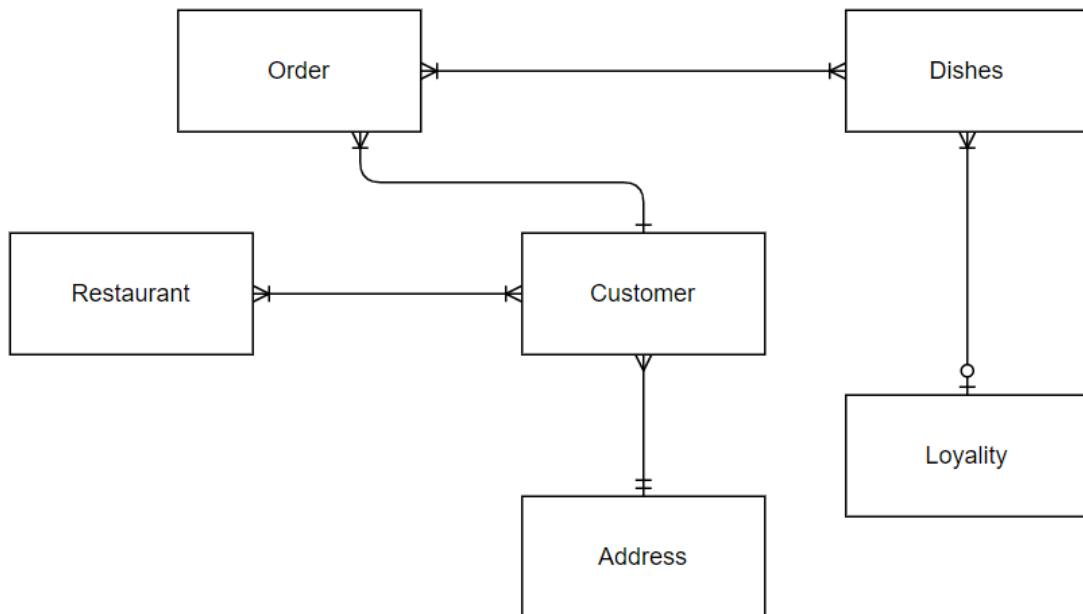


Figure 7: Initial ERD of the solution.

### 3. Normalization

#### 3.1 Normalization of Fig 1

##### Un-normalized Form (UNF)

All the attributes are written, and entity name is given. All Repeating Group are written within curly braces {}.

FoodDishes (DishCode, DishName, LocalName, {RestaurantName})

##### First Normal Form (1NF)

Removing repeating groups and adding DishCode on FoodDishes table as a primary key.

FoodDishes (DishCode, DishName, LocalName)

RestaurantDetails (RestaurantCode, RestaurantName, DishCode\*)

Note: (RestaurantCode is added because the table column did not have a unique identifier.)

(All the tables are in 1NF because all the repeating group is eliminated, unique identifier is identified for new relationship.)

##### Second Normalization Form (2NF)

All the functional dependencies are reviewed.

FoodDishes (DishCode, DishName, LocalName)

Note: There is no partial functional dependency in Food Dishes tables because the table does not contain any composite primary key.

RestaurantDetails (RestaurantCode, RestaurantName, DishCode\*)

RestaurantCode → restaurantName → RestaurantAddress (Partial dependency)

RestaurantCode, DishCode → nothing else (Full functional dependency)

(There is partial functional dependency in RestaurantDetails tables. After second normal form two different table is created separating partial dependency and functional dependency.)

RestaurantDetails (RestaurantCode, RestaurantName)

RestaurantFood (RestaurantCode\*, DishCode\*)

All the partial dependency are removed. Hence table of first normalization is already in second normal form.

FoodDishes (DishCode, DishName, LocalName)

RestaurantDetails (RestaurantCode, RestaurantName)

RestaurantFood (RestaurantCode\*, DishCode\*)

### Third Normalization Form (3NF)

Transitive dependency is checked and separated.

FoodDishes (DishCode, DishName, LocalName)

DishCode → DishName →

DishCode → LocalName →

Note: Food Dishes table does not consist of transitive dependency which mean table is in 3NF.

RestaurantDetails (RestaurantCode, RestaurantName)

RestaurantFood (RestaurantCode\*, DishCode\*)

Note: RestaurantDetails and RestaurantFood table does not consist of transitive dependency which mean table is in 3NF.

Final table from figure 1 are:

FoodDishes (DishCode, DishName, LocalName)

RestaurantDetails (RestaurantCode, RestaurantName)

RestaurantFood (RestaurantCode\*, DishCode\*)

### 3.2 Normalization of figure 2

#### Un-normalized Form (UNF)

All the attributes are written, and entity name is given. All Repeating Group are written within curly braces {}.

OrderRegister (SN, Date, {Time, OrderNumber, OrderAmount, DeliveryPoint, Status, {DishCode, DishName, OrderUnit, DishRate, LineTotal, Restaurant}})

#### First Normal Form (1NF)

Removing repeating groups and adding OrderNumber and DishCode as a primary key.

Order (SN, Date,)

OrderDetails (OrderNumber, OrderAmount, Time, DeliveryPoint, Status, SN\*)

Dish (DishCode, DishName, DishRate, OrderUnit, LineTotal, Restaurant, OrderNumber\*)

(All the tables are in 1NF because all the repeating group is eliminated, unique identifier is identified for new relationship.)

#### Second Normalization Form (2NF)

All the functional dependencies are reviewed.

Order (SN, Date,)

OrderDetails (OrderNumber, OrderAmount, Time, DeliveryPoint, Status, SN\*)

(Here, Above given table does not contains composite primary key so there is no partial dependency. Hence table of first normalization is already in second normal form.)

Dish Table contain composite primary key so Checking partial and full functional dependency for Dish table.

Dish (DishCode, DishName, DishRate, OrderUnit, LineTotal, Restaurant, OrderNumber\*)

DishCode → DishName, DishRate, Restaurant (Partial Dependency)

OrderNumber\* →

DishCode\*, OrderNumber\* → OrderUnit, LineTotal (Full Functional Dependency)

Dish (DishCode, DishName, DishRate, Restaurant)

Receipt (DishCode\*, OrderNumber\*, OrderUnit, LineTotal)

(For separating partial dependency and functional dependency Receipt table is created.)

### Third Normalization Form (3NF)

Transitive dependency is checked and separated.

Order (SN, Date)

SN → Date

OrderDetails (OrderNumber, OrderAmount, Time, DeliveryPoint, Status, SN\*)

OrderNumber → Time →

OrderNumber → OrderAmount →

OrderNumber → DeliveryPoint →

OrderNumber → Status →

OrderNumber → SN →

The OrderDetails table does not consist of a transitive dependence because non-key attribute does not give another non-key which indicates that the table is already in 3NF.

Dish (DishCode, DishName, DishRate, Restaurant)

DishCode → DishName

DishCode → DishRate

DishCode → Restaurant

The Dish table does not consist of a transitive dependence because non-key attribute does not give another non-key which indicates that the table is already in 3NF.

Receipt (DishCode\* , OrderNumber\* , OrderUnit, LineTotal)

DishCode\* → OrderUnit →

DishCode\* → LineTotal →

OrderNumber\* → OrderUnit →

OrderNumber\* → LineTotal →

The Receipt table does not consist of a transitive dependence because non-key attribute does not give another non-key which indicates that the table is already in 3NF.

Note: All tables are in 3NF because they does not consist of a transitive dependence.

Final Tables from Figure 2 are:

Order (SN, Date)

OrderDetails (OrderNumber, Time, OrderAmount, DeliveryPoint, Status, SN\*)

Dish (DishCode, DishName, DishRate, Restaurant)

Receipt (DishCode\* , OrderNumber\* , OrderUnit, LineTotal)

## 4. Assumptions and Integration

### 4.1 Assumptions Made.

- Customer can visit to one or different restaurant and each restaurant can have multiple dishes.
- Customer can order multiple dishes from restaurant.
- Order dishes must belong to one customer.
- Address can contain one or many customers, but each customer should have only one address.
- Each dish can have one loyalty point.
- One or many loyalty points can be got from number of dishes.

### 4.2 Integration

A new entity Address is created that stores the customer delivery address details.

Address (AddressCode, City, Longitude, Latitude, DeliveryPoint)

A new entity LoyaltyPoint is created that stores loyalty point for dish.

LoyaltyPoint (LoyaltyCode, Day, Point)

A new entity Customer is created that stores customer details and linked with address table.

Customer (CustomerId, Name, Phone, AddressCode\*)

The entities FoodDishes from figure 1 normalization and Dish from figure 2 normalization are considered as same entity and the attributes of the both the entities are merged in one Food entity on the final normalization and it is linked with loyaltypoint table.

Food (DishCode, DishName, LocalName, DishRate, LoyaltyId\*)

The name of entities RestaurantDetails from figure 1 normalization is changed as Restaurant and RestaurantAddress column is added.

Restaurant (RestaurantCode, ResutrantName, ResturantAddress)

The name of entities order from figure 2 normalization is changed as Bill.

Bill (SN, Date)

The name of entities OrderDetails from figure 2 normalization is changed as OrderInfo and it is linked with Customer Table.

OrderInfo (OrderNumber, OrderAmount, Time, Status, SN\*, CustomerId\*)

The entities Receipt from figure 2 normalization is linked with Restaurant Table.

Receipt (DishCode\*, OrderNumber\*, OrderUnit, LineTotal, RestaurantCode\*)

#### 4.3 Final Entities

Food (DishCode, DishName, LocalName, DishRate, LoyaltyId\*)

Restaurant (RestaurantCode, ResutrantName, ResturantAddress)

ResturantFood (RestaurantCode\*, DishCode\*)

Bill (SN, Date)

OrderInfo (OrderNumber, OrderAmount, Time, Status, SN\*, CustomerId\*)

Receipt (DishCode\*, OrderNumber\*, OrderUnit, LineTotal, RestaurantCode\*)

Customer (CustomerId, Name, Phone, AddressCode\*)

LoyaltyPoint (LoyaltyCode, Day, Point)

Address (AddressCode, City, Longitude, Latitude, DeliveryPoint)

## 5. Overall Entities

### 1. Entity Name: Food

#### Attributes Name:

DishCode - Primary Key

DishName

LocalName

DishRate

LoyaltyId - Foreign Key

### 2. Entity Name: Restaurant

#### Attributes Name:

RestaurantCode - Primary Key

ResutrantName

RestaurantAddress

### 3. Entity Name: RestaurantFood

#### Attributes Name:

RestaurantCode – Primary Key and Foreign Key

DishCode – Primary Key and Foreign Key

### 4. Entity Name: Bill

#### Attributes Name:

SN – Primary Key

Date

**5. Entity Name:** OrderInfo

**Attributes Name:**

OrderNumber – Primary Key

Time

OrderAmount

Status

SN- Foreign Key

CustomerId - Foreign Key

**6. Entity Name:** Receipt

**Attributes Name:**

DishCode -Primary Key and Foreign Key

OrderNumber -Primary Key and Foreign Key

OrderUnit

LineTotal

RestaurantCode – Foreign Key

**7. Entity Name:** Customer

**Attributes Name:**

CustomerId – Primary Key

Name

Phone

AddressCode – Foreign Key

**8. Entity Name:** LoyaltyPoint

**Attributes Name:**

LoyaltyCode – Primary Key

Day

Point

**9. Entity Name:** Address

**Attributes Name:**

AddressCode – Primary Key

City

Longitude

Latitude

DeliveryPoint

## 6. ER-Model.

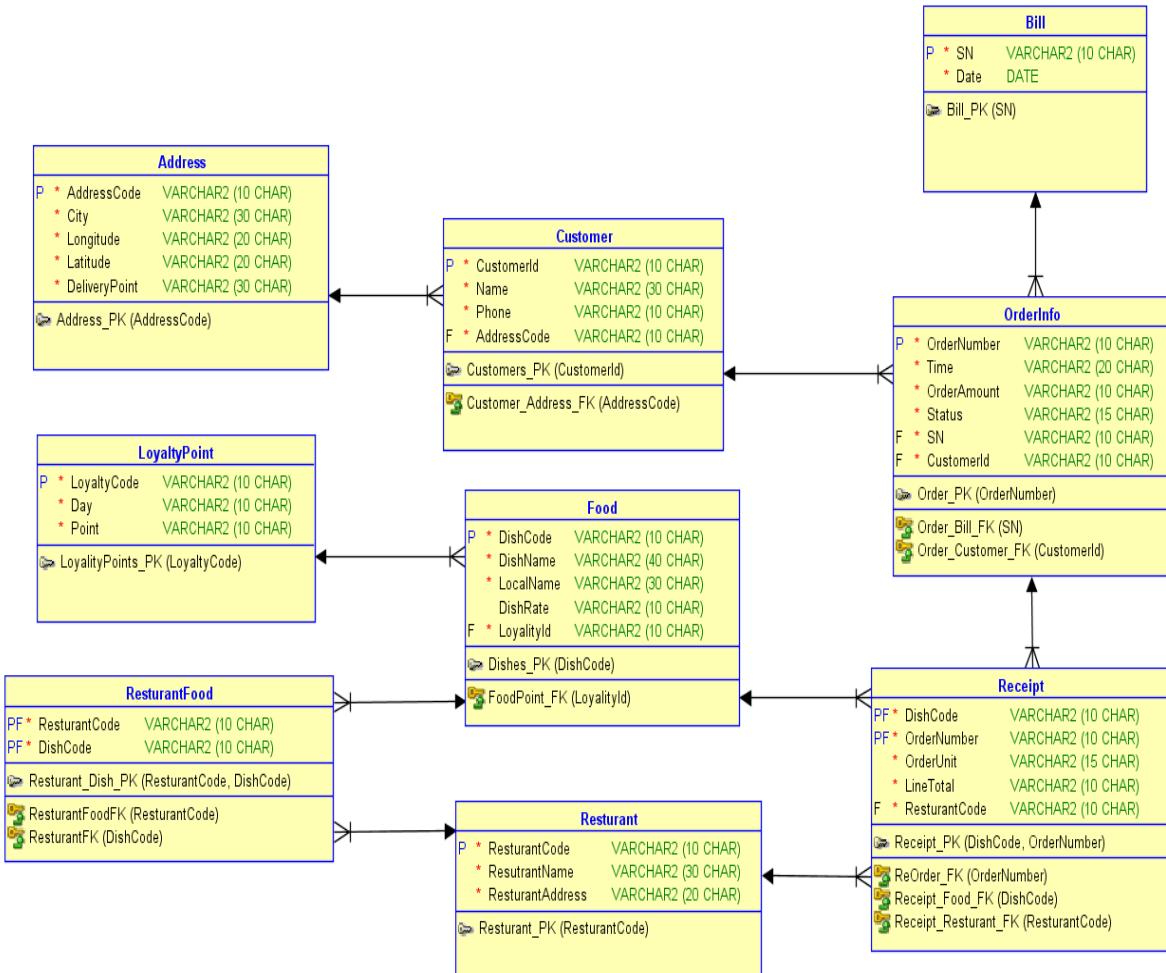


Figure 8: Final ERD.

## 7. Script

 DDL Preview

```

1  CREATE TABLE address (
2      addresscode  VARCHAR2(10 CHAR) NOT NULL,
3      city         VARCHAR2(30 CHAR) NOT NULL,
4      longitude    VARCHAR2(20 CHAR) NOT NULL,
5      latitude     VARCHAR2(20 CHAR) NOT NULL,
6      deliverypoint VARCHAR2(30 CHAR) NOT NULL
7  );
8
9  ALTER TABLE address ADD CONSTRAINT address_pk PRIMARY KEY ( addresscode );
10
11 CREATE TABLE bill (
12     sn          VARCHAR2(10 CHAR) NOT NULL,
13     "Date"      DATE NOT NULL
14 );
15
16 ALTER TABLE bill ADD CONSTRAINT bill_pk PRIMARY KEY ( sn );
17
18 CREATE TABLE customer (
19     customerid  VARCHAR2(10 CHAR) NOT NULL,
20     name        VARCHAR2(30 CHAR) NOT NULL,
21     phone       VARCHAR2(10 CHAR) NOT NULL,
22     addresscode VARCHAR2(10 CHAR) NOT NULL
23 );
24
25 ALTER TABLE customer ADD CONSTRAINT customers_pk PRIMARY KEY ( customerid );
26
27 CREATE TABLE food (
28     dishcode    VARCHAR2(10 CHAR) NOT NULL,
29     dishname   VARCHAR2(40 CHAR) NOT NULL,
30     localname  VARCHAR2(30 CHAR) NOT NULL,
31     dishrate   VARCHAR2(10 CHAR),
32     loyaltyid  VARCHAR2(10 CHAR) NOT NULL
33 );
34
35 ALTER TABLE food ADD CONSTRAINT dishes_pk PRIMARY KEY ( dishcode );
36
37 CREATE TABLE loyaltypoint (
38     loyaltycode VARCHAR2(10 CHAR) NOT NULL,
39     day         VARCHAR2(10 CHAR) NOT NULL,
40     point       VARCHAR2(10 CHAR) NOT NULL
41 );
42
43 ALTER TABLE loyaltypoint ADD CONSTRAINT loyaltypoints_pk PRIMARY KEY ( loyaltycode );
44
45 CREATE TABLE orderinfo (
46     ordernumber  VARCHAR2(10 CHAR) NOT NULL,
47     time        VARCHAR2(20 CHAR) NOT NULL,
48     orderamount VARCHAR2(10 CHAR) NOT NULL,
49     status       VARCHAR2(15 CHAR) NOT NULL,
50     sn          VARCHAR2(10 CHAR) NOT NULL,
51     customerid  VARCHAR2(10 CHAR) NOT NULL
52 );
53

```

[Close](#)

DDL Preview

```

50      sn          VARCHAR2(10 CHAR) NOT NULL,
51      customerid  VARCHAR2(10 CHAR) NOT NULL
52  );
53
54  ALTER TABLE orderinfo ADD CONSTRAINT order_pk PRIMARY KEY ( ordernumber );
55
56  CREATE TABLE receipt (
57      dishcode    VARCHAR2(10 CHAR) NOT NULL,
58      ordernumber  VARCHAR2(10 CHAR) NOT NULL,
59      orderunit   VARCHAR2(15 CHAR) NOT NULL,
60      linetotal   VARCHAR2(10 CHAR) NOT NULL,
61      restaurantcode  VARCHAR2(10 CHAR) NOT NULL
62  );
63
64  ALTER TABLE receipt ADD CONSTRAINT receipt_pk PRIMARY KEY ( dishcode,
65                           ordernumber );
66
67  CREATE TABLE restaurant (
68      restaurantcode  VARCHAR2(10 CHAR) NOT NULL,
69      resstruantname  VARCHAR2(30 CHAR) NOT NULL,
70      restaurantaddress  VARCHAR2(20 CHAR) NOT NULL
71  );
72
73  ALTER TABLE restaurant ADD CONSTRAINT restaurant_pk PRIMARY KEY ( restaurantcode );
74
75  CREATE TABLE restaurantfood (
76      restaurantcode  VARCHAR2(10 CHAR) NOT NULL,
77      dishcode        VARCHAR2(10 CHAR) NOT NULL
78  );
79
80  ALTER TABLE restaurantfood ADD CONSTRAINT restaurant_dish_pk PRIMARY KEY ( restaurantcode,
81                           dishcode );
82
83  ALTER TABLE customer
84      ADD CONSTRAINT customer_address_fk FOREIGN KEY ( addresscode )
85          REFERENCES address ( addresscode );
86
87  ALTER TABLE food
88      ADD CONSTRAINT foodpoint_fk FOREIGN KEY ( loyaltyid )
89          REFERENCES loyaltypoint ( loyaltycode );
90
91  ALTER TABLE orderinfo
92      ADD CONSTRAINT order_bill_fk FOREIGN KEY ( sn )
93          REFERENCES bill ( sn );
94
95  ALTER TABLE orderinfo
96      ADD CONSTRAINT order_customer_fk FOREIGN KEY ( customerid )
97          REFERENCES customer ( customerid );
98
99  ALTER TABLE receipt
100     ADD CONSTRAINT receipt_food_fk FOREIGN KEY ( dishcode )
101         REFERENCES food ( dishcode );
102

```

**Close**

```

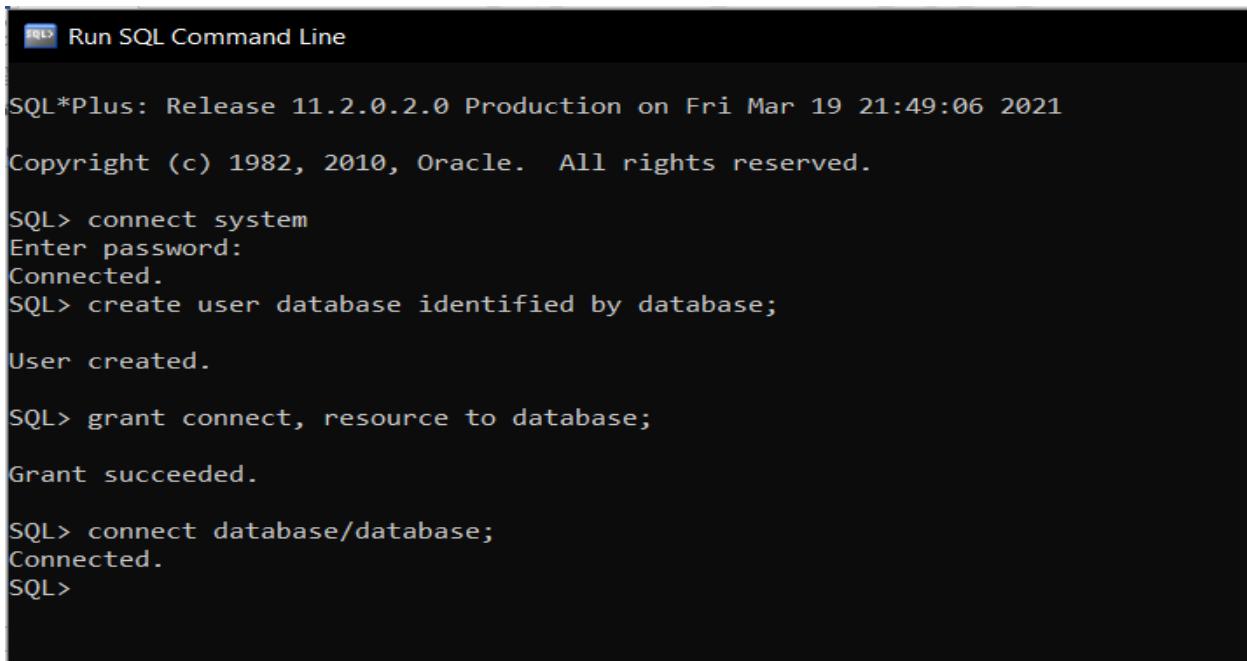
102
103  ALTER TABLE receipt
104      ADD CONSTRAINT receipt_restaurant_fk FOREIGN KEY ( restaurantcode )
105          REFERENCES restaurant ( restaurantcode );
106
107  ALTER TABLE receipt
108      ADD CONSTRAINT reorder_fk FOREIGN KEY ( ordernumber )
109          REFERENCES orderinfo ( ordernumber );
110
111  ALTER TABLE restaurantfood
112      ADD CONSTRAINT restaurantfk FOREIGN KEY ( dishcode )
113          REFERENCES food ( dishcode );
114
115  ALTER TABLE restaurantfood
116      ADD CONSTRAINT restaurantfoodfk FOREIGN KEY ( restaurantcode )
117          REFERENCES restaurant ( restaurantcode );

```

**Close**

Figure 9: Script Screenshot.

## 8. Script Execution:



```
SQL*Plus: Release 11.2.0.2.0 Production on Fri Mar 19 21:49:06 2021
Copyright (c) 1982, 2010, Oracle. All rights reserved.

SQL> connect system
Enter password:
Connected.
SQL> create user database identified by database;
User created.

SQL> grant connect, resource to database;
Grant succeeded.

SQL> connect database/database;
Connected.
SQL>
```

Figure 10: Creation and connection of new user database.

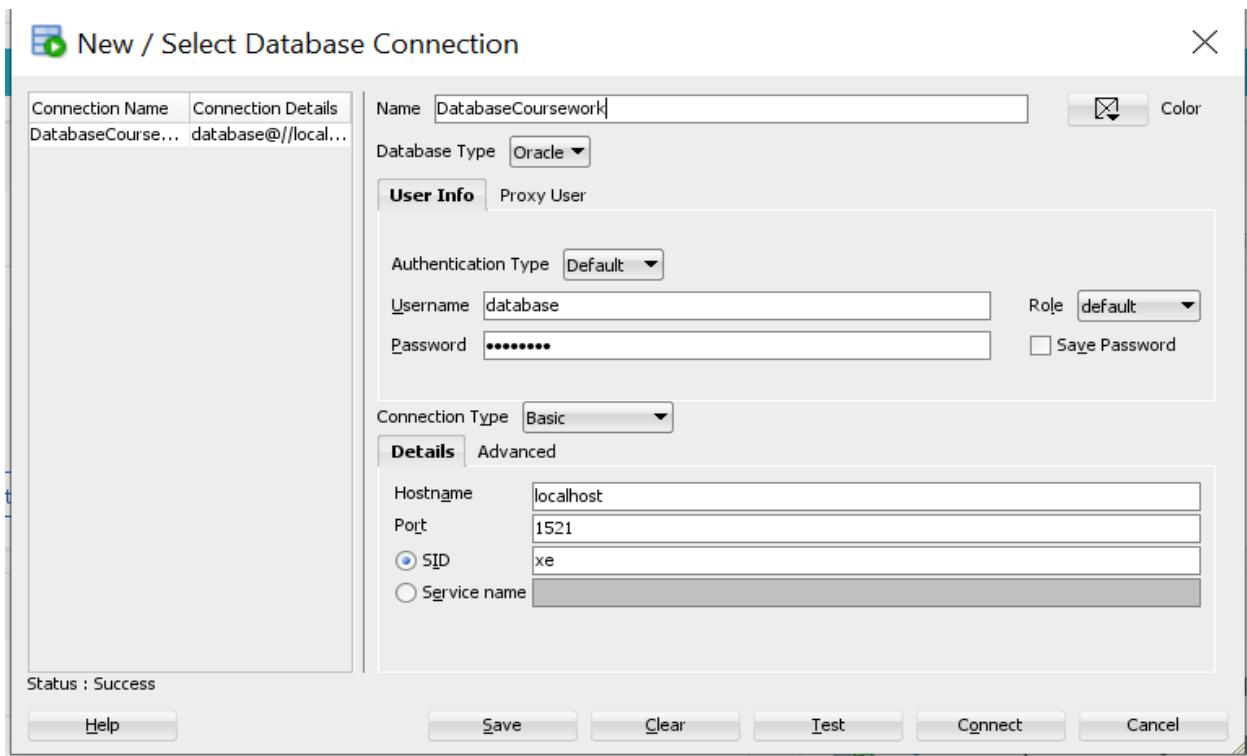


Figure 11: Testing database connection before connecting SQL developer to sqlplus.

## 1. Address Table Creation.

The screenshot shows the Oracle SQL Developer interface. The 'Worksheet' tab is active, displaying the SQL code for creating the 'address' table:

```
CREATE TABLE address (
    addresscode  VARCHAR2(10 CHAR) NOT NULL,
    city          VARCHAR2(30 CHAR) NOT NULL,
    longitude     VARCHAR2(20 CHAR) NOT NULL,
    latitude      VARCHAR2(20 CHAR) NOT NULL,
    deliverypoint VARCHAR2(30 CHAR) NOT NULL
);

ALTER TABLE address ADD CONSTRAINT address_pk PRIMARY KEY ( addresscode );
```

The 'Script Output' window at the bottom shows the results of the execution:

```
Table ADDRESS created.

Table ADDRESS altered.
```

Figure 12:Address Table Creation.

## 2. Customer Table Creation.

The screenshot shows the Oracle SQL Developer interface. The 'Worksheet' tab is active, displaying the following SQL code:

```
CREATE TABLE customer (
    customerid  VARCHAR2(10 CHAR) NOT NULL,
    name        VARCHAR2(30 CHAR) NOT NULL,
    phone       VARCHAR2(10 CHAR) NOT NULL,
    addresscode VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE customer ADD CONSTRAINT customers_pk PRIMARY KEY ( customerid );

ALTER TABLE customer
    ADD CONSTRAINT customer_address_fk FOREIGN KEY ( addresscode )
        REFERENCES address ( addresscode );
```

The 'Script Output' tab at the bottom shows the results of the execution:

```
Table CUSTOMER created.

Table CUSTOMER altered.

Table CUSTOMER altered.
```

Figure 13:Customer Table Creation.

### 3. Restaurant Table Creation

The screenshot shows the Oracle SQL Developer interface. The 'Worksheet' tab is active, displaying the following SQL code:

```
CREATE TABLE restaurant (
    resturantcode  VARCHAR2(10 CHAR) NOT NULL,
    resturantname  VARCHAR2(30 CHAR) NOT NULL,
    resturantaddress VARCHAR2(20 CHAR) NOT NULL
);

ALTER TABLE restaurant ADD CONSTRAINT resturant_pk PRIMARY KEY ( resturantcode );
```

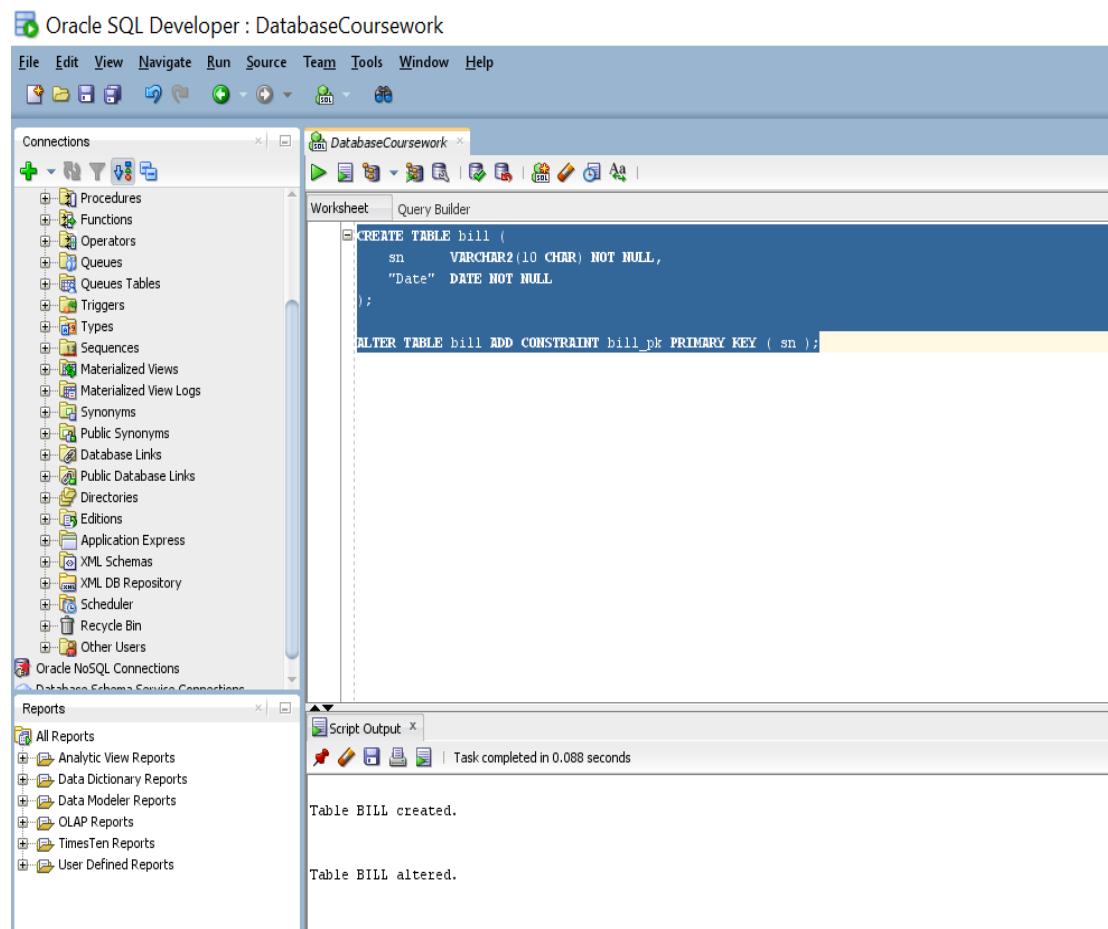
The 'Script Output' window at the bottom shows the results of the execution:

```
Table RESTURANT created.

Table RESTURANT altered.
```

Figure 14: Restaurant Table Creation.

#### 4. Bill Table Creation.



The screenshot shows the Oracle SQL Developer interface. The 'Worksheet' tab is active, displaying the following SQL code:

```
CREATE TABLE bill (
    sn      VARCHAR2(10 CHAR) NOT NULL,
    "Date"  DATE NOT NULL
);

ALTER TABLE bill ADD CONSTRAINT bill_pk PRIMARY KEY ( sn );
```

The 'Script Output' window at the bottom shows the results of the execution:

```
Table BILL created.

Table BILL altered.
```

The 'Script Output' window also indicates the task completed in 0.088 seconds.

Figure 15: Bill Table Creation.

## 5. LoyaltyPoint Table Creation.

The screenshot shows the Oracle SQL Developer interface. The 'Connections' sidebar on the left lists various database objects like Procedures, Functions, Operators, etc. The 'Worksheet' tab in the center contains the SQL code for creating the 'loyaltycode' table and adding a primary key constraint:

```
CREATE TABLE loyaltycode (
    loyaltycode VARCHAR2(10 CHAR) NOT NULL,
    day         VARCHAR2(10 CHAR) NOT NULL,
    point      VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE loyaltycode ADD CONSTRAINT loyaltycode_pk PRIMARY KEY ( loyaltycode );
```

The 'Script Output' tab at the bottom shows the results of the execution:

```
Table LOYALTYPOINT created.

Table LOYALTYPOINT altered.
```

Figure 16: LoyaltyPoint Table Creation.

## 6. Food Table Creation.

The screenshot shows the Oracle SQL Developer interface. The left sidebar contains a tree view of database objects under 'DatabaseCoursework'. The main area is a 'Worksheet' tab showing the following SQL code:

```
CREATE TABLE food (
    dishcode  VARCHAR2(10 CHAR) NOT NULL,
    dishname  VARCHAR2(40 CHAR) NOT NULL,
    localname VARCHAR2(30 CHAR) NOT NULL,
    dishrate   VARCHAR2(10 CHAR),
    loyaltyid VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE food ADD CONSTRAINT dishes_pk PRIMARY KEY ( dishcode );

ALTER TABLE food
ADD CONSTRAINT foodpoint_fk FOREIGN KEY ( loyaltyid )
    REFERENCES loyaltypoint ( loyaltycode );
```

The 'Script Output' tab at the bottom shows the results of the execution:

```
Table FOOD created.

Table FOOD altered.

Table FOOD altered.
```

Figure 17: Food Table Creation.

## 7. RestaurantFood Table Creation.

The screenshot shows the Oracle SQL Developer interface. The top menu bar includes File, Edit, View, Navigate, Run, Source, Team, Tools, Window, and Help. The left sidebar contains sections for Connections, Reports, and Oracle NoSQL Connections. The main workspace is titled "DatabaseCoursework" and contains a "Worksheet" tab with the following SQL code:

```
CREATE TABLE restaurantfood (
    resturantcode VARCHAR2(10 CHAR) NOT NULL,
    dishcode      VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE restaurantfood ADD CONSTRAINT resturant_pk PRIMARY KEY ( resturantcode,
                                                               dishcode );

ALTER TABLE restaurantfood
    ADD CONSTRAINT resturantfk FOREIGN KEY ( dishcode )
        REFERENCES food ( dishcode );

ALTER TABLE restaurantfood
    ADD CONSTRAINT resturantfood_fk FOREIGN KEY ( resturantcode )
        REFERENCES restaurant ( resturantcode );
```

The "Script Output" tab at the bottom shows the results of the execution:

```
Table RESTURANTFOOD created.

Table RESTURANTFOOD altered.

Table RESTURANTFOOD altered.

Table RESTURANTFOOD altered.
```

Figure 18: Customer Table Creation.

## 8. OrderInfo Table Creation.

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a connection to 'DatabaseCoursework' containing tables like ADDRESS, BILL, CUSTOMER, FOOD, LOALTYPOINT, Order, RESTAURANT, and RESTAURANTFOOD. Below this are sections for Views, Indexes, Packages, Procedures, Functions, Operators, Queues, Queues Tables, Triggers, Types, Sequences, and Materialized Views. The bottom-left sidebar shows 'Reports' categories such as All Reports, Analytic View Reports, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, TimesTen Reports, and User Defined Reports. The main workspace contains two tabs: 'DatabaseCoursework.sql' and 'DatabaseCoursework.sql'. The 'DatabaseCoursework.sql' tab is active and displays the following SQL script:

```
CREATE TABLE orderinfo (
    ordernumber VARCHAR2(10 CHAR) NOT NULL,
    time        VARCHAR2(20 CHAR) NOT NULL,
    orderamount VARCHAR2(10 CHAR) NOT NULL,
    status      VARCHAR2(15 CHAR) NOT NULL,
    sn          VARCHAR2(10 CHAR) NOT NULL,
    customerid VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE orderinfo ADD CONSTRAINT order_pk PRIMARY KEY ( ordernumber );

ALTER TABLE orderinfo
ADD CONSTRAINT order_bill_fk FOREIGN KEY ( sn )
    REFERENCES bill ( sn );

ALTER TABLE orderinfo
ADD CONSTRAINT order_customer_fk FOREIGN KEY ( customerid )
    REFERENCES customer ( customerid );
```

The 'Script Output' window at the bottom right shows the results of the execution:

```
Table ORDERINFO created.

Table ORDERINFO altered.

Table ORDERINFO altered.

Table ORDERINFO altered.
```

Figure 19: OrderInfo Table Creation.

## 9. Table Receipt Creation.

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes 'DatabaseCoursework' under 'Oracle Connections', containing tables like ADDRESS, BILL, CUSTOMER, FOOD, LOYALTYPOINT, ORDERINFO, RESTAURANT, and RESTAURANTFOOD. Below this is a 'Reports' section with various report types. The main workspace has two tabs: 'DatabaseCoursework.sql' and 'DatabaseCoursework.sql'. The 'DatabaseCoursework.sql' tab contains the following SQL code:

```
CREATE TABLE receipt (
    dishcode      VARCHAR2(10 CHAR) NOT NULL,
    ordernumber   VARCHAR2(10 CHAR) NOT NULL,
    orderunit     VARCHAR2(15 CHAR) NOT NULL,
    linetotal     VARCHAR2(10 CHAR) NOT NULL,
    restaurantcode VARCHAR2(10 CHAR) NOT NULL
);

ALTER TABLE receipt ADD CONSTRAINT receipt_pk PRIMARY KEY ( dishcode,
    ordernumber );

ALTER TABLE receipt
    ADD CONSTRAINT receipt_food_fk FOREIGN KEY ( dishcode )
        REFERENCES food ( dishcode );

ALTER TABLE receipt
    ADD CONSTRAINT receipt_restaurant_fk FOREIGN KEY ( restaurantcode )
        REFERENCES restaurant ( restaurantcode );

ALTER TABLE receipt
```

The 'Script Output' window at the bottom shows the results of the execution:

```
Table RECEIPT created.

Table RECEIPT altered.

Table RECEIPT altered.

Table RECEIPT altered.
```

Figure 20: Customer Table Creation.

## 9. Data Dictionary

### 1. Address Table

*Table 1: Data Dictionary of Address Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
AddressCode	VARCHAR	10	Primary Key		Unique key to identify Address	Add1
City	VARCHAR	30	Not Null		Name of the City Address	Dharan
Longitude	VARCHAR	20	Not Null		Longitude of address	56
Latitude	VARCHAR	20	Not Null		Latitude of address	
DeliveryPoint	VARCHAR	30	Not Null		Delivery Address of customer	Shyam Chowk

### 2. LoyaltyPoint Table

*Table 2: Data Dictionary of LoyaltyPoint Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
LoyaltyCode	VARCHAR	10	Primary Key		Unique key to identify Loyalty	L1
Day	VARCHAR	10	Not Null		Number of Day	1
Point	VARCHAR	10	Not Null		Points of loyalty	10

### 3. Bill Table

*Table 3: Data Dictionary of Bill Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
SN	VARCHAR	10	Primary Key		Unique key to identify bill	B1
Date	DATE		Not Null		Bill issued date	03/03/2021

### 4. OrderInfo Table

*Table 4: Data Dictionary of OrderInfo Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
OrderNumber	VARCHAR	10	Primary Key		Unique key to identify order	odd1
Time	VARCHAR	20	Not Null		Order Time	4:30
OrderAmount	VARCHAR	20	Not Null		Total Order Amount	6000
Status	VARCHAR	15	Not Null		Status of delivery	On time
SN	VARCHAR	10	Foreign Key	Bill	Unique key to identify bill	B1
CustomerId	VARCHAR	10	Foreign Key	Customer	Unique key to identify customer	C1

## 5. Receipt Table

*Table 5: Data Dictionary of Receipt Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
DishCode	VARCHAR	10	Primary Key Foreign Key	Food	Unique key to identify food	F1
OrderNumber	VARCHAR	10	Primary Key Foreign key	OrderInfo	Unique key to identify order	O1
OrderUnit	VARCHAR	20	Not Null		Unit of order	5 plates
LineTotal	VARCHAR	20	Not Null		Price of order	56788
RestaurantCode	VARCHAR	30	Foreign Key		Unique key to identify restaurant	R11

## 6. Food Table

*Table 6: Data Dictionary of Food Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
DishCode	VARCHAR	10	Primary Key		Unique ID for Food	f1
DishName	VARCHAR	40	Not Null		Name of food	MOMO
LocalName	VARCHAR	30	Not Null		Local name of food	MOMO
DishRate	VARCHAR	10	Not Null		Price of food	100
LoyaltyId	VARCHAR	10	Foreign Key	LoyaltyPoint	Unique key to identify loyaltypoint	L1

## 7. Customer Table.

*Table 7: Data Dictionary of Customer Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
CustomerId	VARCHAR	10	Primary Key		Unique ID for Customer	c1
Name	VARCHAR	30	Not Null			Girija Tamang
Phone	VARCHAR	10	Not Null			9856123456
AddressCode	VARCHAR	10	Foreign Key	Address		A1

## 8. Restaurant Table.

*Table 8: Data Dictionary of Restaurant Table.*

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
RestaurantCode	VARCHAR	10	Primary Key		Unique key to identify restaurant	res1
ResutrantName	VARCHAR	30	Not Null		Name of restaurant	Pahuna Cafe
RestaurantAddre ss	VARCHAR	20	Not Null		Address of Restaurant	Itahari

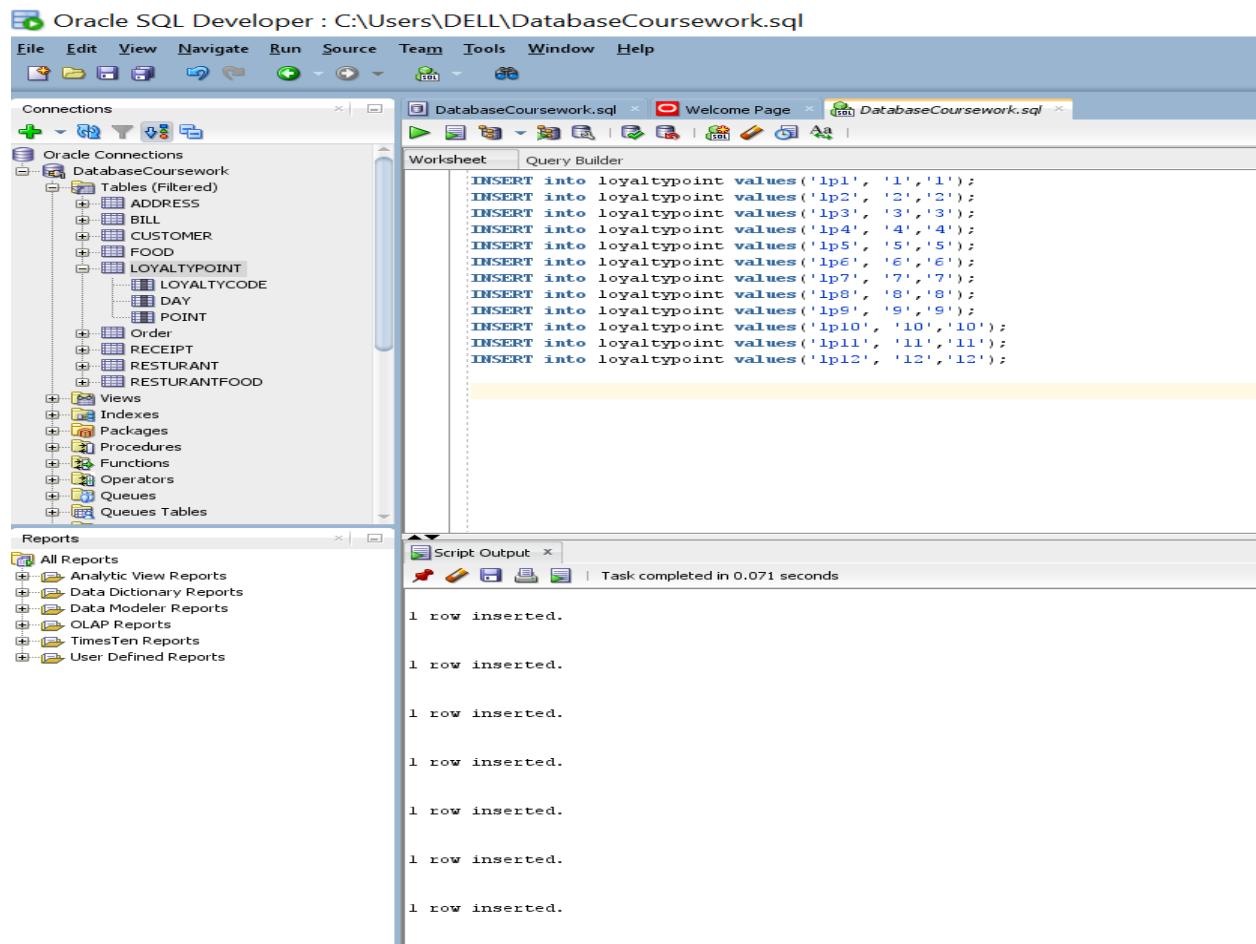
## 9. RestaurantFood Table

Table 9: Data Dictionary of RestaurantFood Table.

Column Name	Data Type	Size	Constraint	Referenced Table	Description	Example
RestaurantCode	VARCHAR	10	Primary Key	Restaurant	Unique key to identify restaurant	R11
DishCode	VARCHAR	10	Primary Key	Food	Unique key to identify food	F1

## 10. Insert Statements:

### 1. LoyaltyPoint Table.



The screenshot shows the Oracle SQL Developer interface. The left pane displays the database schema with the LoyaltyPoint table selected. The central workspace contains an SQL script for inserting data into the LoyaltyPoint table. The bottom pane shows the execution results, indicating successful insertion of 12 rows.

```

INSERT into loyaltypoint values('lp1', '1','1');
INSERT into loyaltypoint values('lp2', '2','2');
INSERT into loyaltypoint values('lp3', '3','3');
INSERT into loyaltypoint values('lp4', '4','4');
INSERT into loyaltypoint values('lp5', '5','5');
INSERT into loyaltypoint values('lp6', '6','6');
INSERT into loyaltypoint values('lp7', '7','7');
INSERT into loyaltypoint values('lp8', '8','8');
INSERT into loyaltypoint values('lp9', '9','9');
INSERT into loyaltypoint values('lp10', '10','10');
INSERT into loyaltypoint values('lp11', '11','11');
INSERT into loyaltypoint values('lp12', '12','12');

```

Script Output:

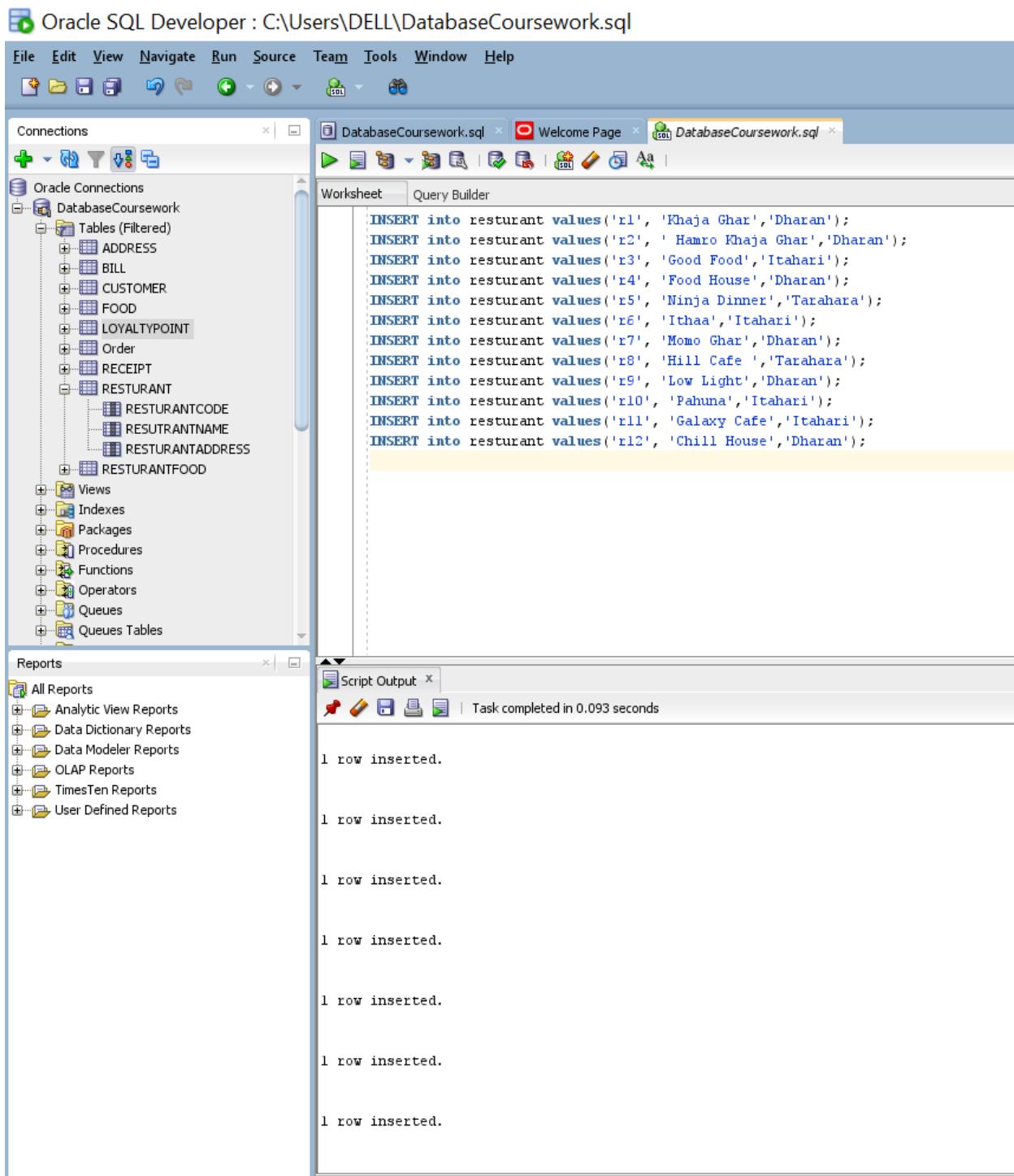
```

1 row inserted.

```

Figure 21: LoyaltyPoint table's value insert statement.

## 2.Restaurant Table.



The screenshot shows the Oracle SQL Developer interface. The Worksheet tab contains the following SQL code:

```

INSERT into restaurant values('r1', 'Khaja Ghar','Dharan');
INSERT into restaurant values('r2', ' Hamro Khaja Ghar','Dharan');
INSERT into restaurant values('r3', 'Good Food','Itahari');
INSERT into restaurant values('r4', 'Food House','Dharan');
INSERT into restaurant values('r5', 'Ninja Dinner','Tarahara');
INSERT into restaurant values('r6', 'Ithaa','Itahari');
INSERT into restaurant values('r7', 'Momo Ghar','Dharan');
INSERT into restaurant values('r8', 'Hill Cafe ','Tarahara');
INSERT into restaurant values('r9', 'Low Light','Dharan');
INSERT into restaurant values('r10', 'Pahuna','Itahari');
INSERT into restaurant values('r11', 'Galaxy Cafe','Itahari');
INSERT into restaurant values('r12', 'Chill House','Dharan');

```

The Script Output window below shows the results of the execution:

```

1 row inserted.

```

Figure 22: Restaurant table's value insert statement.

### 3. Food Table.

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the database structure under 'DatabaseCoursework' connection, including tables like ADDRESS, BILL, CUSTOMER, FOOD, LOYALTYPOINT, Order, RECEIPT, RESTAURANT, and RESTAURANTFOOD. The central workspace shows a 'Worksheet' tab with a query builder containing the following SQL code:

```

INSERT into food values('f1', 'Chiken Momo','Momo', '100', 'lp2');
INSERT into food values('f2', 'Noodles','chaumin', '50', 'lp1');
INSERT into food values('f3', 'Burger','Berg', '100', 'lp3');
INSERT into food values('f4', 'Pizza','roti', '100', 'lp4');
INSERT into food values('f5', 'Samosa','Aalu', '50', 'lp5');
INSERT into food values('f6', 'Mixed Chatamari ','Nepali Pizza', '100', 'lp6');
INSERT into food values('f7', 'Kati Roll','Roll', '50', 'lp7');
INSERT into food values('f8', 'Buff Momo','Buff Momo', '90', 'lp8');
INSERT into food values('f9', 'Salad','Salad', '80', 'lp9');
INSERT into food values('f10', 'Motton Briyani','Briyani', '200', 'lp10');
INSERT into food values('f11', 'Fried Rice','Bhuti Bhati', '100', 'lp11');
INSERT into food values('f12', 'Chicken Tikka','Tikka', '150', 'lp12');
INSERT into food values('f13', 'Chole bhature','bhature', '70', 'lp12');
INSERT into food values('f14', 'Kadai paneer','Kadai', '200', 'lp9');
INSERT into food values('f15', 'Jalebi','Cherri', '20', 'lp8');
INSERT into food values('f16', 'Laddu','Laddu', '30', 'lp2');

```

The 'Script Output' tab at the bottom shows the results of the execution:

```

1 row inserted.

```

Figure 23: Food table's value insert statement.

#### 4.Bill Table.

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the database schema with the BILL table selected. The central workspace contains a query builder window with the following SQL code:

```

INSERT into bill values('123', Date'2021-1-4');
INSERT into bill values('124', Date'2021-1-6');
INSERT into bill values('125', Date'2021-1-8');
INSERT into bill values('126', Date'2021-1-10');
INSERT into bill values('127', Date'2021-1-12');
INSERT into bill values('128', Date'2021-1-14');
INSERT into bill values('129', Date'2021-1-16');
INSERT into bill values('130', Date'2021-1-18');
INSERT into bill values('131', Date'2021-1-20');
INSERT into bill values('132', Date'2021-1-22');
INSERT into bill values('133', Date'2021-1-24');
INSERT into bill values('135', Date'2021-1-26');
INSERT into bill values('134', Date'2021-1-28');

```

The bottom right pane shows the script output with ten rows of text indicating successful insertions:

```

1 row inserted.

```

Figure 24: Bill table's value insert statement.

## 5. RestaurantFood Table.

The screenshot shows the Oracle SQL Developer interface. The Worksheet tab displays the following SQL code:

```

INSERT into restaurantfood values('r1', 'f1');
INSERT into restaurantfood values('r1', 'f2');
INSERT into restaurantfood values('r2', 'f1');
INSERT into restaurantfood values('r3', 'f3');
INSERT into restaurantfood values('r4', 'f4');
INSERT into restaurantfood values('r5', 'f5');
INSERT into restaurantfood values('r6', 'f13');
INSERT into restaurantfood values('r7', 'f14');
INSERT into restaurantfood values('r8', 'f9');
INSERT into restaurantfood values('r9', 'f10');
INSERT into restaurantfood values('r10', 'f11');
INSERT into restaurantfood values('r11', 'f12');
INSERT into restaurantfood values('r12', 'f3');
INSERT into restaurantfood values('r7', 'f4');

```

The Script Output tab shows the results of the execution:

```

1 row inserted.

```

Figure 25: RestaurantFood table's value insert statement.

## 6. OrderInfo Table.

The screenshot shows the Oracle SQL Developer interface. On the left, the Connections pane displays a single connection named "DatabaseCoursework". Under the "Tables (Filtered)" section, the "ORDERINFO" table is selected, showing its columns: ORDERNUMBER, TIME, ORDERAMOUNT, STATUS, SN, CUSTOMERID, RECEIPT, RESTURANT, and RESTURANTFOOD. The central area is the "SQL Worksheet" tab, which contains the following SQL code:

```

INSERT into orderinfo values('o1','3:20 ','400', 'On Time', '123', 'Cus1');
INSERT into orderinfo values('o2','13:20 ', '1400', 'Late', '124', 'Cus2');
INSERT into orderinfo values('o3','4:40 ', '800', 'On Time', '125', 'Cus4');
INSERT into orderinfo values('o4','5:50 ', '450', 'Early', '126', 'Cus5');
INSERT into orderinfo values('o5','6:55 ', '200', 'Early', '127', 'Cus7');
INSERT into orderinfo values('o6','1:20 ', '800', 'On Time', '128', 'Cus3');
INSERT into orderinfo values('o7','23:20 ', '900', 'On Time', '129', 'Cus1');
INSERT into orderinfo values('o8','15:10 ', '1000', 'Late', '133', 'Cus6');
INSERT into orderinfo values('o9','19:30 ', '100', 'On Time', '129', 'Cus5');
INSERT into orderinfo values('o10','16:20 ', '700', 'Late', '130', 'Cus2');
INSERT into orderinfo values('o12','7:50 ', '300', 'Early', '131', 'Cus4');

```

Below the worksheet, the "Script Output" pane shows the results of the execution:

```

1 row inserted.

```

Figure 26: OrderInfo table's value insert statement.

## 7. Receipt Table.

The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes 'DatabaseCoursework' under 'Oracle Connections', and 'Reports' section. The main workspace has three tabs: 'DatabaseCoursework.sql', 'DatabaseCoursework.sql', and 'RECEIPT'. The 'RECEIPT' tab is active, showing a 'Worksheet' tab with the following SQL code:

```

INSERT into receipt values('f1','o1','2 plates', '400', 'r1');
INSERT into receipt values('f2','o2','3 plates', '150', 'r2');
INSERT into receipt values('f3','o3','2', '200', 'r3');
INSERT into receipt values('f4','o4','4', '400', 'r4');
INSERT into receipt values('f5','o5','5 pics', '200', 'r5');
INSERT into receipt values('f6','o6','2 plates', '400', 'r6');
INSERT into receipt values('f7','o7','3 rolls', '150', 'r7');
INSERT into receipt values('f8','o8','8 plates', '800', 'r8');
INSERT into receipt values('f9','o9','5 plates', '500', 'r9');
INSERT into receipt values('f10','o10','4 plates', '900', 'r10');
INSERT into receipt values('f11','o10','2 plates', '400', 'r11');
INSERT into receipt values('f12','o6','3 plates', '1200', 'r12');
INSERT into receipt values('f13','o12','6 plates', '800', 'r5');
INSERT into receipt values('f14','o10','6 plates', '950', 'r9');

```

The 'Script Output' window at the bottom shows the results of the execution:

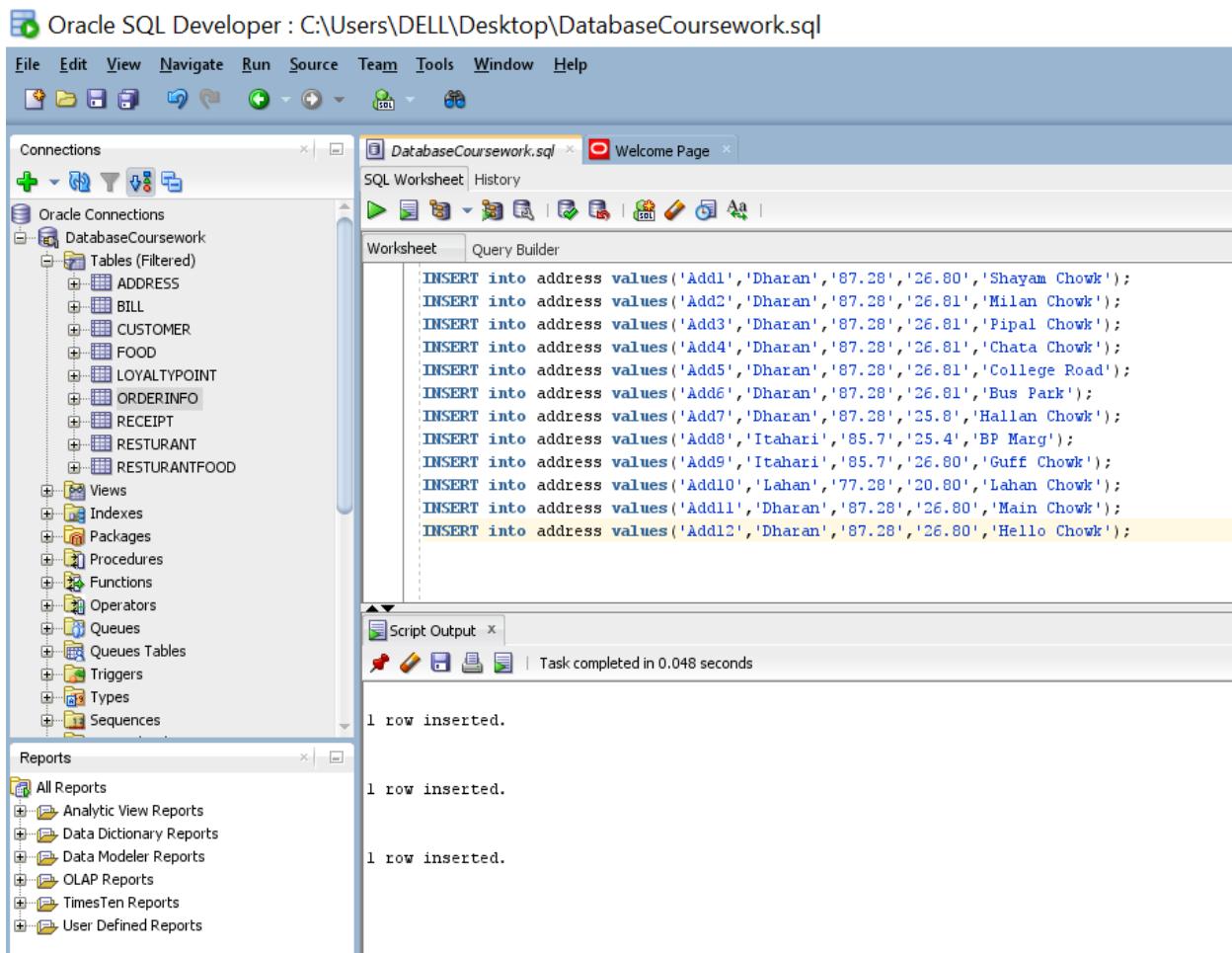
```

1 row inserted.

```

Figure 27: Receipt table's value insert statement.

## 8. Address Table.



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes 'DatabaseCoursework' under 'Tables (Filtered)', containing tables like ADDRESS, BILL, CUSTOMER, FOOD, LOYALTYPOINT, ORDERINFO, RECEIPT, RESTAURANT, and RESTAURANTFOOD. Below this are 'Views', 'Indexes', 'Packages', 'Functions', 'Operators', 'Queues', 'Queues Tables', 'Triggers', 'Types', and 'Sequences'. The 'Reports' section lists 'All Reports' and various report types. The main workspace is titled 'DatabaseCoursework.sql' and contains an 'SQL Worksheet' tab with the following SQL code:

```
INSERT into address values('Add1','Dharan','87.28','26.80','Shayam Chowk');
INSERT into address values('Add2','Dharan','87.28','26.81','Milan Chowk');
INSERT into address values('Add3','Dharan','87.28','26.81','Pipal Chowk');
INSERT into address values('Add4','Dharan','87.28','26.81','Chata Chowk');
INSERT into address values('Add5','Dharan','87.28','26.81','College Road');
INSERT into address values('Add6','Dharan','87.28','26.81','Buz Park');
INSERT into address values('Add7','Dharan','87.28','25.8','Hallan Chowk');
INSERT into address values('Add8','Itahari','85.7','25.4','BP Marg');
INSERT into address values('Add9','Itahari','85.7','26.80','Guff Chowk');
INSERT into address values('Add10','Lahan','77.28','20.80','Lahan Chowk');
INSERT into address values('Add11','Dharan','87.28','26.80','Main Chowk');
INSERT into address values('Add12','Dharan','87.28','26.80','Hello Chowk');
```

The 'Script Output' pane at the bottom shows the results of the execution:

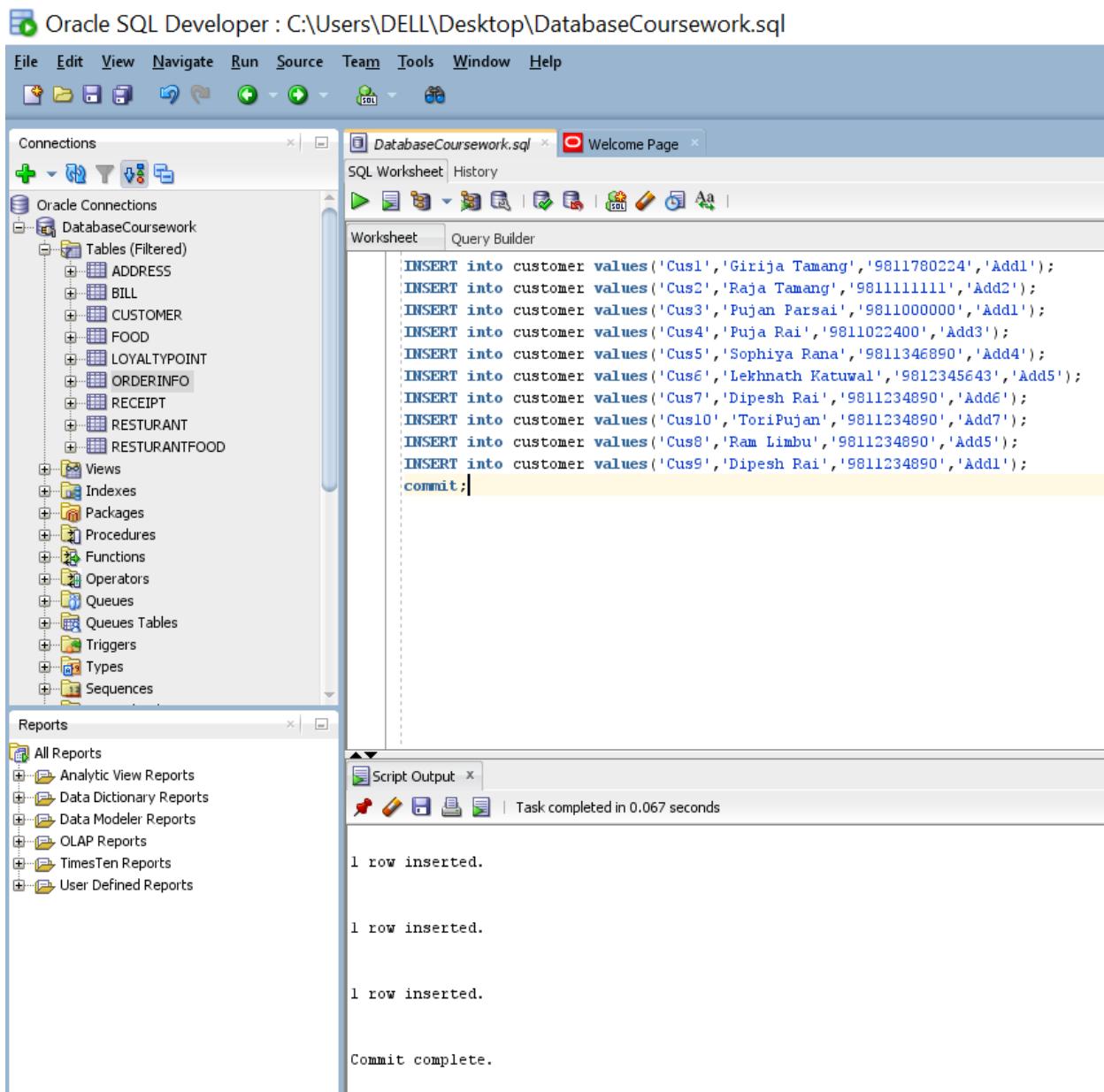
```
1 row inserted.

1 row inserted.

1 row inserted.
```

Figure 28: Receipt table's value insert statement.

## 9. Customer Table.



The screenshot shows the Oracle SQL Developer interface. The left sidebar displays the 'Connections' tree, which includes a connection named 'DatabaseCoursework' under 'Oracle Connections'. This connection is expanded to show tables like ADDRESS, BILL, CUSTOMER, FOOD, LOYALTYPOINT, ORDERINFO, RECEIPT, RESTAURANT, and RESTURANTFOOD; views, indexes, packages, procedures, functions, operators, queues, queues tables, triggers, types, and sequences. Below this is the 'Reports' section with options like All Reports, Analytic View Reports, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, TimesTen Reports, and User Defined Reports.

The main workspace contains an 'SQL Worksheet' tab with the file name 'DatabaseCoursework.sql'. The worksheet area contains the following SQL code:

```

INSERT into customer values('Cus1','Girija Tamang','9811780224','Add1');
INSERT into customer values('Cus2','Raja Tamang','9811111111','Add2');
INSERT into customer values('Cus3','Pujan Parsai','9811000000','Add1');
INSERT into customer values('Cus4','Puja Rai','9811022400','Add3');
INSERT into customer values('Cus5','Sophiya Rana','9811346890','Add4');
INSERT into customer values('Cus6','Lekhnath Katuwal','9812345643','Add5');
INSERT into customer values('Cus7','Dipesh Rai','9811234890','Add6');
INSERT into customer values('Cus10','ToriPujan','9811234890','Add7');
INSERT into customer values('Cus8','Ram Limbu','9811234890','Add5');
INSERT into customer values('Cus9','Dipesh Rai','9811234890','Add1');
commit;

```

Below the worksheet is a 'Script Output' window showing the results of the execution:

```

1 row inserted.

1 row inserted.

1 row inserted.

Commit complete.

```

Figure 29: Customer table's value insert statement.

## 10.1 Commit

The screenshot shows the Oracle SQL Developer interface. The 'Connections' sidebar on the left lists an 'Oracle Connections' node with a single entry: 'DatabaseCoursework'. This entry is expanded to show tables like ADDRESS, BILL, CUSTOMER, FOOD, LOYALTYPOINT, ORDERINFO, RECEIPT, RESTAURANT, and RESTAURANTFOOD, as well as views, indexes, packages, procedures, functions, operators, queues, queues tables, triggers, types, and sequences. Below the connections is a 'Reports' sidebar with options for All Reports, Analytic View Reports, Data Dictionary Reports, Data Modeler Reports, OLAP Reports, TimesTen Reports, and User Defined Reports.

The main workspace contains a 'DatabaseCoursework.sql' tab in the top navigation bar. The 'Worksheet' tab is active, displaying the following SQL script:

```

INSERT into customer values('Cus1','Girija Tamang','9811780224','Add1');
INSERT into customer values('Cus2','Raja Tamang','9811111111','Add2');
INSERT into customer values('Cus3','Pujan Parsai','9811000000','Add1');
INSERT into customer values('Cus4','Puja Rai','9811022400','Add3');
INSERT into customer values('Cus5','Sophiya Rana','9811346890','Add4');
INSERT into customer values('Cus6','Lekhnath Katuwal','9812345643','Add5');
INSERT into customer values('Cus7','Dipesh Rai','9811234890','Add6');
INSERT into customer values('Cus10','ToriPujan','9811234890','Add7');
INSERT into customer values('Cus8','Ram Limbu','9811234890','Add5');
INSERT into customer values('Cus9','Dipesh Rai','9811234890','Add1');
commit;

```

Below the worksheet is a 'Script Output' window showing the results of the execution:

```

Task completed in 0.067 seconds

1 row inserted.

1 row inserted.

1 row inserted.

Commit complete.

```

Figure 30: Commit

## 11. Select Statements.

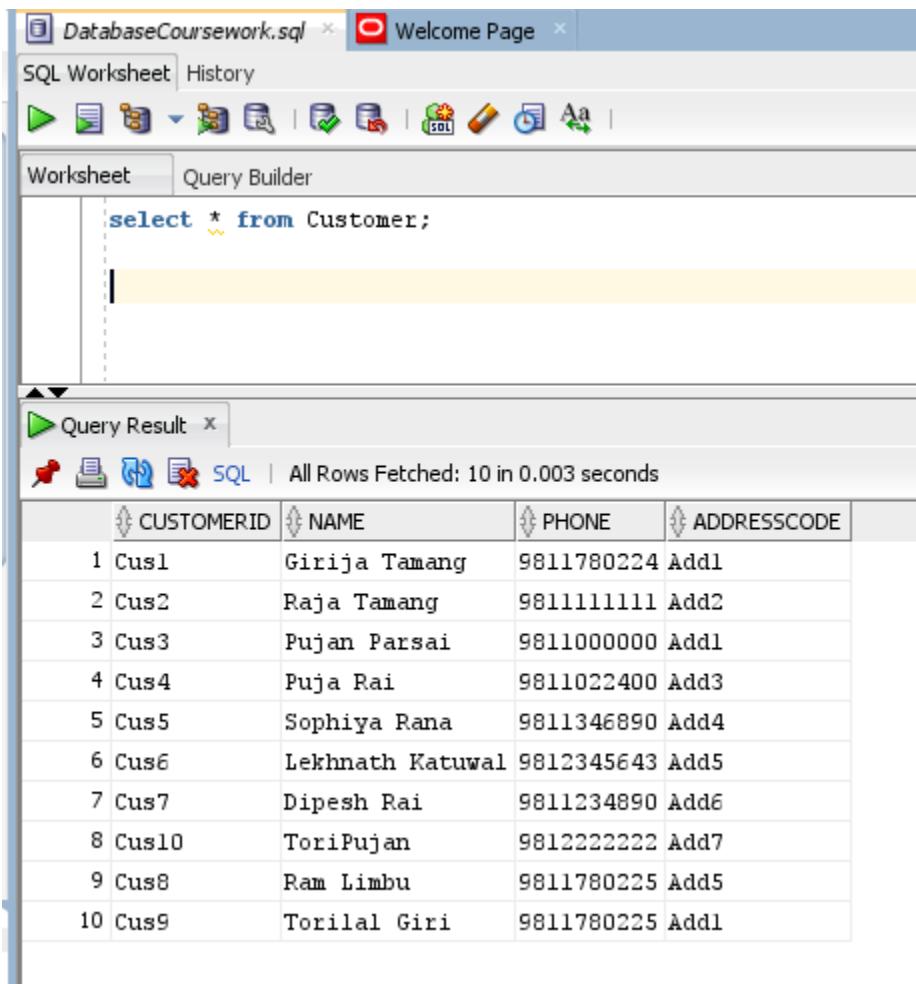
### 1. Address Table.

The screenshot shows the SQL Server Management Studio interface. In the top left, there are tabs for 'DatabaseCoursework.sql' and 'Welcome Page'. Below the tabs is a toolbar with various icons. The main area has two panes: 'Worksheet' and 'Query Builder'. The 'Worksheet' pane contains the SQL query: 'select \* from address;'. The 'Query Result' pane displays the results of the query in a grid format. The grid has columns labeled 'ADDRESSCODE', 'CITY', 'LONGITUDE', 'LATITUDE', and 'DELIVERYPOINT'. The data consists of 11 rows, each representing an address entry. The 'CITY' column shows 'Dharan' for most entries and 'Itahari' for one. The 'DELIVERYPOINT' column contains descriptive names like 'Shyam Chowk', 'Milan Chowk', etc.

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
1	Add1	Dharan	87.28	26.80	Shyam Chowk
2	Add2	Dharan	87.28	26.81	Milan Chowk
3	Add3	Dharan	87.28	26.81	Pipal Chowk
4	Add4	Dharan	87.28	26.81	Chata Chowk
5	Add5	Dharan	87.28	26.81	Collage Road
6	Add6	Dharan	87.28	26.81	Bus Park
7	Add7	Itahari	85.7	25.8	Hallan Chowk
8	Add8	Itahari	85	25.4	BP Marg
9	Add10	Lahan	77.28	20.80	Lahan Chowk
10	Add11	Dharan	87.28	26.80	Main Chowk
11	Add12	Dharan	87.28	26.80	Hello Chowk

Figure 31: Address table's select statement.

## 2. Customer Table.



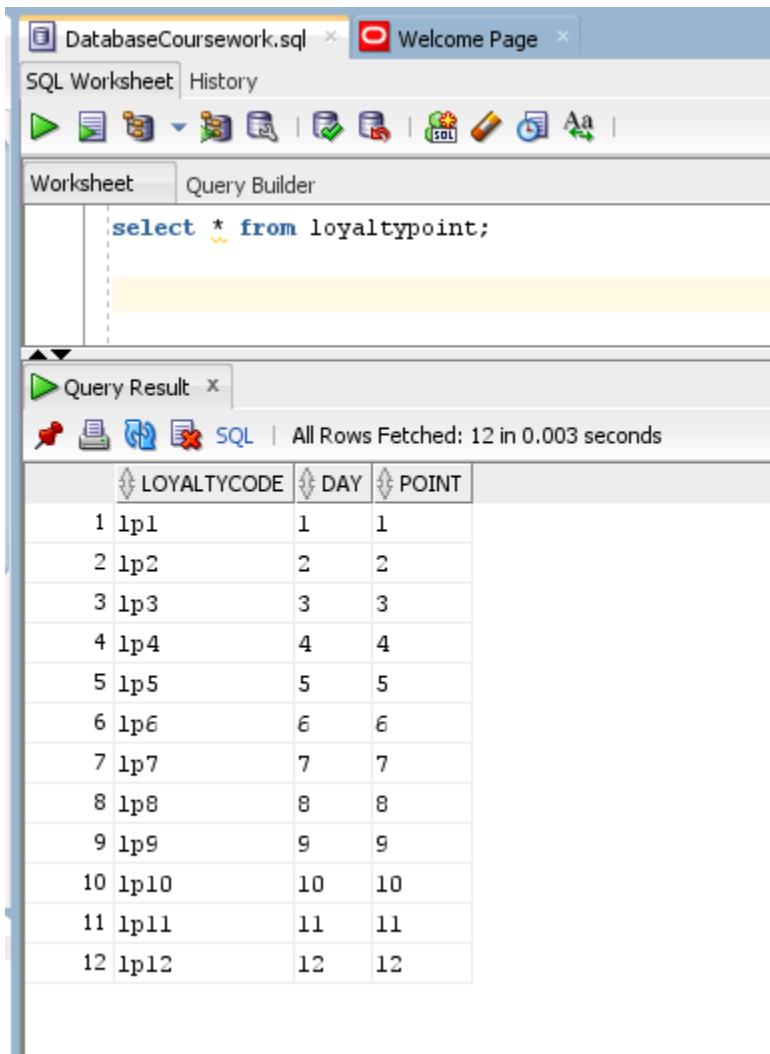
The screenshot shows the SQL Worksheet interface in SQL Server Management Studio. A query is being run against a table named 'Customer'. The results show 10 rows of data with columns: CUSTOMERID, NAME, PHONE, and ADDRESSCODE.

```
select * from Customer;
```

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
1	Cus1	Girija Tamang	9811780224	Add1
2	Cus2	Raja Tamang	9811111111	Add2
3	Cus3	Pujan Parsai	9811000000	Add1
4	Cus4	Puja Rai	9811022400	Add3
5	Cus5	Sophiya Rana	9811346890	Add4
6	Cus6	Lekhnath Katuwal	9812345643	Add5
7	Cus7	Dipesh Rai	9811234890	Add6
8	Cus10	ToriPujan	9812222222	Add7
9	Cus8	Ram Limbu	9811780225	Add5
10	Cus9	Torilal Giri	9811780225	Add1

Figure 32: Customer table's select statement.

### 3. LoyaltyPoint Table.



The screenshot shows the SQL Worksheet interface in SQL Server Management Studio. A query is being run against a database named 'DatabaseCoursework.sql'. The query is:

```
select * from loyaltypoint;
```

The results are displayed in the 'Query Result' window, showing 12 rows of data from the 'loyaltypoint' table:

	LOYALTYCODE	DAY	POINT
1	lp1	1	1
2	lp2	2	2
3	lp3	3	3
4	lp4	4	4
5	lp5	5	5
6	lp6	6	6
7	lp7	7	7
8	lp8	8	8
9	lp9	9	9
10	lp10	10	10
11	lp11	11	11
12	lp12	12	12

Figure 33: LoyaltyPoint table's select statement.

## 4. OrderInfo Table.

The screenshot shows the SQL Worksheet interface in SQL Server Management Studio. A query window displays the command:

```
select * from orderinfo;
```

The results pane shows a table with 11 rows of data:

	ORDERNUMBER	TIME	ORDERAMOUNT	STATUS	SN	CUSTOMERID
1	o1	3:20	400	On Time	123	Cus1
2	o2	13:20	1400	Late	124	Cus2
3	o3	4:40	800	On Time	125	Cus4
4	o4	5:50	450	Early	126	Cus5
5	o5	6:55	200	Early	127	Cus7
6	o6	1:20	800	On Time	128	Cus3
7	o7	23:20	900	On Time	129	Cus1
8	o8	15:10	1000	Late	133	Cus6
9	o9	19:30	100	On Time	129	Cus5
10	o10	16:20	700	Late	130	Cus2
11	o12	7:50	300	Early	131	Cus4

Figure 34: OrderInfo table's select statement.

## 5. Receipt Table.

The screenshot shows a SQL Worksheet interface with a query editor and a results viewer. The query editor contains the SQL statement: `select * from receipt;`. The results viewer displays a table with 14 rows of data from the receipt table, with columns: DISHCODE, ORDERNUMBER, ORDERUNIT, LINETOTAL, and RESTURANTCODE.

	DISHCODE	ORDERNUMBER	ORDERUNIT	LINETOTAL	RESTURANTCODE
1	f1	o1	2 plates	400	r1
2	f2	o2	3 plates	150	r2
3	f3	o3	2	200	r3
4	f4	o4	4	400	r4
5	f5	o5	5 pics	200	r5
6	f6	o6	2 plates	400	r6
7	f7	o7	3 rolls	150	r7
8	f8	o9	8 plates	800	r8
9	f9	o8	5 plates	500	r9
10	f10	o9	4 plates	900	r10
11	f11	o10	2 plates	400	r11
12	f12	o6	3 plates	1200	r12
13	f13	o12	6 plates	800	r5
14	f14	o10	6 plates	950	r9

Figure 35: Receipt table's select statement.

6. Bill Table.

The screenshot shows a SQL worksheet interface with two tabs: 'Worksheet' and 'Query Builder'. The 'Worksheet' tab is active, displaying the SQL query: `select * from Bill;`. Below the query, the 'Query Result' tab is open, showing a table with 13 rows. The table has two columns: 'SN' and 'Date'. The data is as follows:

	SN	Date
1	123	04-JAN-21
2	124	06-JAN-21
3	125	08-JAN-21
4	126	10-JAN-21
5	127	12-JAN-21
6	128	14-JAN-21
7	129	16-JAN-21
8	130	18-JAN-21
9	131	20-JAN-21
10	132	22-JAN-21
11	133	24-JAN-21
12	134	28-JAN-21
13	135	26-JAN-21

The 'Query Result' tab also displays the message: 'All Rows Fetched: 13 in 0.053 seconds'.

Figure 36: Bill table's select statement.

## 7. Restaurant Table.

The screenshot shows a SQL worksheet interface with a query editor and a results viewer. The query editor contains the SQL statement:

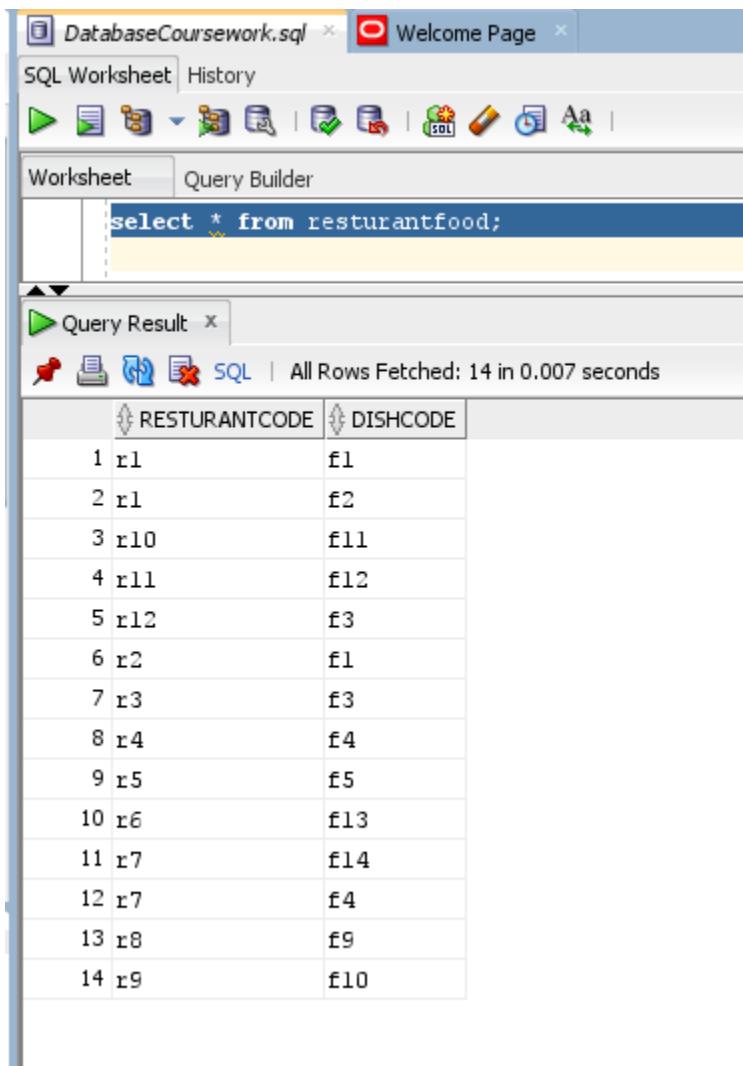
```
select * from restaurant;
```

The results viewer displays the data from the Restaurant table:

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
1	r1	Khaja Ghar	Dharan
2	r2	Hamro Khaja Ghar	Dharan
3	r3	Good Food	Itahari
4	r4	Food House	Dharan
5	r5	Ninja Dinner	Tarahara
6	r6	Ithaas	Itahari
7	r7	Momo Ghar	Dharan
8	r8	Hill Cafe	Tarahara
9	r9	Low Light	Dharan
10	r10	Pahuna	Itahari
11	r11	Galaxy Cafe	Itahari
12	r12	Chill House	Dharan

Figure 37: Restaurant table's select statement.

## 8.RestaurantFood Table.



The screenshot shows a SQL worksheet window in SQL Server Management Studio. The query being run is:

```
select * from restaurantfood;
```

The results are displayed in a grid:

	RESTURANTCODE	DISHCODE
1	r1	f1
2	r1	f2
3	r10	f11
4	r11	f12
5	r12	f3
6	r2	f1
7	r3	f3
8	r4	f4
9	r5	f5
10	r6	f13
11	r7	f14
12	r7	f4
13	r8	f9
14	r9	f10

Figure 38: RestaurantFood table's select statement.

## 9.Food Table.

The screenshot shows a SQL worksheet interface with a query window containing the following SQL code:

```
select * from food;
```

The results are displayed in a table titled "Query Result" with the following data:

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALITYID
1	f1	Chiken Momo	Momo	100	lp2
2	f2	Noodles	chaumin	50	lp1
3	f3	Burger	Berg	100	lp3
4	f4	Pizza	roti	100	lp4
5	f5	Samosa	Aalu	50	lp5
6	f6	Mixed Chatamari	Nepali Pizza	100	lp6
7	f7	Kati Roll	Roll	50	lp7
8	f8	Buff Momo	Buff Momo	90	lp8
9	f9	Salad	Salad	80	lp9
10	f10	Motton Briyani	Briyani	200	lp10
11	f11	Fried Rice	Bhuti Bhat	100	lp11
12	f12	Chicken Tikka	Tikka	150	lp12
13	f13	Chole bhature	bhature	70	lp12
14	f14	Kadai paneer	Kadai	200	lp9

Figure 39: Food table's select statement.

## 12. Web Forms

### 12.1 Basic Web Forms

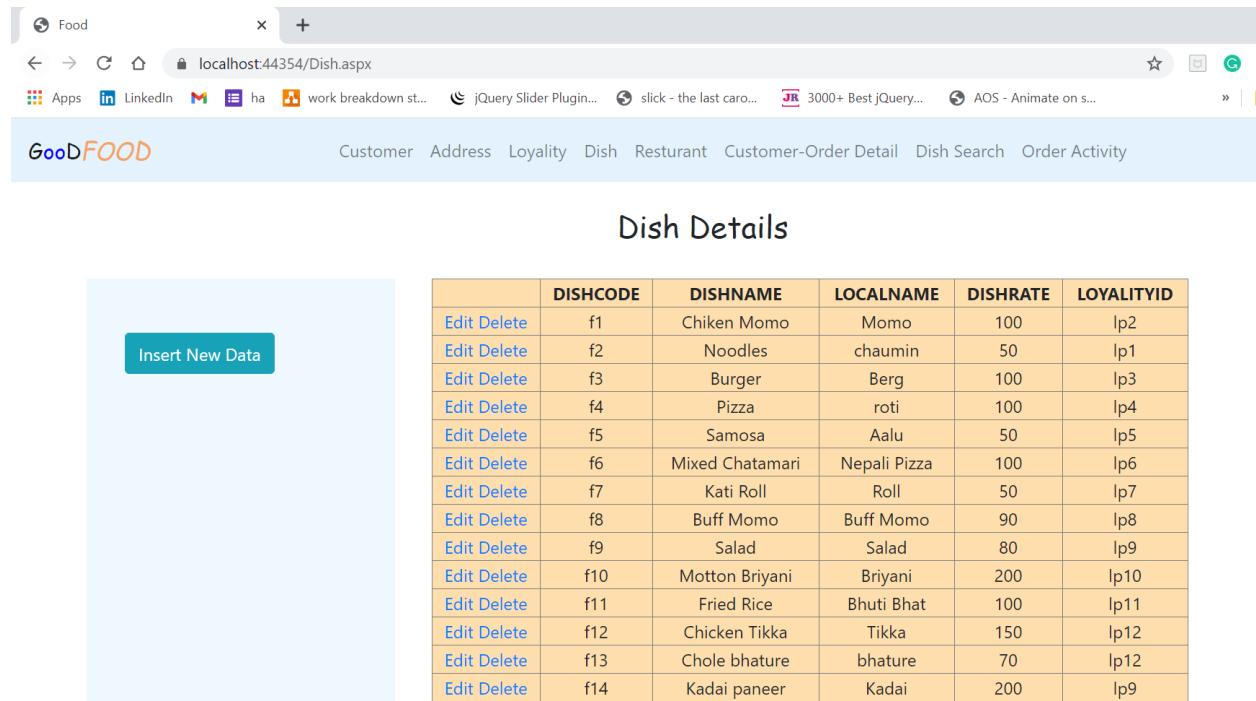
#### 1. Customer Details

The screenshot shows a web browser window with the title 'Customer' and a URL bar showing 'localhost:44354/Customer.aspx'. The page header includes the 'GoodFOOD' logo and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled 'Customer Details' and contains a table with 10 rows of customer data. A blue button labeled 'Add New Record' is visible on the left side of the table.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus10	ToriPujan	9811234890	Add7
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Dipesh Rai	9811234890	Add1

Figure 40: Customer details web form.

## 2. Dish Details

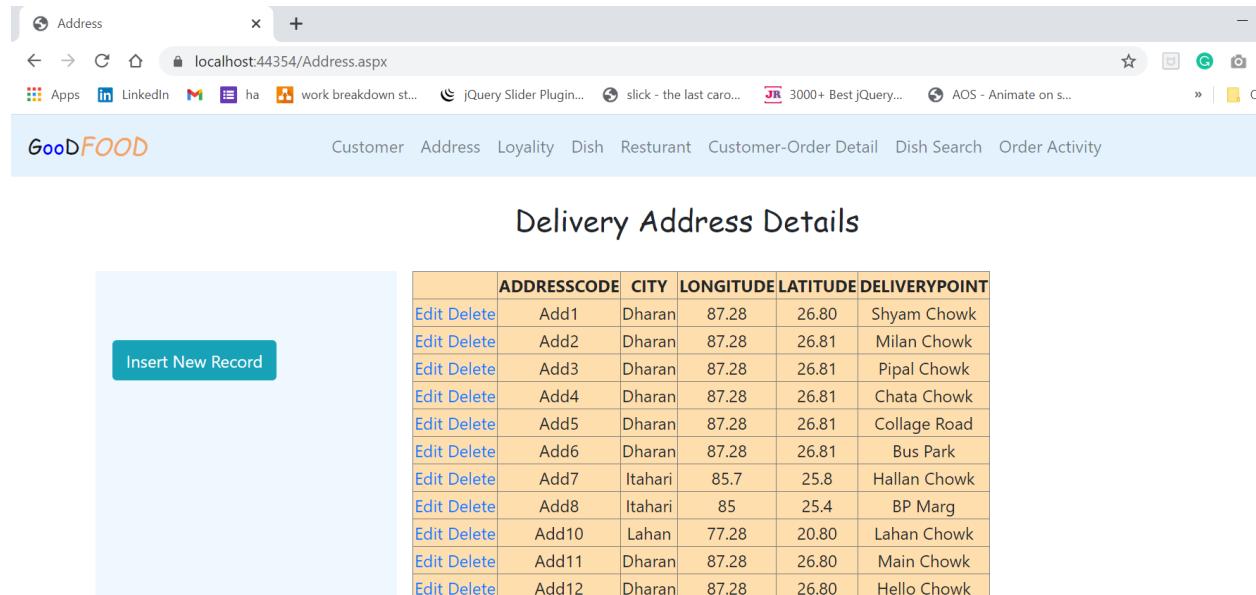


The screenshot shows a web browser window titled "Food" with the URL "localhost:44354/Dish.aspx". The page has a header with the "GoodFOOD" logo and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. Below the header is a section titled "Dish Details" containing a table of dish information. A button labeled "Insert New Data" is visible on the left side of the table.

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
<a href="#">Edit</a> <a href="#">Delete</a>	f1	Chiken Momo	Momo	100	lp2
<a href="#">Edit</a> <a href="#">Delete</a>	f2	Noodles	chaumin	50	lp1
<a href="#">Edit</a> <a href="#">Delete</a>	f3	Burger	Berg	100	lp3
<a href="#">Edit</a> <a href="#">Delete</a>	f4	Pizza	roti	100	lp4
<a href="#">Edit</a> <a href="#">Delete</a>	f5	Samosa	Aalu	50	lp5
<a href="#">Edit</a> <a href="#">Delete</a>	f6	Mixed Chatamari	Nepali Pizza	100	lp6
<a href="#">Edit</a> <a href="#">Delete</a>	f7	Kati Roll	Roll	50	lp7
<a href="#">Edit</a> <a href="#">Delete</a>	f8	Buff Momo	Buff Momo	90	lp8
<a href="#">Edit</a> <a href="#">Delete</a>	f9	Salad	Salad	80	lp9
<a href="#">Edit</a> <a href="#">Delete</a>	f10	Motton Briyani	Briyani	200	lp10
<a href="#">Edit</a> <a href="#">Delete</a>	f11	Fried Rice	Bhuti Bhat	100	lp11
<a href="#">Edit</a> <a href="#">Delete</a>	f12	Chicken Tikka	Tikka	150	lp12
<a href="#">Edit</a> <a href="#">Delete</a>	f13	Chole bhature	bhature	70	lp12
<a href="#">Edit</a> <a href="#">Delete</a>	f14	Kadai paneer	Kadai	200	lp9

Figure 41: Dish Details Web Form.

## 3. Delivery Address Details



The screenshot shows a web browser window titled "Address" with the URL "localhost:44354/Address.aspx". The page has a header with the "GoodFOOD" logo and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. Below the header is a section titled "Delivery Address Details" containing a table of delivery address information. A button labeled "Insert New Record" is visible on the left side of the table.

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
<a href="#">Edit</a> <a href="#">Delete</a>	Add1	Dharan	87.28	26.80	Shyam Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add2	Dharan	87.28	26.81	Milan Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add3	Dharan	87.28	26.81	Pipal Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add4	Dharan	87.28	26.81	Chata Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add5	Dharan	87.28	26.81	Collage Road
<a href="#">Edit</a> <a href="#">Delete</a>	Add6	Dharan	87.28	26.81	Bus Park
<a href="#">Edit</a> <a href="#">Delete</a>	Add7	Itahari	85.7	25.8	Hallan Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add8	Itahari	85	25.4	BP Marg
<a href="#">Edit</a> <a href="#">Delete</a>	Add10	Lahan	77.28	20.80	Lahan Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add11	Dharan	87.28	26.80	Main Chowk
<a href="#">Edit</a> <a href="#">Delete</a>	Add12	Dharan	87.28	26.80	Hello Chowk

Figure 42: Delivery Address Details.

## 4. Loyalty Point Details

Loyalty Point Details

	LOYALTYCODE	DAY	POINT
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	6
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 43: Loyalty Point Details.

## 5. Restaurant Details

Restaurant Details

	RESTAURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Ithaa	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 44: Restaurant Details web form.

## 12.2 Complex Webforms

### 1. Customer-Order Detail Form.

The screenshot shows a web browser window with the following details:

- Title Bar:** Customer Order
- Address Bar:** localhost:44354/CustomerOrder.aspx
- Toolbar:** Back, Forward, Stop, Home, Refresh, Favorites, Print, G
- Bookmark Bar:** Apps, LinkedIn, Gmail, ha, work breakdown st..., jQuery Slider Plugin..., slick - the last caro..., 3000+ Best jQuery..., AOS - Animate on s...
- Page Header:**
  - GoodFOOD logo
  - Navigation links: Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, Order Activity
- Form Content:**
  - A dropdown menu showing "Girija Tamang".
  - A table with the following data:

customer name	dish name	restaurant name	City	DeliveryPoint	DISHRATE	order unit	line total
Girija Tamang	Chiken Momo	Khaja Ghar	Dharan	Shyam Chowk	100	2 plates	400
Girija Tamang	Chiken Momo	Khaja Ghar	Dharan	Shyam Chowk	100	2 plates	400
Girija Tamang	Noodles	Khaja Ghar	Dharan	Shyam Chowk	50	2 plates	400
Girija Tamang	Noodles	Khaja Ghar	Dharan	Shyam Chowk	50	2 plates	400
Girija Tamang	Kadai paneer	Momo Ghar	Dharan	Shyam Chowk	200	3 rolls	150
Girija Tamang	Kadai paneer	Momo Ghar	Dharan	Shyam Chowk	200	3 rolls	150
Girija Tamang	Pizza	Momo Ghar	Dharan	Shyam Chowk	100	3 rolls	150
Girija Tamang	Pizza	Momo Ghar	Dharan	Shyam Chowk	100	3 rolls	150

Figure 45: Customer-Order Detail Web Form.

## 2. Dish Search Form

The screenshot shows a web browser window titled "Dish Search". The address bar indicates the URL is "localhost:44354/DishSearch.aspx". The page header includes the "GoodFOOD" logo and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled "Dish Search Form" and contains a dropdown menu set to "Chiken Momo". Below the dropdown is a table with the following data:

FoodCode	DISHNAME	LOCALNAME	DISHRATE	RESTURANTCODE	RESUTRANTNAME
f1	Chiken Momo	Momo	100	r1	Khaja Ghar
f1	Chiken Momo	Momo	100	r2	Hamro Khaja Ghar

Figure 46:Dish Search Web Form.

## 3. Order Activity Form

The screenshot shows a web browser window titled "Order Activity". The address bar indicates the URL is "localhost:44354/OrderActivity.aspx". The page header includes the "GoodFOOD" logo and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled "Order Activity Form" and contains a dropdown menu set to "Jan". Below the dropdown is a table with the following data:

RESTURANTCODE	RESUTRANTNAME	number of dishes ordered	TO_CHAR("DATE",'MON')
r1	Khaja Ghar	1	Jan
r4	Food House	1	Jan
r3	Good Food	1	Jan
r5	Ninja Dinner	1	Jan

Figure 47: Order Activity Web Form.

## 13. User Manual

**Note:** All basic web form process works similar as below mentioned guide.

### 13.1 Customer Details

#### 13.1.1 View Customer details:

Step 1. After loading the dashboard, click on Customer link to view Customer Details.

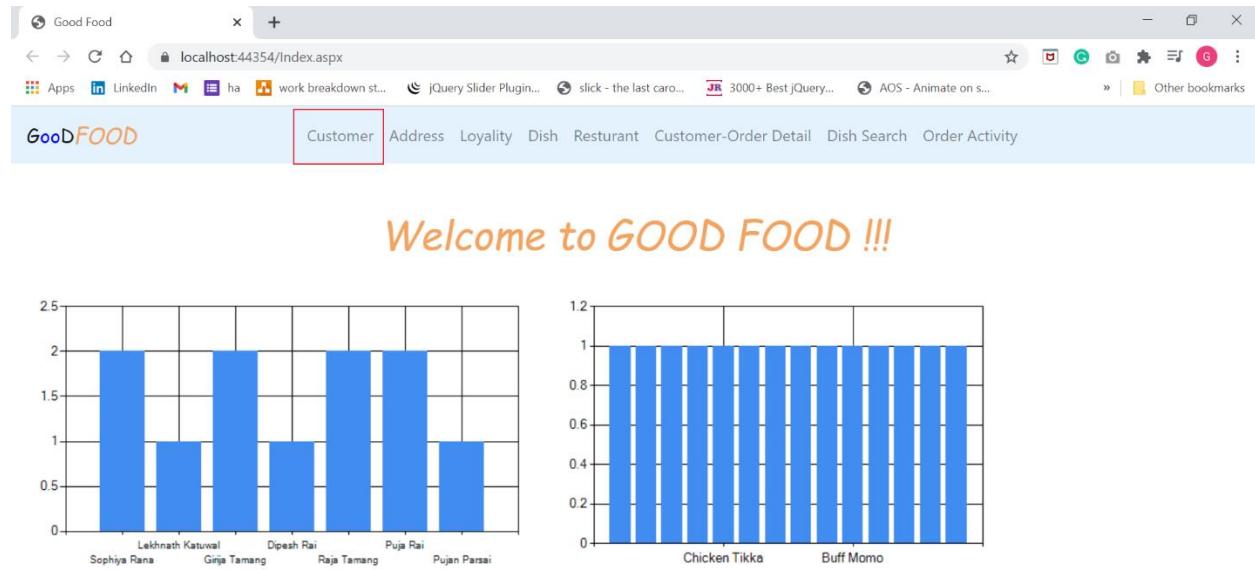


Figure 48: Dashboard to packages walkthrough manual.

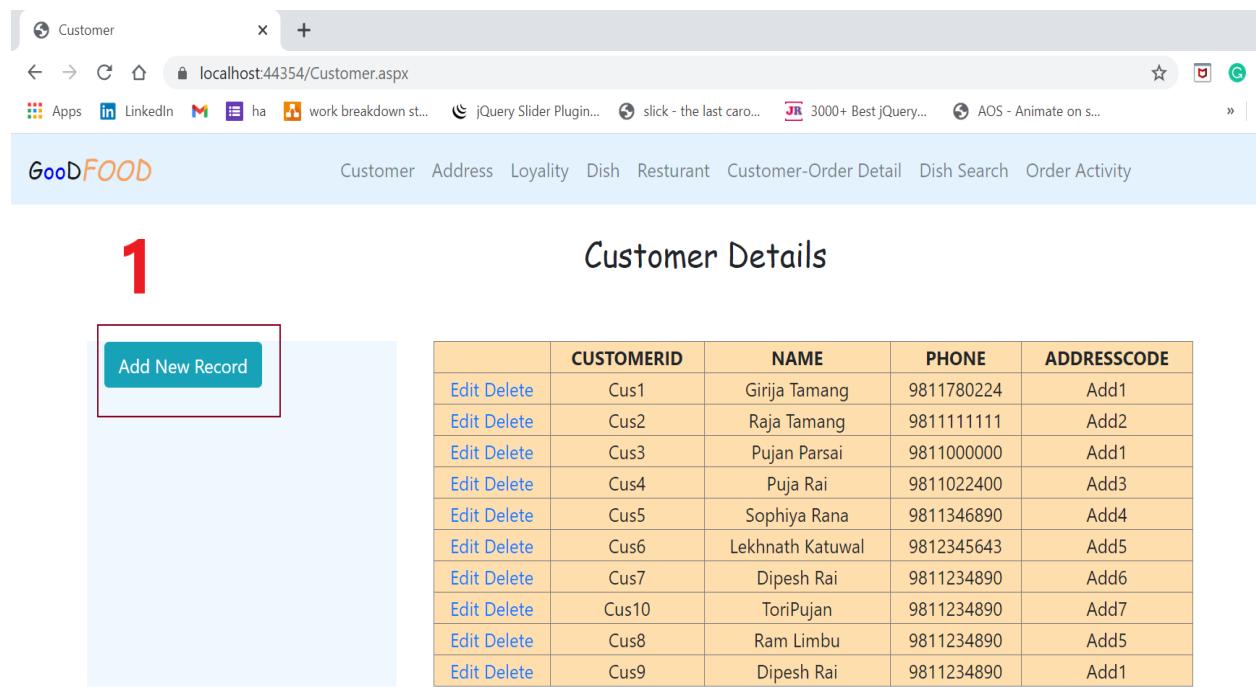
The screenshot shows a web application titled "Customer Details". At the top, there is a navigation bar with links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. On the left side, there is a teal-colored sidebar with a "Add New Record" button. The main content area displays a table with 10 rows of customer data. The table has columns for CUSTOMERID, NAME, PHONE, and ADDRESSCODE. Each row contains an "Edit Delete" link in the first column. The data is as follows:

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus10	ToriPujan	9811234890	Add7
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Dipesh Rai	9811234890	Add1

Figure 49: Customer Details Page.

### 13.1.2 Adding New Customer

Step 1. To add new Customer, click on the Add New Record button presented at the left top side of the page.



	CUSTOMERID	NAME	PHONE	ADDRESSCODE
<a href="#">Edit</a> <a href="#">Delete</a>	Cus1	Girija Tamang	9811780224	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus2	Raja Tamang	9811111111	Add2
<a href="#">Edit</a> <a href="#">Delete</a>	Cus3	Pujan Parsai	9811000000	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus4	Puja Rai	9811022400	Add3
<a href="#">Edit</a> <a href="#">Delete</a>	Cus5	Sophiya Rana	9811346890	Add4
<a href="#">Edit</a> <a href="#">Delete</a>	Cus6	Lekhnath Katuwal	9812345643	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus7	Dipesh Rai	9811234890	Add6
<a href="#">Edit</a> <a href="#">Delete</a>	Cus10	ToriPujan	9811234890	Add7
<a href="#">Edit</a> <a href="#">Delete</a>	Cus8	Ram Limbu	9811234890	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus9	Dipesh Rai	9811234890	Add1

Figure 50: Add Customer detail manual part 1.

Step 2. Fill up all the necessary details of the Customer.

Step 3. Click Insert to add the customer details or Cancel to cancel the process.

Customer Details

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus10	ToriPujan	9811234890	Add7
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Dipesh Rai	9811234890	Add1

Figure 51: Add customer detail user manual part 2.

### 13.1.3 Delete Customer record:

Step 1. Click on Delete link respective to desire row of the detail.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
<a href="#">Edit</a> <a href="#">Delete</a>	Cus1	Girija Tamang	9811780224	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus2	Raja Tamang	9811111111	Add2
<a href="#">Edit</a> <a href="#">Delete</a>	Cus3	Pujan Parsai	9811000000	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus4	Puja Rai	9811022400	Add3
<a href="#">Edit</a> <a href="#">Delete</a>	Cus5	Sophiya Rana	9811346890	Add4
<a href="#">Edit</a> <a href="#">Delete</a>	Cus6	Lekhnath Katuwal	9812345643	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus7	Dipesh Rai	9811234890	Add6
<a href="#">Edit</a> <a href="#">Delete</a>	Cus10	ToriPujan	9811234890	Add7
<a href="#">Edit</a> <a href="#">Delete</a>	Cus8	Ram Limbu	9811234890	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus9	Dipesh Rai	9811234890	Add1

Figure 52: Delete customer detail user manual.

### 13.1.4 Edit Customer record:

Step 1. Click on Edit link respective to desire row of the detail.

**Customer Details**

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit	Cus1	Girija Tamang	9811780224	Add1
Edit	Cus2	Raja Tamang	9811111111	Add2
Edit	Cus3	Pujan Parsai	9811000000	Add1
Edit	Cus4	Puja Rai	9811022400	Add3
Edit	Cus5	Sophiya Rana	9811346890	Add4
Edit	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit	Cus7	Dipesh Rai	9811234890	Add6
Edit	Cus10	ToriPujan	9811234890	Add7
Edit	Cus8	Ram Limbu	9811234890	Add5
Edit	Cus9	Dipesh Rai	9811234890	Add1

Figure 53: Edit customer user manual part 1.

Step 2. Perform necessary changes on the record.

Step 3. Click on Update to save changes or Cancel to cancel changes.

**Customer Details**

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
<a href="#">Edit</a> <a href="#">Delete</a>	Cus1	Girija Tamang	9811780224	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus2	Raja Tamang	9811111111	Add2
<a href="#">Update</a> <a href="#">Cancel</a>	Cus3	Pujan Parsai	9811000000	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus4	Puja Rai	9811022400	Add3
<a href="#">Edit</a> <a href="#">Delete</a>	Cus5	Sophiya Rana	9811346890	Add4
<a href="#">Edit</a> <a href="#">Delete</a>	Cus6	Lekhnath Katuwal	9812345643	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus7	Dipesh Rai	9811234890	Add6
<a href="#">Edit</a> <a href="#">Delete</a>	Cus10	ToriPujan	9811234890	Add7
<a href="#">Edit</a> <a href="#">Delete</a>	Cus8	Ram Limbu	9811234890	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus9	Dipesh Rai	9811234890	Add1

Figure 54: Edit customer detail user manual part 2.

### 13.2 Customer-Order Detail Form

**Note:** All basic complex form process works similar as below mentioned guide.

Step 1. Click on Customer-Order Detail link from nav menu to view Customer-Order Detail Form.

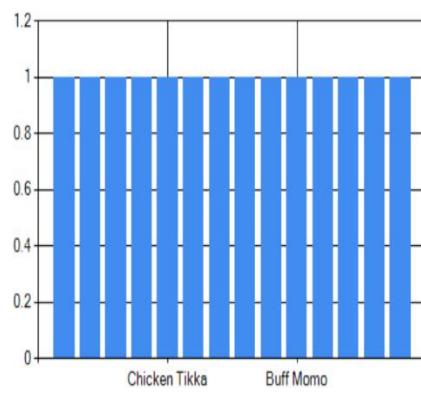
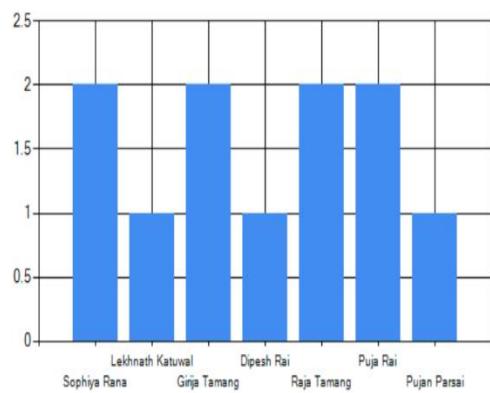


Figure 55: Dashboard to packages walkthrough manual

Step 2. Choose customer from dropdown to view customer details of the Dishes Ordered along with location of Delivery.

The screenshot shows a web browser window titled "Customer Order" with the URL "localhost:44354/CustomerOrder.aspx". The page header includes links for GoodFOOD, Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. A dropdown menu is open, showing "Girija Tamang" as the selected option. To the right of the dropdown, the number "2" is displayed. Below the dropdown is a table titled "Customer-Order Detail Form" with the following data:

customer name	dish name	restaurant name	City	DeliveryPoint	DISHRATE	order unit	line total
Girija Tamang	Chiken Momo	Khaja Ghar	Dharan	Shyam Chowk	100	2 plates	400
Girija Tamang	Chiken Momo	Khaja Ghar	Dharan	Shyam Chowk	100	2 plates	400
Girija Tamang	Noodles	Khaja Ghar	Dharan	Shyam Chowk	50	2 plates	400
Girija Tamang	Noodles	Khaja Ghar	Dharan	Shyam Chowk	50	2 plates	400
Girija Tamang	Kadai paneer	Momo Ghar	Dharan	Shyam Chowk	200	3 rolls	150
Girija Tamang	Kadai paneer	Momo Ghar	Dharan	Shyam Chowk	200	3 rolls	150
Girija Tamang	Pizza	Momo Ghar	Dharan	Shyam Chowk	100	3 rolls	150
Girija Tamang	Pizza	Momo Ghar	Dharan	Shyam Chowk	100	3 rolls	150

Figure 56: Customer-Order Detail Form user manual part 2.

**Note:** All basic complex form process works similar as above mentioned guide.

## 14. Testing

### 14.1 Crud in Customer Details

#### 14.1.1 Adding Customer.

<b>Objective</b>	To check whether a new customer will be added on customer details.
<b>Action</b>	A new customer with the following details is added: CustomerID: Cus9 Name: Tej Narayan Phone:9811780225 AddressCode: Hello Chowk
<b>Expected Result</b>	The new customer will be successfully added and displayed on customer details page.
<b>Actual Result</b>	A new row on customer details table was created with the given values.
<b>Conclusion</b>	Test Successful

The screenshot shows a web browser window with the following details:

- Header:** Customer, +, back, forward, refresh, address bar: localhost:44354/Customer.aspx, star, refresh.
- Toolbar:** Apps, LinkedIn, ha, work breakdown st..., jQuery Slider Plugin..., slick - the last caro..., 3000+ Best jQuery..., AOS - Animate on s...
- Navigation:** GoodFOOD, Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, Order Activity.
- Content:** Customer Details table with 8 rows of data. The table has columns: CUSTOMERID, NAME, PHONE, and ADDRESSCODE. Each row contains an 'Edit Delete' link in the first column.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus10	ToriPujan	9811234890	Add7
Edit Delete	Cus8	Ram Limbu	9811234890	Add5

Figure 57: Customer record before data entry.

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	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit	Cus1	Girija Tamang	9811780224	Add1
Edit	Cus2	Raja Tamang	9811111111	Add2
Edit	Cus3	Pujan Parsai	9811000000	Add1
Edit	Cus4	Puja Rai	9811022400	Add3
Edit	Cus5	Sophiya Rana	9811346890	Add4
Edit	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit	Cus7	Dipesh Rai	9811234890	Add6
Edit	Cus10	ToriPujan	9811234890	Add7
Edit	Cus8	Ram Limbu	9811234890	Add5
Edit	Cus9	Tej Narayan	9811780225	Add1

Figure 58: New customer data.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit	Cus1	Girija Tamang	9811780224	Add1
Edit	Cus2	Raja Tamang	9811111111	Add2
Edit	Cus3	Pujan Parsai	9811000000	Add1
Edit	Cus4	Puja Rai	9811022400	Add3
Edit	Cus5	Sophiya Rana	9811346890	Add4
Edit	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit	Cus7	Dipesh Rai	9811234890	Add6
Edit	Cus10	ToriPujan	9811234890	Add7
Edit	Cus8	Ram Limbu	9811234890	Add5
Edit	Cus9	Tej Narayan	9811780225	Add1

Figure 59: New customer details after adding.

### 14.1.2 Deleting Customer

<b>Objective</b>	To check whether a selected customer will be deleted from customer details.
<b>Action</b>	A row on customer details with the following details is selected for deletion:  CustomerID: Cus10 Name: ToriPujan Phone: 9811234890 AddressCode: Add7
<b>Expected Result</b>	Selected row will be deleted from customer details page.
<b>Actual Result</b>	Selected row was deleted from customer details page.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application interface for managing customer records. The top navigation bar includes links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled "Customer Details" and displays a table of customer information. A specific row for CustomerID Cus10, Name ToriPujan, Phone 9811234890, and AddressCode Add7 is highlighted with a red box, indicating it is the target for deletion.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus10	ToriPujan	9811234890	Add7
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Tej Narayan	9811780225	Add1

Figure 60: Customer record before deletion.

The screenshot shows a web browser window for a customer management system. The title bar says 'Customer' and the address bar shows 'localhost:44354/Customer.aspx'. The page header includes the 'GoodFOOD' logo and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. A red box highlights a table containing customer data:

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Tej Narayan	9811780225	Add1

Figure 61: Customer record after deletion.

### 14.1.3 Updating a Customer.

<b>Objective</b>	Check update operation for customer on updating the customer data for the selected row.
<b>Action</b>	A row on customer details with customerid Cus9 was selected for update operation.  The Name was changed to Tej Rai from Tej Narayan.
<b>Expected Result</b>	Selected row will be updated with the given details.
<b>Actual Result</b>	Selected row was updated with the given details.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application titled "Customer" at the URL "localhost:44354/Customer.aspx". The page has a header with the logo "GoodFOOD" and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. Below the header is a section titled "Customer Details" containing a table of customer records. A button labeled "Add New Record" is visible on the left. One specific row in the table is highlighted with a red border, corresponding to the "Cus9" entry in the "CUSTOMERID" column.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus10	ToriPujan	9811234890	Add7
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Tej Narayan	9811780225	Add1

Figure 62: Customer record before updating.

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The screenshot shows a web application titled "Customer Details" from "GoodFOOD". The URL is "localhost:44354/Customer.aspx". The page contains a table with columns: CUSTOMERID, NAME, PHONE, and ADDRESSCODE. A new row is being added at the bottom:

Add New Record	CUSTOMERID	NAME	PHONE	ADDRESSCODE
<a href="#">Edit</a> <a href="#">Delete</a>	Cus1	Girija Tamang	9811780224	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus2	Raja Tamang	9811111111	Add2
<a href="#">Edit</a> <a href="#">Delete</a>	Cus3	Pujan Parsai	9811000000	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus4	Puja Rai	9811022400	Add3
<a href="#">Edit</a> <a href="#">Delete</a>	Cus5	Sophiya Rana	9811346890	Add4
<a href="#">Edit</a> <a href="#">Delete</a>	Cus6	Lekhnath Katuwal	9812345643	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus7	Dipesh Rai	9811234890	Add6
<a href="#">Edit</a> <a href="#">Delete</a>	Cus8	Ram Limbu	9811234890	Add5
<a href="#">Update</a> <a href="#">Cancel</a>	Cus9	Tej Rai	9811780225	Add1

Figure 63: Changes on customer record before updating.

The screenshot shows the same "Customer Details" page after the update. The last row (Cus9) has a different background color (light orange) compared to the other rows (white). The "Edit" and "Delete" links are visible in the first column of the table.

Add New Record	CUSTOMERID	NAME	PHONE	ADDRESSCODE
<a href="#">Edit</a> <a href="#">Delete</a>	Cus1	Girija Tamang	9811780224	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus2	Raja Tamang	9811111111	Add2
<a href="#">Edit</a> <a href="#">Delete</a>	Cus3	Pujan Parsai	9811000000	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus4	Puja Rai	9811022400	Add3
<a href="#">Edit</a> <a href="#">Delete</a>	Cus5	Sophiya Rana	9811346890	Add4
<a href="#">Edit</a> <a href="#">Delete</a>	Cus6	Lekhnath Katuwal	9812345643	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus7	Dipesh Rai	9811234890	Add6
<a href="#">Edit</a> <a href="#">Delete</a>	Cus8	Ram Limbu	9811234890	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus9	Tej Rai	9811780225	Add1

Figure 64: Updated Customer record.

## 14.2 Crud in Address Details

### 14.2.1 Adding Address.

<b>Objective</b>	To check whether a new address will be added on address details.
<b>Action</b>	A new Address with the following details is added: ADDRESSCODE: Add13 CITY: Itahari LONGITUDE: 86.5 LATITUDE:25.6 DeliveryPoint: Lang Lang
<b>Expected Result</b>	The new address will be successfully added and displayed on address details page.
<b>Actual Result</b>	A new row on address details table was created with the given values.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application interface for managing delivery addresses. At the top, there's a header bar with a logo, a search bar, and various links. Below the header, the main content area has a title 'Delivery Address Details'. On the left, a sidebar contains a button labeled 'Insert New Record'. The central part of the screen is a table listing twelve address records. Each record includes edit and delete links. The table columns are: ADDRESSCODE, CITY, LONGITUDE, LATITUDE, and DELIVERYPOINT. The data in the table is as follows:

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit Delete	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit Delete	Add2	Dharan	87.28	26.81	Milan Chowk
Edit Delete	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit Delete	Add4	Dharan	87.28	26.81	Chata Chowk
Edit Delete	Add5	Dharan	87.28	26.81	Collage Road
Edit Delete	Add6	Dharan	87.28	26.81	Bus Park
Edit Delete	Add7	Itahari	85.7	25.8	Hallan Chowk
Edit Delete	Add8	Itahari	85	25.4	BP Marg
Edit Delete	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit Delete	Add11	Dharan	87.28	26.80	Main Chowk
Edit Delete	Add12	Dharan	87.28	26.80	Hello Chowk

Figure 65: Address record before data entry.

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The screenshot shows a web browser window with the URL `localhost:44354/Address.aspx`. The page title is "Delivery Address Details". On the left, there is a modal dialog box with a red border containing input fields for ADDRESSCODE (Add13), CITY (Itahari), LONGITUDE (86.5), LATITUDE (25.6), and DELIVERYPOINT (Lang Lang). Below the modal are two buttons: "Insert" (green) and "Cancel" (red). To the right of the modal is a table listing 13 existing delivery address records. The table has columns: ADDRESSCODE, CITY, LONGITUDE, LATITUDE, and DELIVERYPOINT. The last row of the table, which corresponds to the new record being inserted, is highlighted with a red border.

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit	Add2	Dharan	87.28	26.81	Milan Chowk
Edit	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit	Add4	Dharan	87.28	26.81	Chata Chowk
Edit	Add5	Dharan	87.28	26.81	Collage Road
Edit	Add6	Dharan	87.28	26.81	Bus Park
Edit	Add7	Itahari	85.7	25.8	Hallan Chowk
Edit	Add8	Itahari	85	25.4	BP Marg
Edit	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit	Add11	Dharan	87.28	26.80	Main Chowk
Edit	Add12	Dharan	87.28	26.80	Hello Chowk
Edit	Add13	Itahari	86.5	25.6	Lang Lang

Figure 66: New delivery details before entry.

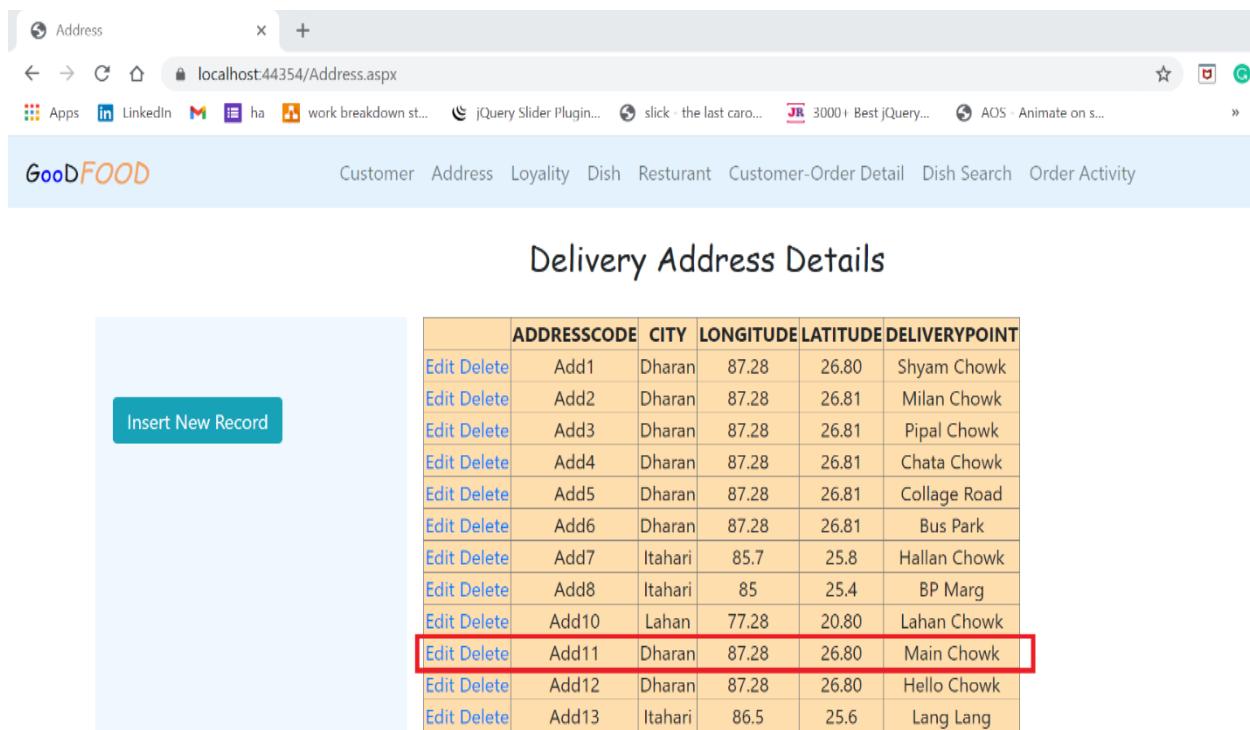
The screenshot shows the same web browser window and page layout as Figure 66. The modal dialog is no longer present. Instead, a green button labeled "Insert New Record" is visible on the left side of the page. The table on the right now includes the new record at the bottom, which is highlighted with a red border. This record has ADDRESSCODE "Add13", CITY "Itahari", LONGITUDE "86.5", LATITUDE "25.6", and DELIVERYPOINT "Lang Lang".

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit	Add2	Dharan	87.28	26.81	Milan Chowk
Edit	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit	Add4	Dharan	87.28	26.81	Chata Chowk
Edit	Add5	Dharan	87.28	26.81	Collage Road
Edit	Add6	Dharan	87.28	26.81	Bus Park
Edit	Add7	Itahari	85.7	25.8	Hallan Chowk
Edit	Add8	Itahari	85	25.4	BP Marg
Edit	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit	Add11	Dharan	87.28	26.80	Main Chowk
Edit	Add12	Dharan	87.28	26.80	Hello Chowk
Edit	Add13	Itahari	86.5	25.6	Lang Lang

Figure 67: Newly added delivery address record.

### 14.2.2. Deleting Address

<b>Objective</b>	To check whether a selected Address will be deleted from address details.
<b>Action</b>	A row on address details with the following details is selected for deletion: ADDRESSCODE: Add11 CITY: Dharan LONGITUDE: 87.28 LATITUDE: 26.80 DeliveryPoint: Main Chowk
<b>Expected Result</b>	Selected row will be deleted from address details page.
<b>Actual Result</b>	Selected row was deleted from address details page.
<b>Conclusion</b>	Test Successful



The screenshot shows a web application interface for managing delivery addresses. At the top, there's a navigation bar with links like 'Customer', 'Address', 'Loyalty', 'Dish', 'Restaurant', 'Customer-Order Detail', 'Dish Search', and 'Order Activity'. Below the navigation, the title 'Delivery Address Details' is centered. On the left, a sidebar has a button labeled 'Insert New Record'. The main content area contains a table with columns: ADDRESSCODE, CITY, LONGITUDE, LATITUDE, and DELIVERYPOINT. The table lists 13 address records. The 11th record, which has ADDRESSCODE 'Add11', CITY 'Dharan', LONGITUDE '87.28', LATITUDE '26.80', and DELIVERYPOINT 'Main Chowk', is highlighted with a red border around its entire row.

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit Delete	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit Delete	Add2	Dharan	87.28	26.81	Milan Chowk
Edit Delete	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit Delete	Add4	Dharan	87.28	26.81	Chata Chowk
Edit Delete	Add5	Dharan	87.28	26.81	Collage Road
Edit Delete	Add6	Dharan	87.28	26.81	Bus Park
Edit Delete	Add7	Itahari	85.7	25.8	Hallan Chowk
Edit Delete	Add8	Itahari	85	25.4	BP Marg
Edit Delete	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit Delete	Add11	Dharan	87.28	26.80	Main Chowk
Edit Delete	Add12	Dharan	87.28	26.80	Hello Chowk
Edit Delete	Add13	Itahari	86.5	25.6	Lang Lang

Figure 68: Delivery address record before deletion.

The screenshot shows a web browser window for 'localhost:44354/Address.aspx'. The title bar says 'Address' and has a '+' button. The address bar shows the URL. Below the address bar is a navigation bar with links: Apps, LinkedIn, Gmail, ha, work breakdown st..., jQuery Slider Plugin..., slick - the last caro..., 3000+ Best jQuery..., AOS - Animate on s... . The main content area has a header 'GoodFOOD' and a navigation menu with links: Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, Order Activity. The main content is titled 'Delivery Address Details' and displays a table of address records. A red box highlights the table. A blue button labeled 'Insert New Record' is visible on the left.

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit Delete	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit Delete	Add2	Dharan	87.28	26.81	Milan Chowk
Edit Delete	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit Delete	Add4	Dharan	87.28	26.81	Chata Chowk
Edit Delete	Add5	Dharan	87.28	26.81	Collage Road
Edit Delete	Add6	Dharan	87.28	26.81	Bus Park
Edit Delete	Add7	Itahari	85.7	25.8	Hallan Chowk
Edit Delete	Add8	Itahari	85	25.4	BP Marg
Edit Delete	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit Delete	Add12	Dharan	87.28	26.80	Hello Chowk
Edit Delete	Add13	Itahari	86.5	25.6	Lang Lang

Figure 69: Delivery address record after deletion

### 14.2.3. Updating Address.

<b>Objective</b>	Check update operation for address on updating the address data for the selected row.
<b>Action</b>	A row on address details with addresscode: Add13 was selected for update operation.  The deliverypoint was changed to main bazar from Lang Lang.
<b>Expected Result</b>	Selected row will be updated with the given details.
<b>Actual Result</b>	Selected row was updated with the given details.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application interface for managing delivery addresses. At the top, there's a header bar with links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. Below the header, the title 'Delivery Address Details' is centered. On the left, a sidebar button says 'Insert New Record'. The main content area contains a table with the following data:

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit Delete	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit Delete	Add2	Dharan	87.28	26.81	Milan Chowk
Edit Delete	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit Delete	Add4	Dharan	87.28	26.81	Chata Chowk
Edit Delete	Add5	Dharan	87.28	26.81	Collage Road
Edit Delete	Add6	Dharan	87.28	26.81	Bus Park
Edit Delete	Add8	Itahari	85	25.4	BP Marg
Edit Delete	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit Delete	Add12	Dharan	87.28	26.80	Hello Chowk
Edit Delete	Add13	Itahari	86.5	25.6	Lang Lang

Figure 70: Delivery Address record before update.

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	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit Delete	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit Delete	Add2	Dharan	87.28	26.81	Milan Chowk
Edit Delete	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit Delete	Add4	Dharan	87.28	26.81	Chata Chowk
Edit Delete	Add5	Dharan	87.28	26.81	Collage Road
Edit Delete	Add6	Dharan	87.28	26.81	Bus Park
Edit Delete	Add8	Itahari	85	25.4	BP Marg
Edit Delete	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit Delete	Add12	Dharan	87.28	26.80	Hello Chowk
Update Cancel	Add13	Itahari	86.5	25.6	Main Bazar

Figure 71: Change done in Delivery address record before updating.

	ADDRESSCODE	CITY	LONGITUDE	LATITUDE	DELIVERYPOINT
Edit Delete	Add1	Dharan	87.28	26.80	Shyam Chowk
Edit Delete	Add2	Dharan	87.28	26.81	Milan Chowk
Edit Delete	Add3	Dharan	87.28	26.81	Pipal Chowk
Edit Delete	Add4	Dharan	87.28	26.81	Chata Chowk
Edit Delete	Add5	Dharan	87.28	26.81	Collage Road
Edit Delete	Add6	Dharan	87.28	26.81	Bus Park
Edit Delete	Add8	Itahari	85	25.4	BP Marg
Edit Delete	Add10	Lahan	77.28	20.80	Lahan Chowk
Edit Delete	Add12	Dharan	87.28	26.80	Hello Chowk
Edit Delete	Add13	Itahari	86.5	25.6	Main Bazar

Figure 72: New updated delivery address record.

## 14.3 Crud in Dish Details

### 13.3.1 Adding Dish.

<b>Objective</b>	To check whether a new dish will be added on customer details.
<b>Action</b>	A new dish with the following details is added: DISHCODE: f15 DISHNAME: laddu LOCALNAME: laddu DISHRATE: 20 LOYALITYID: 5
<b>Expected Result</b>	The new dish will be successfully added and displayed on dish details page.
<b>Actual Result</b>	A new row on dish details table was created with the given values.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application interface for managing food items. At the top, there's a header with the word 'Food'. Below it is a navigation bar with various links: Apps, LinkedIn, Gmail, ha, work breakdown st..., jQuery Slider Plugin..., slick - the last caro..., 3000+ Best jQuery..., AOS - Animate on s... . The main content area is titled 'Dish Details'. On the left, there's a button labeled 'Insert New Data'. To the right, there's a table with 14 rows of data:

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALITYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Aalu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9

Figure 73: Dish record before adding new.

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The screenshot shows a web browser window for 'Food' at localhost:44354/Dish.aspx. The title bar says 'Food'. The page header includes links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area has a heading 'Dish Details'. On the left is a form with fields: DISHCODE (f15), DISHNAME (Laddu), LOCALNAME (Laddu), DISHRATE (20), and LOYALTYID (5). Below the form are two buttons: 'Insert' (green) and 'Cancel' (red). A red box highlights this form area. To the right is a table with columns: DISHCODE, DISHNAME, LOCALNAME, DISHRATE, and LOYALTYID. The table contains 14 rows of dish data.

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Aalu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9

Figure 74: New dish details before entry.

The screenshot shows a web browser window for 'Food' at localhost:44354/Dish.aspx. The title bar says 'Food'. The page header includes links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area has a heading 'Dish Details'. On the left is a form with a button 'Insert New Data' (blue). To the right is a table with columns: DISHCODE, DISHNAME, LOCALNAME, DISHRATE, and LOYALTYID. The table contains 14 rows of dish data. A red box highlights the last row, which corresponds to the data entered in Figure 74.

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Aalu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9
Edit Delete	f15	Laddu	Laddu	20	lp5

Figure 75: Newly added dish record.

### 14.3.2 Deleting dish

<b>Objective</b>	To check whether a selected dish will be deleted from dish details.
<b>Action</b>	A row on dish details is selected for deletion:
<b>Expected Result</b>	Selected row will be deleted from customer details page.
<b>Actual Result</b>	Selected row was deleted from customer details page.
<b>Conclusion</b>	Test Successful

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Aalu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9
Edit Delete	f15	Laddu	Laddu	20	lp5

Figure 76: Dish record before deletion

The screenshot shows a web browser window titled 'Food' with the URL 'localhost:44354/Dish.aspx'. The page header includes links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. On the left, there is a button labeled 'Insert New Data'. The main content area is titled 'Dish Details' and displays a table with 14 rows of dish information. A red box highlights the last row of the table.

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Aalu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9

Figure 77: Dish record after deletion.

### 14.3.3 Updating a dish.

<b>Objective</b>	Check update operation for dish on updating the dish data for the selected row.
<b>Action</b>	A row on dish details was selected for update operation.
<b>Expected Result</b>	Selected row will be updated with the given details.
<b>Actual Result</b>	Selected row was updated with the given details.
<b>Conclusion</b>	Test Successful

Dish Details

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Aalu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9

Figure 78: Dish record before update

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Dish Details

	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Update Cancel	f5	Samosa	Alu	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9

Figure 79: Change done in dish record before updating.

Dish Details

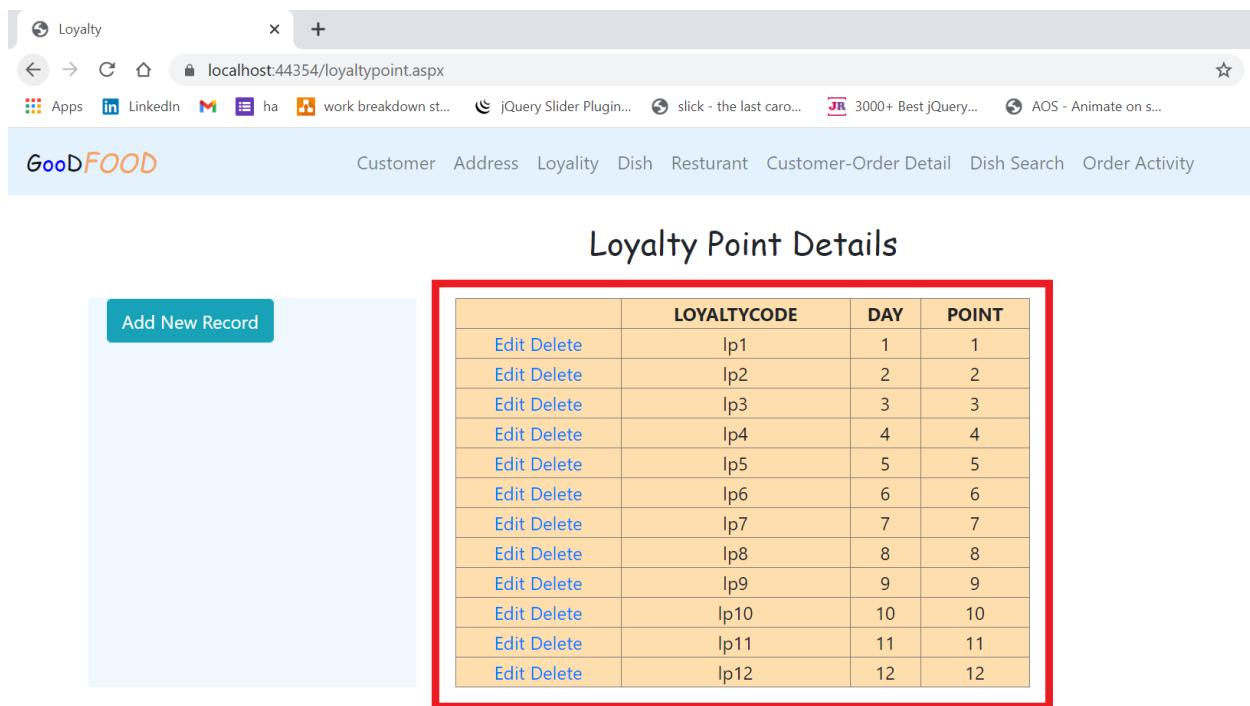
	DISHCODE	DISHNAME	LOCALNAME	DISHRATE	LOYALTYID
Edit Delete	f1	Chiken Momo	Momo	100	lp2
Edit Delete	f2	Noodles	chaumin	50	lp1
Edit Delete	f3	Burger	Berg	100	lp3
Edit Delete	f4	Pizza	roti	100	lp4
Edit Delete	f5	Samosa	Samosa	50	lp5
Edit Delete	f6	Mixed Chatamari	Nepali Pizza	100	lp6
Edit Delete	f7	Kati Roll	Roll	50	lp7
Edit Delete	f8	Buff Momo	Buff Momo	90	lp8
Edit Delete	f9	Salad	Salad	80	lp9
Edit Delete	f10	Motton Briyani	Briyani	200	lp10
Edit Delete	f11	Fried Rice	Bhuti Bhat	100	lp11
Edit Delete	f12	Chicken Tikka	Tikka	150	lp12
Edit Delete	f13	Chole bhature	bhature	70	lp12
Edit Delete	f14	Kadai paneer	Kadai	200	lp9

Figure 80: New updated dish record

## 14.4 Crud in Loyalty Details

### 14.4.1. Adding Loyalty Point

<b>Objective</b>	To check whether a new loyalty will be added on loyalty point details.
<b>Action</b>	A new loyalty details is added:
<b>Expected Result</b>	The new loyalty will be successfully added and displayed on customer details page.
<b>Actual Result</b>	A new row on customer details table was created with the given values.
<b>Conclusion</b>	Test Successful



The screenshot shows a web application interface. At the top, there's a header bar with a 'Loyalty' icon, a search bar, and a URL 'localhost:44354/loyaltypoint.aspx'. Below the header, the main navigation menu includes 'GoodFOOD', 'Customer', 'Address', 'Loyalty', 'Dish', 'Restaurant', 'Customer-Order Detail', 'Dish Search', and 'Order Activity'. The main content area is titled 'Loyalty Point Details'. On the left, there's a button 'Add New Record'. On the right, there's a table with a red border containing 12 rows of data. The table has columns: 'Edit Delete', 'LOYALTYCODE', 'DAY', and 'POINT'. The data is as follows:

	LOYALTYCODE	DAY	POINT
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	6
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 81: Loyalty Point record before adding new.

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The screenshot shows a web browser window with the title 'Loyalty' and the URL 'localhost:44354/loyaltypoint.aspx'. The page is titled 'Loyalty Point Details'. On the left, there is a form with fields for 'LOYALTYCODE' (containing 'lp13'), 'POINT' (containing '13'), and 'DAY' (containing '13'). Below the form are two buttons: 'Insert' (green) and 'Cancel' (red). On the right, there is a table with columns 'LOYALTYCODE', 'DAY', and 'POINT'. The table contains 12 rows, each with a 'Edit Delete' link and a unique ID (lp1 to lp12). The row for 'lp13' is highlighted with a red border.

	LOYALTYCODE	DAY	POINT
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	6
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 82: New loyalty point details before entry.

The screenshot shows the same web application after a new record has been added. The 'Add New Record' button is now disabled. The table on the right now includes a new row for 'lp13' at the top of the list, with a red border around the entire row. All other rows (lp1 to lp12) have moved down one position.

	LOYALTYCODE	DAY	POINT
Edit Delete	lp13	13	13
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	6
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 83: Newly added loyalty point record.

#### 14.4.2. Deleting Loyalty Point

<b>Objective</b>	To check whether a selected customer will be deleted from staff details.
<b>Action</b>	A row on loyalty point details is selected for delete.
<b>Expected Result</b>	Selected row will be deleted from loyalty point details page.
<b>Actual Result</b>	Selected row was deleted from loyalty point details page.
<b>Conclusion</b>	Test Successful

	LOYALTYCODE	DAY	POINT	
<a href="#">Edit</a> <a href="#">Delete</a>	lp13	13	13	
<a href="#">Edit</a> <a href="#">Delete</a>	lp1	1	1	
<a href="#">Edit</a> <a href="#">Delete</a>	lp2	2	2	
<a href="#">Edit</a> <a href="#">Delete</a>	lp3	3	3	
<a href="#">Edit</a> <a href="#">Delete</a>	lp4	4	4	
<a href="#">Edit</a> <a href="#">Delete</a>	lp5	5	5	
<a href="#">Edit</a> <a href="#">Delete</a>	lp6	6	6	
<a href="#">Edit</a> <a href="#">Delete</a>	lp7	7	7	
<a href="#">Edit</a> <a href="#">Delete</a>	lp8	8	8	
<a href="#">Edit</a> <a href="#">Delete</a>	lp9	9	9	
<a href="#">Edit</a> <a href="#">Delete</a>	lp10	10	10	
<a href="#">Edit</a> <a href="#">Delete</a>	lp11	11	11	
<a href="#">Edit</a> <a href="#">Delete</a>	lp12	12	12	

Figure 84: Loyalty point record before deletion.

The screenshot shows a web browser window with the title 'Loyalty' and the URL 'localhost:44354/loyaltpoint.aspx'. The page is titled 'Loyalty Point Details'. On the left, there is a button 'Add New Record'. On the right, there is a table with a red border containing 12 rows of data. The table has columns: LOYALTYCODE, DAY, and POINT. The data is as follows:

	LOYALTYCODE	DAY	POINT
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	6
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 85: Loyalty record after deletion.

#### 14.4.3. Updating loyalty point.

<b>Objective</b>	Check update operation for loyalty point on updating the loyalty point data for the selected row.
<b>Action</b>	A row on loyalty point details with customerid Cus9 was selected for update operation. The Name was changed to Tej Rai from Tej Narayan.
<b>Expected Result</b>	Selected row will be updated with the given details.
<b>Actual Result</b>	Selected row was updated with the given details.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application titled "Loyalty Point Details". On the left, there's a sidebar with a button labeled "Add New Record". The main area contains a table with columns: LOALTYCODE, DAY, and POINT. The table has 12 rows. The 6th row, which corresponds to LoyaltyCode lp6, is highlighted with a red box. The data in the table is as follows:

	LOYALTYCODE	DAY	POINT
Edit Delete	lp13	13	13
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	6
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 86: Loyalty Point record before update.

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	LOYALTYCODE	DAY	POINT
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Update Cancel	lp6	6	9
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 87: Change done in Loyalty point record before updating.

	LOYALTYCODE	DAY	POINT
Edit Delete	lp1	1	1
Edit Delete	lp2	2	2
Edit Delete	lp3	3	3
Edit Delete	lp4	4	4
Edit Delete	lp5	5	5
Edit Delete	lp6	6	9
Edit Delete	lp7	7	7
Edit Delete	lp8	8	8
Edit Delete	lp9	9	9
Edit Delete	lp10	10	10
Edit Delete	lp11	11	11
Edit Delete	lp12	12	12

Figure 88: New updated loyalty record.

## 14.5 Crud in Restaurant Details

### 14.5.1. Adding Restaurant

<b>Objective</b>	To check whether a new restaurant will be added on restaurant details.
<b>Action</b>	A new restaurant with the following details is added: CustomerID: Cus9 Name: Tej Narayan Phone:9811780225 AddressCode: Hello Chowk
<b>Expected Result</b>	The new restaurant will be successfully added and displayed on customer details page.
<b>Actual Result</b>	A new row on restaurant details table was created with the given values.
<b>Conclusion</b>	Test Successful

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Itha	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

 "
/>

Figure 89: Restaurant record before adding new.

The screenshot shows a web browser window titled 'Restaurant Details'. The URL is 'localhost:44354/restaurant.aspx'. The page has a header with 'GoodFOOD' and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity.

The main content area is titled 'Restaurant Details'. On the left, there is a form with fields for RESTURANTCODE ('r13'), RESUTRANTNAME ('Majhari'), and RESTURANTADDRESS ('Itahari'). Below the form are two buttons: 'Insert' (green) and 'Cancel' (red).

On the right, there is a table titled 'Restaurant Details' with columns: RESTURANTCODE, RESUTRANTNAME, and RESTURANTADDRESS. The table contains 12 rows of data. A red box highlights the first row (r13, Majhari, Itahari), which corresponds to the data entered in the form.

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Itha	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 90: 8 New restaurant details before entry

The screenshot shows a web browser window titled 'Restaurant Details'. The URL is 'localhost:44354/restaurant.aspx'. The page has a header with 'GoodFOOD' and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity.

The main content area is titled 'Restaurant Details'. On the left, there is a button labeled 'Insert New Data'.

On the right, there is a table titled 'Restaurant Details' with columns: RESTURANTCODE, RESUTRANTNAME, and RESTURANTADDRESS. The table contains 12 rows of data. A red box highlights the last row (r13, Majhari, Itahari), which is the newly added record.

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r13	Majhari	Itahari
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Itha	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 91: Newly added restaurant record.

### 14.5.2. Deleting restaurant

<b>Objective</b>	To check whether a selected restaurant will be deleted from staff details.
<b>Action</b>	A row on restaurant details with the following details is selected for deletion: CustomerID: Cus10 Name: ToriPujan Phone: 9811234890 AddressCode: Add7
<b>Expected Result</b>	Selected row will be deleted from restaurant details page.
<b>Actual Result</b>	Selected row was deleted from restaurant details page.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application interface for managing restaurant details. The main title is "Restaurant Details". On the left, there's a button labeled "Insert New Data". The central part of the screen displays a table with three columns: RESTURANTCODE, RESUTRANTNAME, and RESTURANTADDRESS. The first row of the table, corresponding to RESTURANTCODE "r13" and RESUTRANTNAME "Majhari", is highlighted with a red border. The rest of the table rows contain other restaurant names like "Khaja Ghar", "Hamro Khaja Ghar", etc., along with their respective codes and addresses.

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r13	Majhari	Itahari
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Ithaa	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 92: 4 Package record before deletion

The screenshot shows a web browser window with the URL `localhost:44354/restaurant.aspx`. The page title is "Restaurant Details". On the left, there is a teal button labeled "Insert New Data". On the right, there is a table with a red border containing 12 rows of restaurant data. The columns are labeled "RESTAURANTCODE", "RESUTRANTNAME", and "RESTURANTADDRESS". Each row has "Edit" and "Delete" links in the first column.

	RESTAURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Itha	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 93: Restaurant record after deletion.

### 14.5.3. Updating a Restaurant.

<b>Objective</b>	Check update operation for restaurant on updating the restaurant data for the selected row.
<b>Action</b>	A row on restaurant details with customerid Cus9 was selected for update operation. The Name was changed to Tej Rai from Tej Narayan.
<b>Expected Result</b>	Selected row will be updated with the given details.
<b>Actual Result</b>	Selected row was updated with the given details.
<b>Conclusion</b>	Test Successful

The screenshot shows a web application interface for managing restaurant details. The top navigation bar includes links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled "Restaurant Details" and displays a table with 12 rows of data. The columns are labeled RESTAURANTCODE, RESUTRANTNAME, and RESTURANTADDRESS. The 6th row, which corresponds to the record being updated, is highlighted with a red box. The table rows are as follows:

	RESTAURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Itha	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 94: Resturant record before update.

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The screenshot shows a web application titled "Restaurant Details". On the left, there is a button labeled "Insert New Data". The main area displays a table with columns: RESTURANTCODE, RESUTRANTNAME, and RESTURANTADDRESS. The table contains 12 rows, each with an "Edit Delete" link. The 6th row, corresponding to restaurant code r6, has its RESUTRANTNAME field set to "Chill Ithaai", which is highlighted by a red rectangular box.

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Update Cancel	r6	Chill Ithaai	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 95: Change done in Restaurant record before updating.

This screenshot is identical to Figure 95, showing the "Restaurant Details" page with the same table structure and the 6th row (r6) containing the value "Chill Ithaai" in the RESUTRANTNAME column, which is highlighted by a red box.

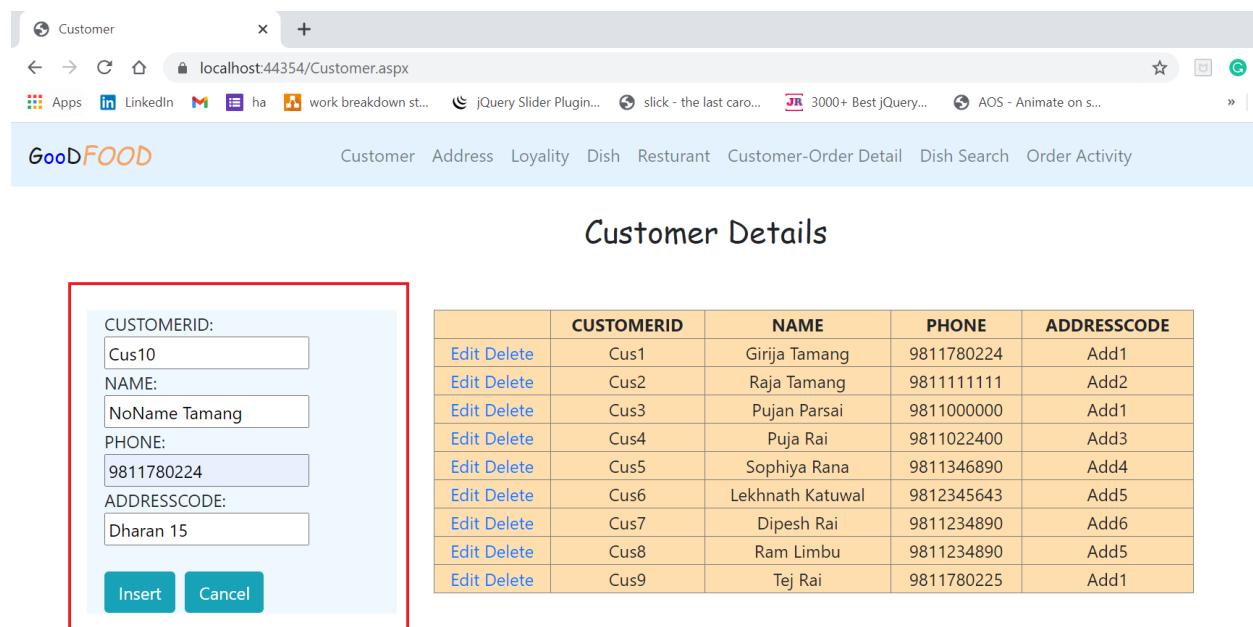
	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Chill Ithaai	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 96: New updated restaurant record.

## 14.6 Miscellaneous tests:

### 14.6.1 Parent Key Violation

<b>Objective</b>	Testing to ensure adding new record successfully.
<b>Action</b>	Adding new data record processed
<b>Expected Result</b>	A new record should be added successfully
<b>Actual Result</b>	Parent key violation error occurred
<b>Conclusion</b>	Test Failure



The screenshot shows a web application interface for managing customer details. At the top, there's a header bar with a logo, a search bar, and various links like 'Customer', 'Address', 'Loyalty', etc. Below the header, the main content area has a title 'Customer Details'. On the left, there's a form with fields for CUSTOMERID (Cus10), NAME (NoName Tamang), PHONE (9811780224), and ADDRESSCODE (Dharan 15). There are 'Insert' and 'Cancel' buttons at the bottom of this form. To the right of the form is a table listing nine customer records with columns for CUSTOMERID, NAME, PHONE, and ADDRESSCODE. Each row in the table contains an 'Edit Delete' link.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Tej Rai	9811780225	Add1

Figure 97: Customer Detail filled up during entry.

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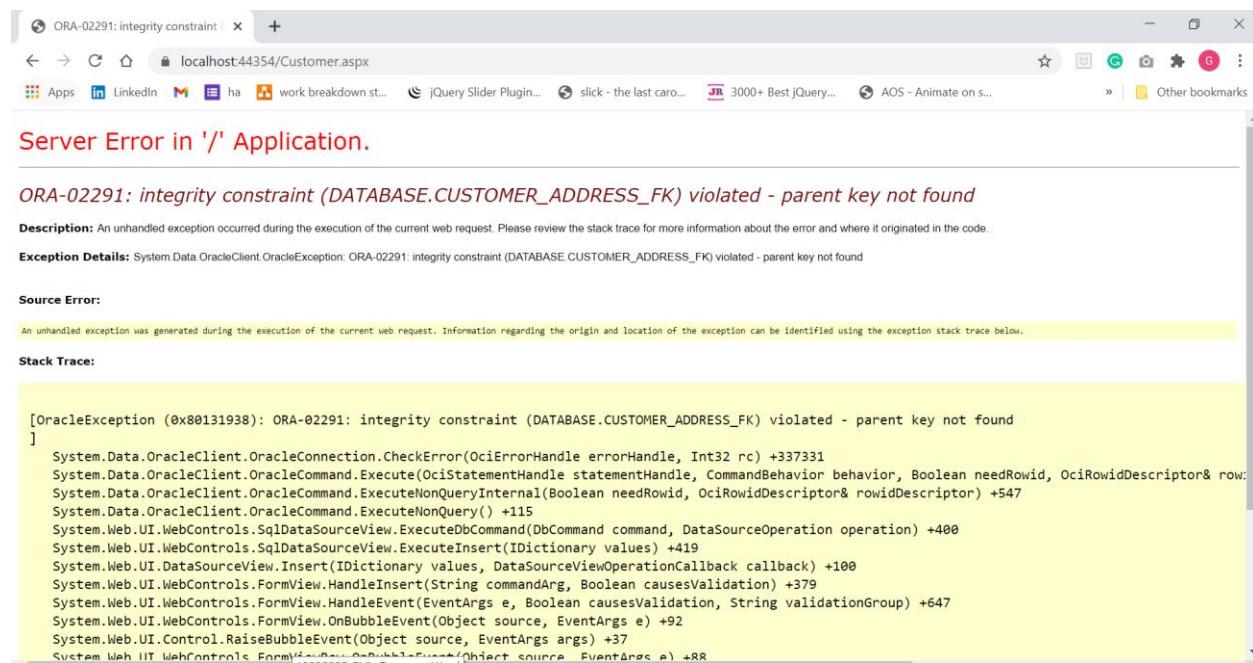


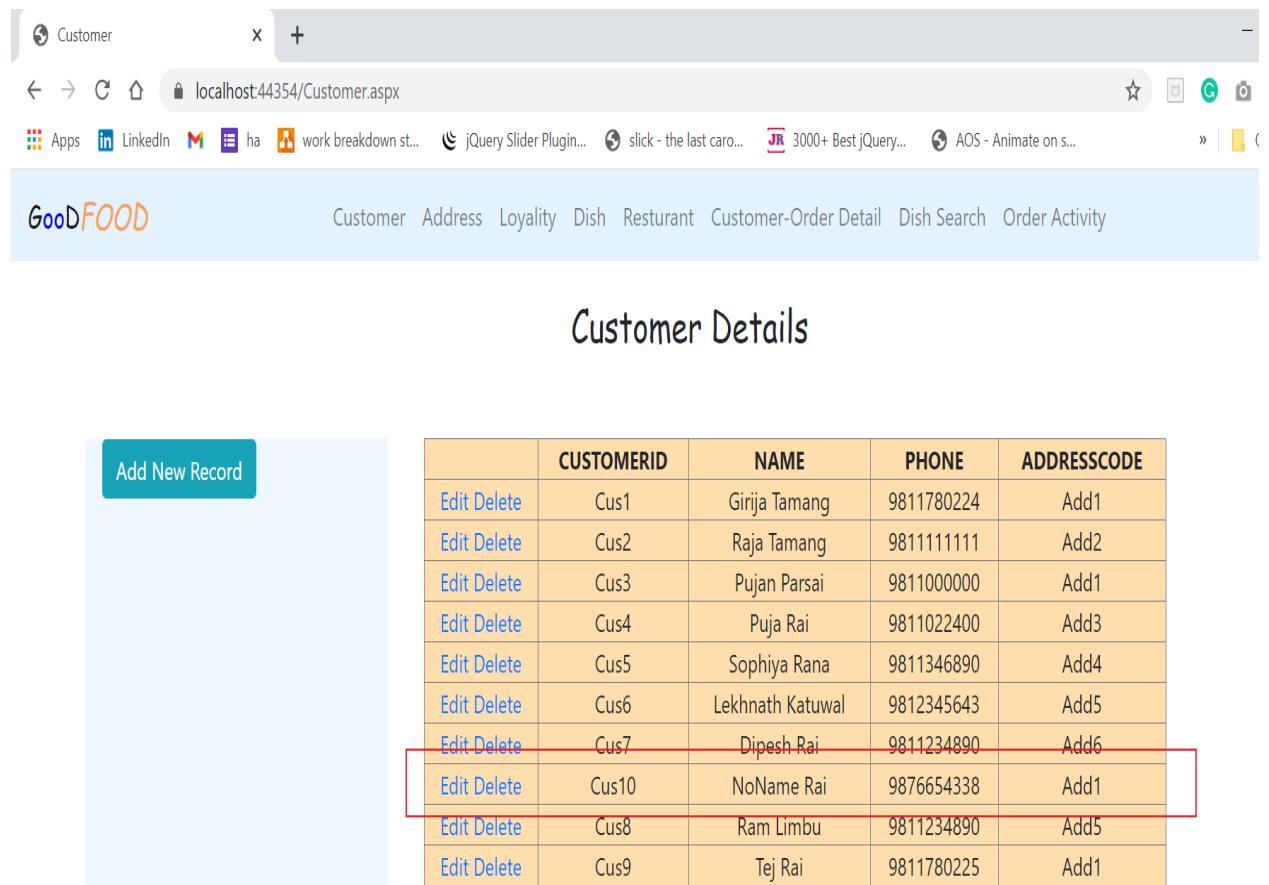
Figure 98: Screenshot of error occurred during entry.

The error encountered was due to parent key violation because I had tried to provide Address Name to a AddressCode which was not even registered in the Address record. So, to overcome this problem, I prepared dropdown list of registered Address Code to make accessible to only registered Address Code.

The screenshot shows a web application titled "Customer" with the URL `localhost:44354/Customer.aspx`. The header includes links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled "Customer Details". On the left, there is a form with fields for CUSTOMERID (Cus10), NAME (NoName Rai), PHONE (9876654338), and ADDRESSCODE (dropdown menu with options like Shyam Chowk). Below the form are "Insert" and "Cancel" buttons. On the right, there is a table listing customer details:

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
Edit Delete	Cus1	Girija Tamang	9811780224	Add1
Edit Delete	Cus2	Raja Tamang	9811111111	Add2
Edit Delete	Cus3	Pujan Parsai	9811000000	Add1
Edit Delete	Cus4	Puja Rai	9811022400	Add3
Edit Delete	Cus5	Sophiya Rana	9811346890	Add4
Edit Delete	Cus6	Lekhnath Katuwal	9812345643	Add5
Edit Delete	Cus7	Dipesh Rai	9811234890	Add6
Edit Delete	Cus8	Ram Limbu	9811234890	Add5
Edit Delete	Cus9	Tej Rai	9811780225	Add1

Figure 99: Screenshot of dropdown solution.



The screenshot shows a web browser window for a 'Customer' page. The URL is 'localhost:44354/Customer.aspx'. The page title is 'Customer Details'. On the left, there's a teal button labeled 'Add New Record'. The main area contains a table with columns: CUSTOMERID, NAME, PHONE, and ADDRESSCODE. The table has 10 rows. The last row, which is highlighted with a red border, represents a new record added after the 'dropdown solution'. The data for this new record is: CUSTOMERID 'Cus10', NAME 'NoName Rai', PHONE '9876654338', and ADDRESSCODE 'Add1'.

	CUSTOMERID	NAME	PHONE	ADDRESSCODE
<a href="#">Edit</a> <a href="#">Delete</a>	Cus1	Girija Tamang	9811780224	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus2	Raja Tamang	9811111111	Add2
<a href="#">Edit</a> <a href="#">Delete</a>	Cus3	Pujan Parsai	9811000000	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus4	Puja Rai	9811022400	Add3
<a href="#">Edit</a> <a href="#">Delete</a>	Cus5	Sophiya Rana	9811346890	Add4
<a href="#">Edit</a> <a href="#">Delete</a>	Cus6	Lekhnath Katuwal	9812345643	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus7	Dipesh Rai	9811234890	Add6
<a href="#">Edit</a> <a href="#">Delete</a>	Cus10	NoName Rai	9876654338	Add1
<a href="#">Edit</a> <a href="#">Delete</a>	Cus8	Ram Limbu	9811234890	Add5
<a href="#">Edit</a> <a href="#">Delete</a>	Cus9	Tej Rai	9811780225	Add1

Figure 100: Screenshot of new record after dropdown solution

#### 14.6.2 Error message showing for null value.

<b>Objective</b>	Testing done for entry a null value.
<b>Action</b>	Adding a null data record processed
<b>Expected Result</b>	Data required information should be displayed
<b>Actual Result</b>	Displayed nothing
<b>Conclusion</b>	Test Failure

The screenshot shows a web browser window with the title 'Restaurant Details'. The URL is 'localhost:44354/restaurant.aspx'. The page has a header with 'GoodFOOD' and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled 'Restaurant Details' and contains a form for adding a new restaurant. The form fields are 'RESTURANTCODE:' (with an empty input field), 'RESUTRANTNAME:' (with an empty input field), and 'RESTURANTADDRESS:' (with an empty input field). Below the form are two buttons: 'Insert' (green outline) and 'Cancel' (red outline). A red box highlights the 'Insert' button. To the right of the form is a table with columns 'RESTURANTCODE', 'RESUTRANTNAME', and 'RESTURANTADDRESS'. The table data is as follows:

	RESTURANTCODE	RESUTRANTNAME	RESTURANTADDRESS
Edit Delete	r1	Khaja Ghar	Dharan
Edit Delete	r2	Hamro Khaja Ghar	Dharan
Edit Delete	r3	Good Food	Itahari
Edit Delete	r4	Food House	Dharan
Edit Delete	r5	Ninja Dinner	Tarahara
Edit Delete	r6	Chill Ithaa	Itahari
Edit Delete	r7	Momo Ghar	Dharan
Edit Delete	r8	Hill Cafe	Tarahara
Edit Delete	r9	Low Light	Dharan
Edit Delete	r10	Pahuna	Itahari
Edit Delete	r11	Galaxy Cafe	Itahari
Edit Delete	r12	Chill House	Dharan

Figure 101: Insert Button clicked state on empty data.

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When insert button is clicked it shows the shows error like given below:

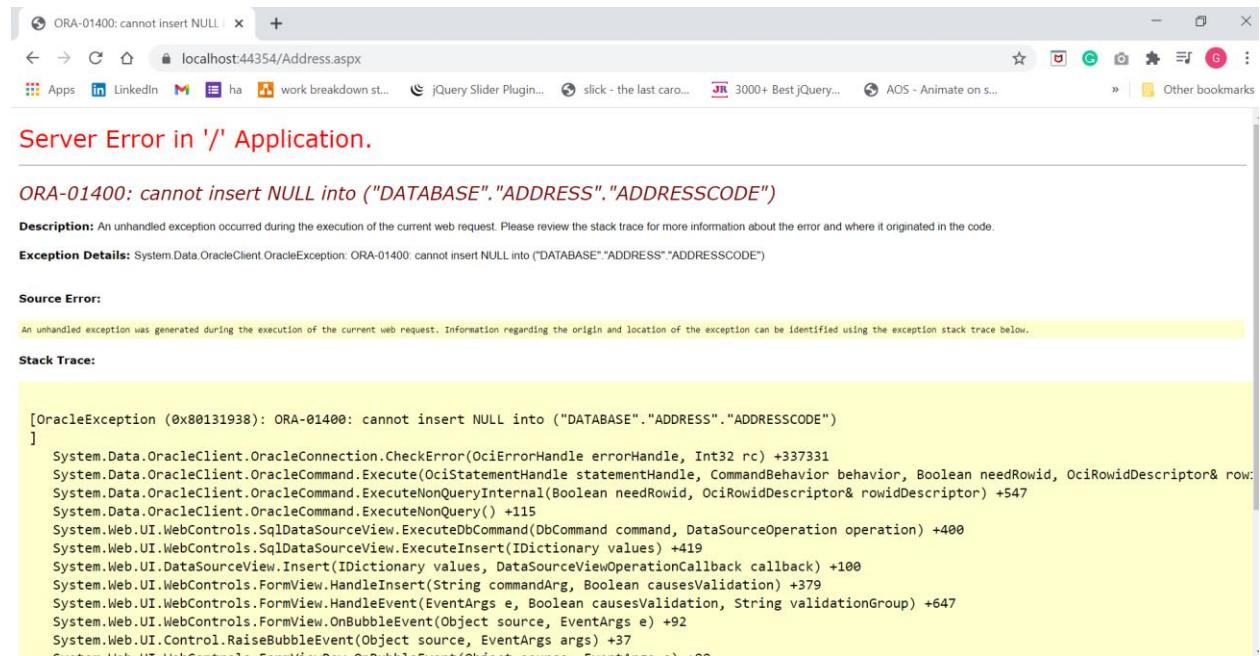


Figure 102: Screenshot of error occurred during insert button clicked.

To solve this problem, I added validators in the entry code with suitable error messages.

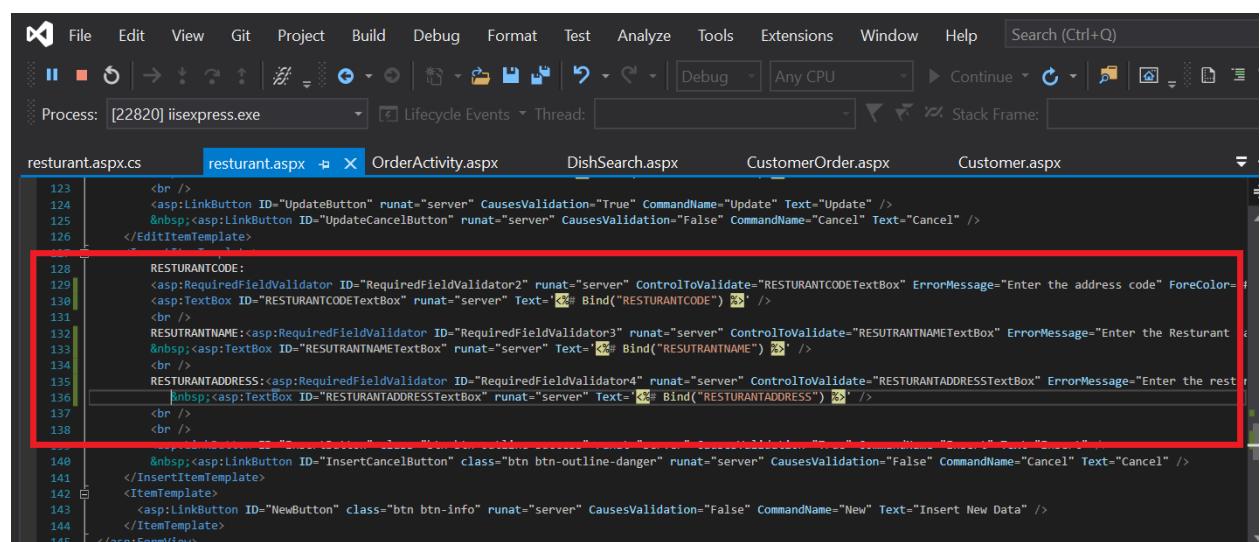


Figure 103: Adding validators for error handling.

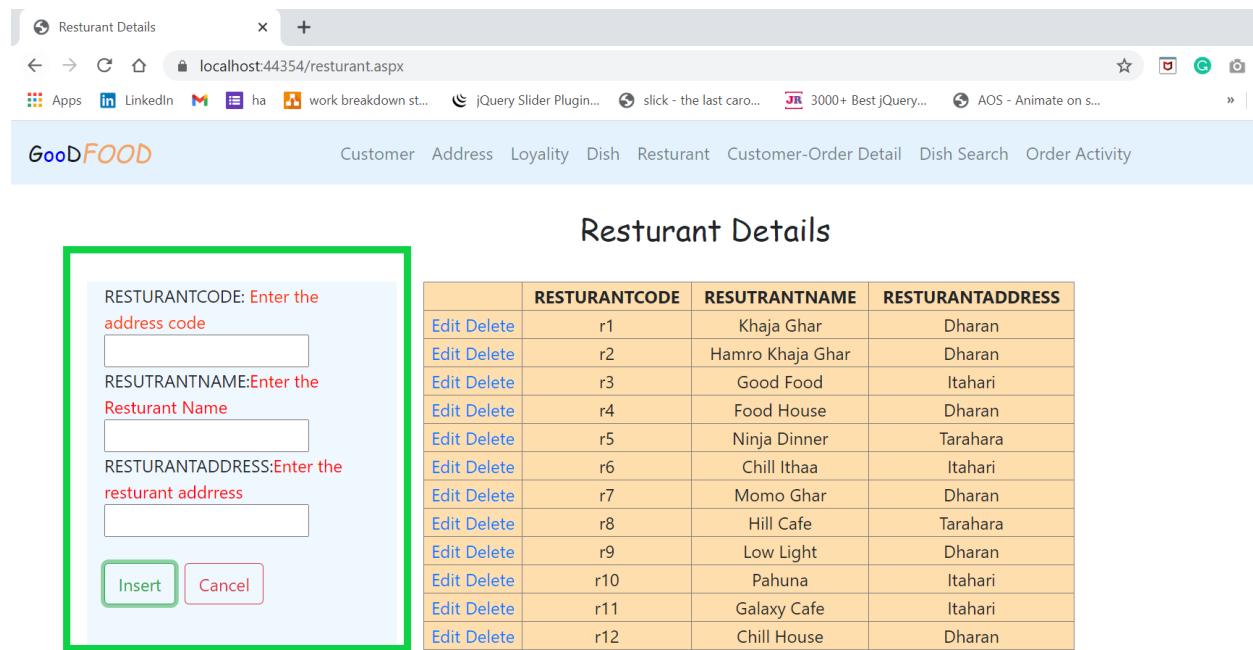


Figure 104: Screenshot after adding validators.

## 14.7 Complex form testing.

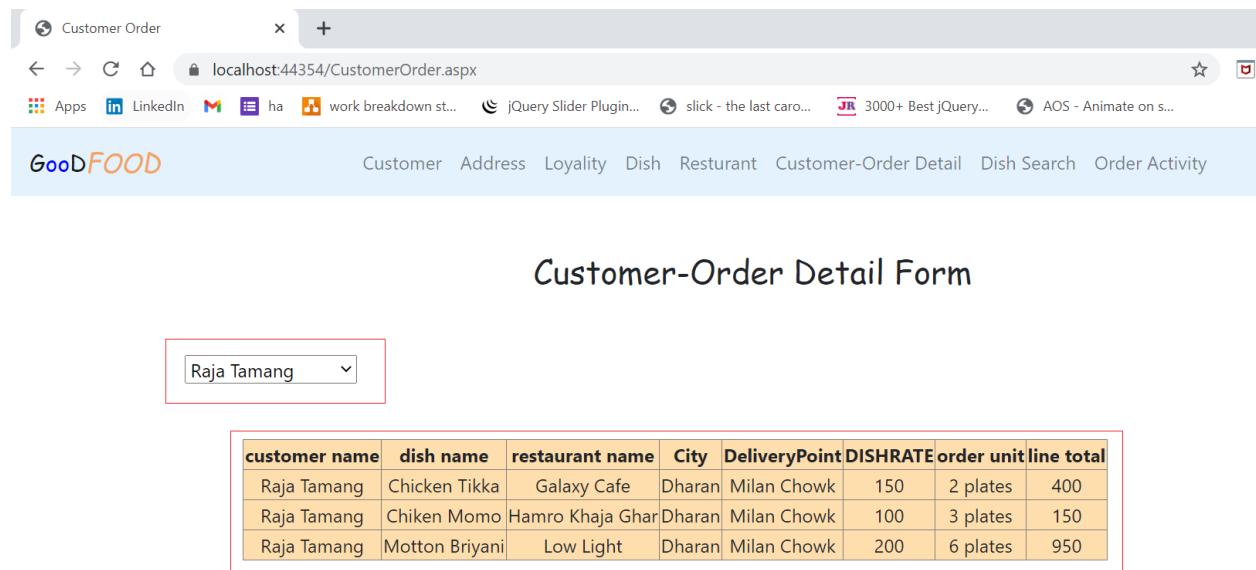
### 14.7.1 Testing Customer-Order Detail Form

<b>Objective</b>	Test for proper working of change in record from dropdown input.
<b>Action</b>	Change value from dropdown.
<b>Expected Result</b>	Records should be changed.
<b>Actual Result</b>	Records changed
<b>Conclusion</b>	Test Successful

customer name	dish name	restaurant name	City	DeliveryPoint	DISHRATE	order unit	line total
Girija Tamang	Chiken Momo	Khaja Ghar	Dharan	Shyam Chowk	100	2 plates	400
Girija Tamang	Chiken Momo	Khaja Ghar	Dharan	Shyam Chowk	100	2 plates	400
Girija Tamang	Noodles	Khaja Ghar	Dharan	Shyam Chowk	50	2 plates	400
Girija Tamang	Noodles	Khaja Ghar	Dharan	Shyam Chowk	50	2 plates	400
Girija Tamang	Kadai paneer	Momo Ghar	Dharan	Shyam Chowk	200	3 rolls	150
Girija Tamang	Kadai paneer	Momo Ghar	Dharan	Shyam Chowk	200	3 rolls	150
Girija Tamang	Pizza	Momo Ghar	Dharan	Shyam Chowk	100	3 rolls	150
Girija Tamang	Pizza	Momo Ghar	Dharan	Shyam Chowk	100	3 rolls	150

Figure 105: Customer-order Detail form before Customer change.

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The screenshot shows a web application titled "Customer Order" running on "localhost:44354/CustomerOrder.aspx". The header includes a logo for "GoodFOOD" and navigation links for Customer, Address, Loyalty, Dish, Restaurant, Customer-Order Detail, Dish Search, and Order Activity. The main content area is titled "Customer-Order Detail Form". A dropdown menu is open, showing "Raja Tamang" as the selected option. Below it is a table with the following data:

customer name	dish name	restaurant name	City	DeliveryPoint	DISHRATE	order unit	line total
Raja Tamang	Chicken Tikka	Galaxy Cafe	Dharan	Milan Chowk	150	2 plates	400
Raja Tamang	Chiken Momo	Hamro Khaja Ghar	Dharan	Milan Chowk	100	3 plates	150
Raja Tamang	Motton Briyani	Low Light	Dharan	Milan Chowk	200	6 plates	950

Figure 106: Customer-order Detail form before Customer change.

### 14.7.2 Order Activity Form

<b>Objective</b>	Test for proper working of change in record from dropdown input.
<b>Action</b>	Change value from dropdown.
<b>Expected Result</b>	Records should be changed.
<b>Actual Result</b>	Records changed
<b>Conclusion</b>	Test Successful

Order Activity Form

RESTURANTCODE	RESUTRANTNAME	number of dishes ordered	TO_CHAR("DATE",'MON')
r1	Khaja Ghar	1	Jan
r4	Food House	1	Jan
r3	Good Food	1	Jan
r5	Ninja Dinner	1	Jan

Figure 107: Order Activity Form.

### 14.7.3 Dish Search Form

<b>Objective</b>	Test for proper working of change in record from dropdown input.
<b>Action</b>	Change value from dropdown.
<b>Expected Result</b>	Records should be changed.
<b>Actual Result</b>	Records changed
<b>Conclusion</b>	Test Successful

Dish Search Form

FoodCode	DISHNAME	LOCALNAME	DISHRATE	RESTURANTCODE	RESUTRANTNAME
f1	Chiken Momo	Momo	100	r1	Khaja Ghar
f1	Chiken Momo	Momo	100	r2	Hamro Khaja Ghar

Figure 108 :Dish Search form before Dish change.

Dish Search Form

FoodCode	DISHNAME	LOCALNAME	DISHRATE	RESTURANTCODE	RESUTRANTNAME
f2	Noodles	chaumin	50	r1	Khaja Ghar

Figure 109: Dish Search form after Dish change.

## 15. Complex form Query.

### 15.1 Customer-Order Detail Form

```
SELECT c.NAME AS "customer name",
d.DishName as "dish name", r.ResutrantName as "restaurant name",
a.City as "City", a.DeliveryPoint as "DeliveryPoint", d.DishRate, b.OrderUnit as "order
unit", b.LineTotal as "line total"
from Receipt b
join OrderInfo o on o.OrderNumber=b.OrderNumber
join Customer c on c.CustomerId=o.CustomerId
join Address a on a.AddressCode=c.AddressCode
join RestaurantFood rd on rd.ResturantCode= b.RestaurantCode
join Restaurant r on r.RestaurantCode=rd.RestaurantCode
join RestaurantFood rd on rd.ResturantCode= r.RestaurantCode
join Food d on d.DishCode=rd.DishCode
AND (C.CustomerID = :C)
```

### 15.2 Dish Search Form

```
select d.DishCode as "FoodCode", d.DishName, d.LocalName, d.DishRate,
rd.RestaurantCode,
r.ResutrantName from Food d, RestaurantFood rd, Restaurant r WHERE rd.DishCode=
d.DishCode AND r.RestaurantCode = rd.RestaurantCode
AND (D.DishCode = :D)
```

### 15.3 Order Activity Form

```
select * from (select b.restaurantCode, r.resutrantname, count(b.dishcode) as "number of
dishes orderd", to_char("Date", 'Mon')  from receipt b
join restaurantfood rd on rd.restaurantcode = b.restaurantcode and rd.dishcode=b.dishcode
join restaurant r on r.restaurantcode= rd.restaurantcode
join food d on d.dishcode=rd.dishcode
join receipt re on re.dishcode = d.dishcode
join orderinfo oi on oi.ordernumber = re.ordernumber
join bill b on b.sn = oi.sn
where to_char("Date", 'Mon') = :mont
group by b.restaurantcode, r.resutrantname, to_char("Date", 'Mon')
order by count(b.dishcode) desc ) where rownum <=5
```

## 16. Further Discussion

I was able to improve my web creation, database, and C# programming skills while working on this project. The implementation of a database system in a web environment was a completely new experience in the database module, and it was both challenging and enjoyable, resulting in a fruitful experience.

Creating an entity relationship diagram from a basic case study and two examples of normalization was a true test of one's problem-solving abilities. While working on the project, I found it to be both challenging and rewarding. Rather than technological or computational errors, the most common errors found were syntax errors caused by the wrong insertion or implementation of the code.

There were a lot of mistakes done while developing this project. All the errors were found and corrected with the aid of the teacher, conversations with friends, and internet analysis. The project was not easy to complete, but it provided me with an opportunity to learn new techniques and resources. The tools used for developing this coursework are as follows:

### 1 SQL datamodeler

This tool was used data modeler to make tables and to generate script and final ERD of the database.

### 2. SQL Developer

This tool was used to executing the script generated from data modeler and to execute various other SQL commands to manipulate tables during the development period of this project.

### 3. Visual Studio 2019

This is the main frontend tool used. It provided easy access to various tools which made much easier in designing the application.

#### 4. Oracle Database

The oracle server was used as database system for storing and manipulating the data of the project. The required user was created on the oracle database for this coursework.

#### 5. Draw.io

The entity relationship diagram for the initial case study was created using this tool.

Web application creation using the C# programming language on the.NET platform is at the top of the list of techniques learned during the coursework. I learned how to link an Oracle database to a web application, how to use databinding to show fetched data from the database in a grid view, and I gained a good understanding and much-needed experience creating a CRUD application with the formView control.

## 17 References

GEEKSFORGEEKs, 2019. SQL | *WITH clause.* [Online] Available at: <https://www.geeksforgeeks.org/sql-with-clause/?ref=lbp> [Accessed 05 March 2021].

W3schools, 2019. SQL *Syntax.* [Online] Available at: <https://www.w3schools.com/sql/> [Accessed 03 March 2021].