CC5051NA

Introduction to Information System

50% Individual Coursework

2020-2021 Autumn

Student Name: Samuel Sherpa

London Met ID: 19031860

College ID: NP05CP4A190148

Assignment Due Date: 2020/12/21

Assignment Submission Date:2020/12/21

I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a marks of zero will be awarded.

Table of Contents

Introduction of the College

Figure 1 Islington College KTM

Islington college was selected to create a record system for this coursework. Islington college is situated in Kamal Pokhari, Kathmandu. It mainly focuses to provide high quality of education to people living in KTM, but the ones outside valley can also study the same education in other ING colleges. Islington aims to deliver an exceptional overseas degree programmes through partnership with established international universities and institutions from UK and Singapore. Islington has been making a significant contribution to society-locally, nationally and internationally. (Islington College, 2020)

Islington college is a modern and practical education-based college dedicated to excellent academic performance and student experience. Established in 1996, the college has had nearly a couple of decades long experience in providing quality and industry-ready IT and Business. Islington is making an extensive approach in making an access for affordable higher education and providing learning experience beyond textbooks and classrooms. (Islington College, 2020)

College vision is to develop industry-ready graduates and be the most recognized and prestigious private college in Nepal. For events, Islington host different friendly competitions like hackathons, showcase, photography, Nepali culture fashion, sports week and many more which helps students to excel in their field of talent and interest. Aim for Islington is to make industry ready graduates and future entrepreneurs through high level education. Its objective is to build a generation to take Nepal and compete in international business and IT field. (https://study.com/academy/lesson/what-is-an-entity-in-a-database, 2020)

Current Business Activities and Operation.

Islington provides IT (information technology) and Business degree. In IT field, it includes masters in Applied Security and bachelors in Multimedia technology, Computing and computer network and IT security. Similarly, in terms of Business degree for masters it has MBA, and for bachelors it has BBA (international Business), BBA (finance) with international business or Marketing and finally BBA(Marketing) with international business. (Islington College, 2020)

There blocks, 10 computer labs, 3 lecture halls, 3 cafeteria , 4 seminar room, 8 tutorial room, 2 audio video studio and 2 learning zones in the college.

The college collects the records of student and instructors using computers with different applications like excel and MS Office services. To provide effective and smooth education to students, classes are run in different classes on different time for different course and module students. For e.g. programming module is taught by a instructor in class ‘Ilam’ to students of C3 and C4 at the same time in another class ‘Dhankuta’, hardware might by taught by a instructor of a particular student group. And when classes ends, then they will be exchanging classes to study another modules. This is how classes run. (Islington College, 2020)

For every course there is a course leader and for every module there is a module head. They are responsible for the management and teaching of the modules to different student group. One instructor might teach one module to many students and that module might be taught by other instructors too to different students. Courses are divided into specifications and again into modules. Students can choose one course and dive into one specification. And students then have to study and do coursework of the modules of that particular specification. (Islington College, 2020)

Business Rules

There are different rules of Islington for different topics. A student can join in only one course among many courses, and an instructor can also be in only one course. Again, he can study only one specifications of that course. Again, he must study only the modules of his specification. Module must be taught in a particular class. A module can be taught by many instructor, but an instructor can teach only one module. Student can take a book from library but one at a time and also only if he has a college id card. Student must carry his/her identity card every time in college compound. Student must submit his/her coursework before deadline and must give re exam if he/she fails in it. The student who scores the highest mark can get a scholarship. Student must pay the course fee as it was mentioned before admission, there's no any discount scheme on any scholarship, but some fee concession is done during some pandemic. Once an student starts studying in one course for one month, he cannot change the course, neither he gets refund if he decides to leave. College might provide transportation facility for a student.

Identification of Entities and Attributes.

Entities

An entity is an object that exists. It doesn't have to do anything; it just has to exist. In database administration, an entity can be a single thing, person, place, or object. Data can be stored about such entities. A design tool that allows database administrators to view the relationships between several entities is called the entity relationship diagram (ERD).

In database administration, only those things about which data will be captured or stored is considered an entity. If we aren't going to capture data about something, there's no point in creating an entity in a database. If we are creating a database college students then the entities can be their age, address, name, phone number etc.

(https://study.com/academy/lesson/what-is-an-entity-in-a-database, 2020)

Attributes

An attribute defines the information about the entity that needs to be stored. If the entity is an Student, attributes could include name, student ID, college join date, and address. An entity will have zero or more attributes, and each of those attributes apply only to that entity. For example, the student ID of 123456 belongs to that student entity alone.

Attributes also have further refinements, such as domain and key. The domain of an entity describes the possible values of attributes. In the entity, each attribute will have only one value, which could be blank or it could be a number, text, a date, or a time. Here are examples of entity types and domains:

Name: Samuel Sherpa

Student ID: 123456

College join date: 12/12/2020

Address: Damak – 5, 2020.

(https://study.com/academy/lesson/what-is-an-entity-in-a-database, 2020)

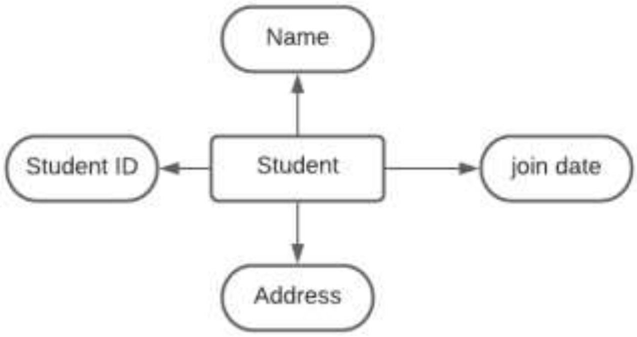


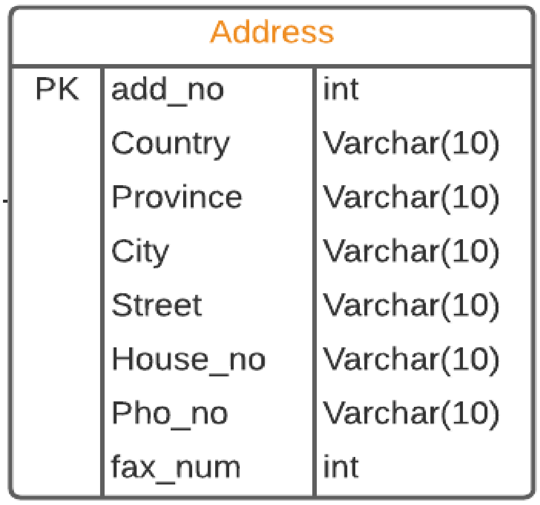
Figure 2 Entity Attribute relationship

Entities and Attributes used for the coursework:

In total there are ten entities and many attributes of those entities in initial erd. The name of those entities and their attribute are as follows:

1) Entity: Address

Attributes: add_no (PK), Country, Province, City, Street, House_no, Pho_no, fax_no

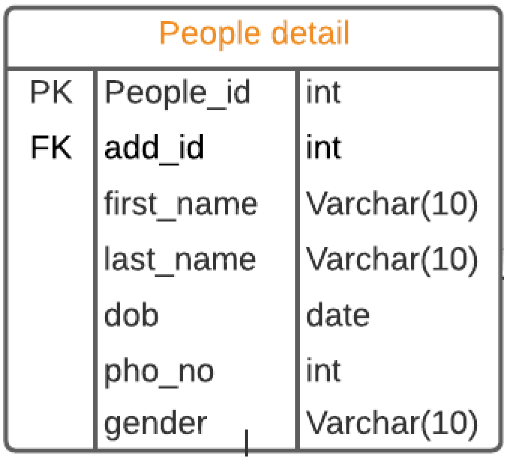


Address		
PK	add_no	int
	Country	Varchar(10)
	Province	Varchar(10)
	City	Varchar(10)
	Street	Varchar(10)
	House_no	Varchar(10)
	Pho_no	Varchar(10)
	fax_num	int

Figure 3 Address

2) Entity: People

Attributes: ppl_id(PK), add_id (FK), first_name, last_name, dob, pho_no, gender

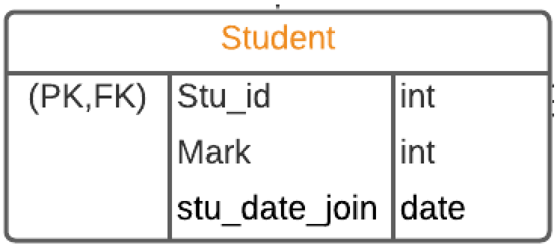


People detail		
PK	People_id	int
FK	add_id	int
	first_name	Varchar(10)
	last_name	Varchar(10)
	dob	date
	pho_no	int
	gender	Varchar(10)

Figure 4 People detail.

3) Entity: Student

Attributes: Stu_id (PK, FK), mark, stu_date_join

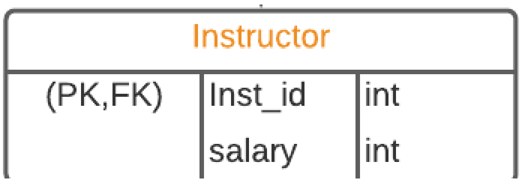


Student		
(PK,FK)	Stu_id	int
	Mark	int
	stu_date_join	date

Figure 5 Student

4) Entity: Instructor

Attributes: inst_id (PK,FK), salary

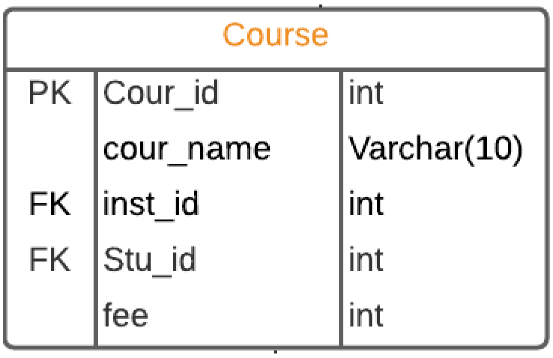


Instructor		
(PK,FK)	Inst_id	int
	salary	int

Figure 6 Instructor.

5) Entity: Course

Attributes: cour_id (PK,FK), cour_name, inst_id (FK), Stu_id (PK,FK), fee



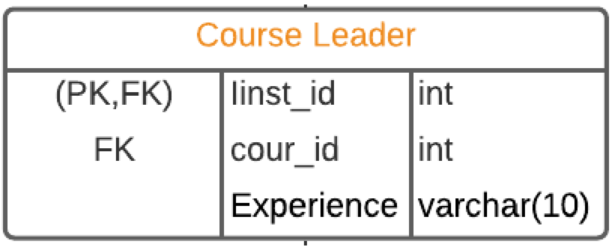
Course

PK	Cour_id	int
	cour_name	Varchar(10)
FK	inst_id	int
FK	Stu_id	int
	fee	int

Figure 7 Course

6) Entity: Course_Leader

Attributes: inst_id (Pk,FK), cour_id (PK,FK) , experience



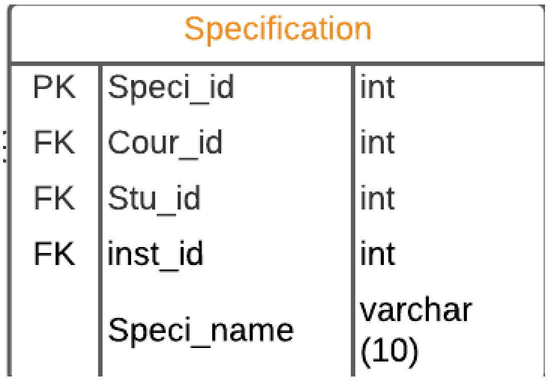
Course Leader

(PK,FK)	Iinst_id	int
FK	cour_id	int
	Experience	varchar(10)

Figure 8 Course leader

7) Entity: Specification

Attributes: Speci_id (PK), cour_id (FK), inst_id(FK), stu_id (PK,FK), speci_name



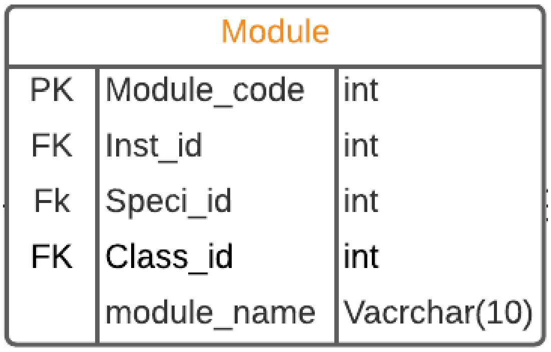
Specification

PK	Speci_id	int
FK	Cour_id	int
FK	Stu_id	int
FK	inst_id	int
	Speci_name	varchar (10)

Figure 9 Specification

8) Entity: Module

Attributes: module_id(PK), module_name , inst_id (PK,FK), speci_id (FK), class_id (FK)

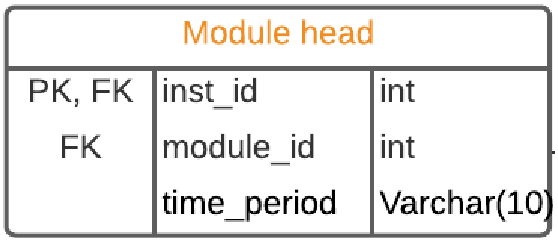


Module		
PK	Module_code	int
FK	Inst_id	int
Fk	Speci_id	int
FK	Class_id	int
	module_name	Vacrchar(10)

Figure 10Module

9) Entity: Module_head

Attributes: inst_id (PK, FK), module_id (PK,FK), time_period

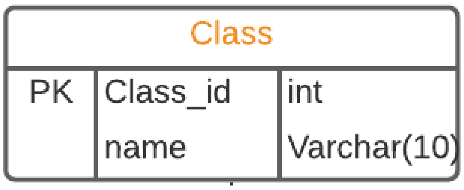


Module head		
PK, FK	inst_id	int
FK	module_id	int
	time_period	Varchar(10)

Figure 11 Module head

10) Entity: Class

Attributes: class_id (PK), class_name



Class		
PK	Class_id	int
	name	Varchar(10)

Figure 12 Class.

ERD

Entity Relationship Diagram, also known as ERD, ER Diagram or ER model, is a type of structural diagram for use in database design. An ERD contains different symbols and connectors that visualize two important information: The major entities within the system scope, and the inter-relationships among these entities. Since it is the relationship between entities so it’s called entity relationship diagram. (visual diagram, 2020)

Since I have entities in this database, to give a broad eagle view to reader of the relationship and flow of data in the database I have included formed entity relation diagram. You can see it below.

Initial ERD

The problems in the initial erd:

i) There’s a formation of fan trap in the relation between course Student and Course Specification.

ii) Also the repeating group in address must be maintained.

iii) Data redundancy must be managed

iv) Data inconsistency must be avoided.

v) Connection between different table must be shown , for that we must built different table by pulling it our from an existing table like : from module , module details table must be made.

INITIAL ERD DIAGRAM

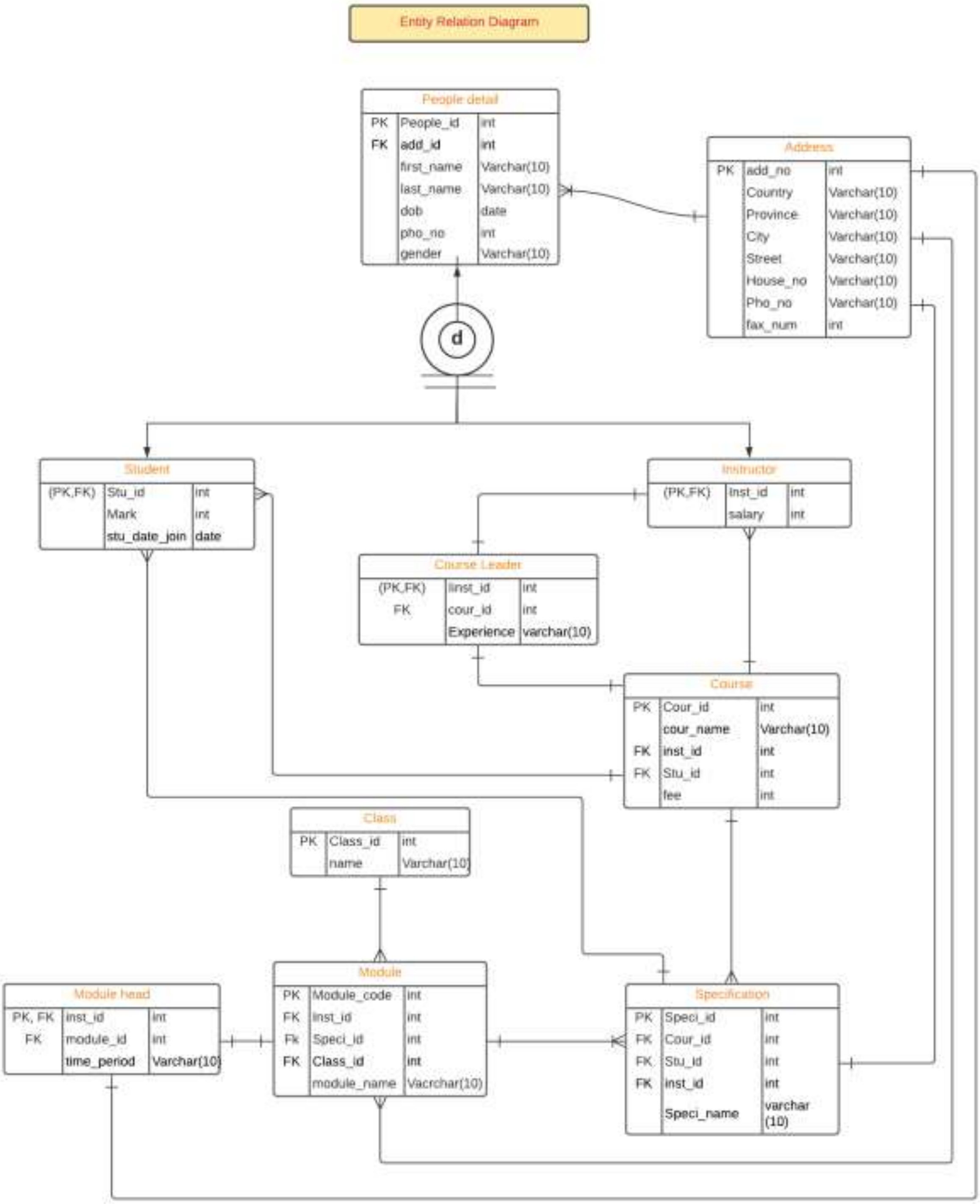


Figure 13 Initial ERD

2. Normalization

Normalization is the process of organizing the data in the database. Normalization is used to minimize the redundancy from a relation or set of relations. It is also used to eliminate the undesirable characteristics like Insertion, Update and Deletion Anomalies. Normalization divides the larger table into the smaller table and links them using relationship. The normal form is used to reduce redundancy from the database table.

Assumtions:

There is nothing extra to assume to form relationship between different entities and attributes. In this database, a person can have one address with only one or no phone number to that address and the fax for the address can be empty or have a fax number. A module can be taught by many instructor and a instructor can teach many modules. Since fax and phone have been pulled out from parent table address since it had chance of repeating data entry, but now on entry of data, it doesn't have any repeating data. A module must be taught in a particular class, but a class can used for many modules to be taught.

UNF

Scenario: In unf, all the entity tables along with their repeating group have been written. Here UNF is started from people table, and ended in class. Inside () bracket you can see the parent table and inside {} of () they are the children table and again inside that child table it can have more child table and so on.

People (<u>ppl_id</u>, first_name, last_name, dob, pho_no, gender, {add_no, country, province, city, street, house_no, {pho_no}, {fax_no}}, {mark, stu_date_join}, {salary,{experience}, {cour_id, cour_name,fee, {speci_id, , speci_name, {module_code ,module_name,{time_period},{ class_id, class_name } } } } } })

1NF

Scenario: The tables from UNF must be written down clearly so as to view primary, foreign and composite key with which we can normalize it further into 3NF.

people (<u>ppl_id</u>,first_name,last_name,dob,pho_no,gender, addid*)

add (<u>add_no</u>, country, province, city, street, house_no)

phone (<u>pho_no</u>, addid*)

fax {fax_no, addid*)

Student (stud_id*, stu_date_join, mark)

Instructor (inst_id*, salary)

Course_Leader (inst_id* , course_id*, experience)

Course (course_id , cour_name, stud_id*,inst_id *, fee)

Specification (speci_id, speci_name, cour_id*, stud_id*,inst_id*)

Module (module_id, module_name , inst_id*, speci_id* ,class_id*)

Module_head (inst_id*, module_id*, time_period)

Class (class_id , class_name)

2NF:

Scenario: The tables in 1NF containing composite primary keys like: Course_leader, Course, Specification, module_leader, Module, module_head must be normalized by removing partial dependencies.

From above we can say that in; people, address, phone, fax, instructor, student, course_leader and

class contain no any composite primary key hence, they do not contain any partial dependency.

For Course_Leader:(inst_id* , course_id*, experience)

inst_id -- >

course_id -->

inst_id, course_id --> experience

Course_Leader (inst_id*, course_id*, experience)

For Course: Course (course_id , cour_name, stud_id*,inst_id *, fee)

course_id --> cour_name, fee

stud_id -->

inst_id -->

Course (course_id, cour_name, fee)

Course_details (course_id, stud_id*, inst_id*)

For Specification: (speci_id, speci_name, cour_id*, stud_id*, inst_id*)

speci_id --> speci_name

stud_id -- >

cour_id -->

Specification (speci_id, speci_name)

Specification_details (speci_id, stud_id*,cour_id*)

Specification_instructor (instructor_id*,specification_id*)

For Module : (module_id, module_name , inst_id*, speci_id* ,class_id*)

module_id --> module_name, class_id

inst_id -->

speci_id -->

Module (module_id, module_name, class_id*)

Module_details (module_id, inst_id*, speci_id*)

Inst_module (module_id* , inst_id*)

For Module_head: (inst_id*, module_id*, time_period)

inst_id -->

module_id -->

inst_id, module_id -->time_period

Module_head (inst_id*, module_id*, time_period)

Hence the tables of 2NF are as follows:

people (ppl_id,first_name,last_name,dob,pho_no,gender, addid*)

add (add_no, country, province, city, street, house_no)

phone (pho_no, addid*)

fax {fax_no, addid*)

Student (stud_id*, stu_date_join, mark)

Instructor (inst_id*, salary)

Course_Leader (inst_id*, course_id*, experience)

Course (course_id, cour_name, fee)

Course_details (course_id, stud_id*, inst_id*)

Specification (speci_id, speci_name)

Specification_details (speci_id, stud_id*,cour_id*)

Specification_instructor (Speci_id, inst_id*)

Module (module_id, module_name, class_id*)

Module_details (module_id, inst_id*, speci_id*)

Inst_module (module_id* , inst_id*)

Class (class_id , class_name)

Module_head (inst_id*, module_id*, time_period)

3NF

Scenario: From 2NF all the table are clear from having transitive dependencies. Here no entities are seen so have any data inconsistencies.

From above, it's clear that no any entity contains any transitive dependency, almost more than half of the tables contain only one non key attribute. Hence they are already on 3NF people (ppl_id,first_name,last_name,dob,pho_no,gender, addid*)

add (add_no, country, province, city, street, house_no)

phone (pho_no, addid*)

fax {fax_no, addid*)

Student (stud_id*, stu_date_join, mark)

Instructor (inst_id*, salary)

Course_Leader (inst_id*, course_id*, experience)

Course (course_id, cour_name, fee)

Course_details (course_id, stud_id*, inst_id*)

Specification (speci_id, speci_name)

Specification_details (speci_id, stud_id*,cour_id*)

Specification_instructor (speci_id*, inst_id*)

Module (module_id, module_name, class_id*)

Module_details (module_id, inst_id*, speci_id*)

Inst_module (module_id* , inst_id*)

Class (class_id , class_name)

Module_head (inst_id*, module_id*, time_period)

Final ERD

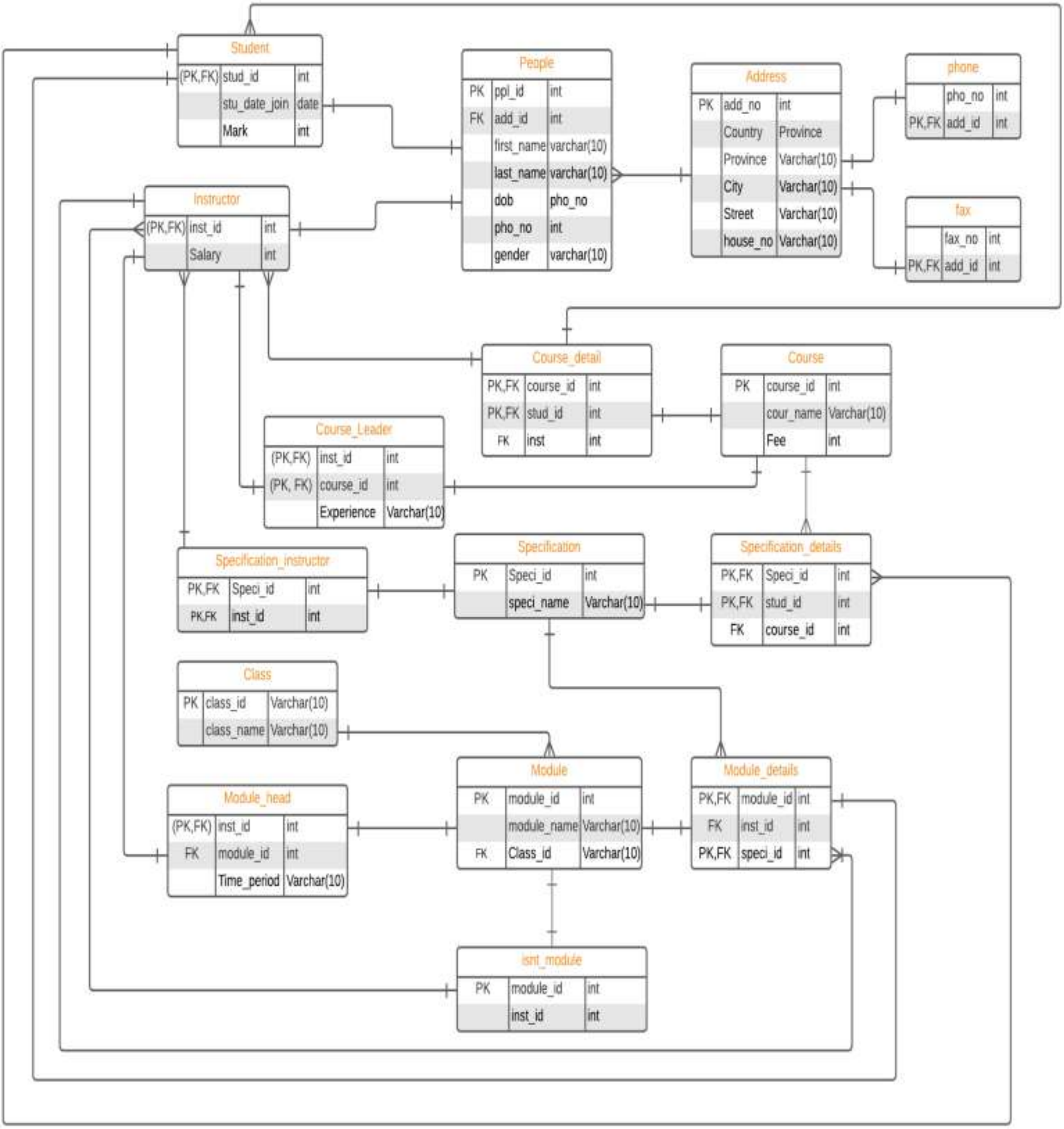


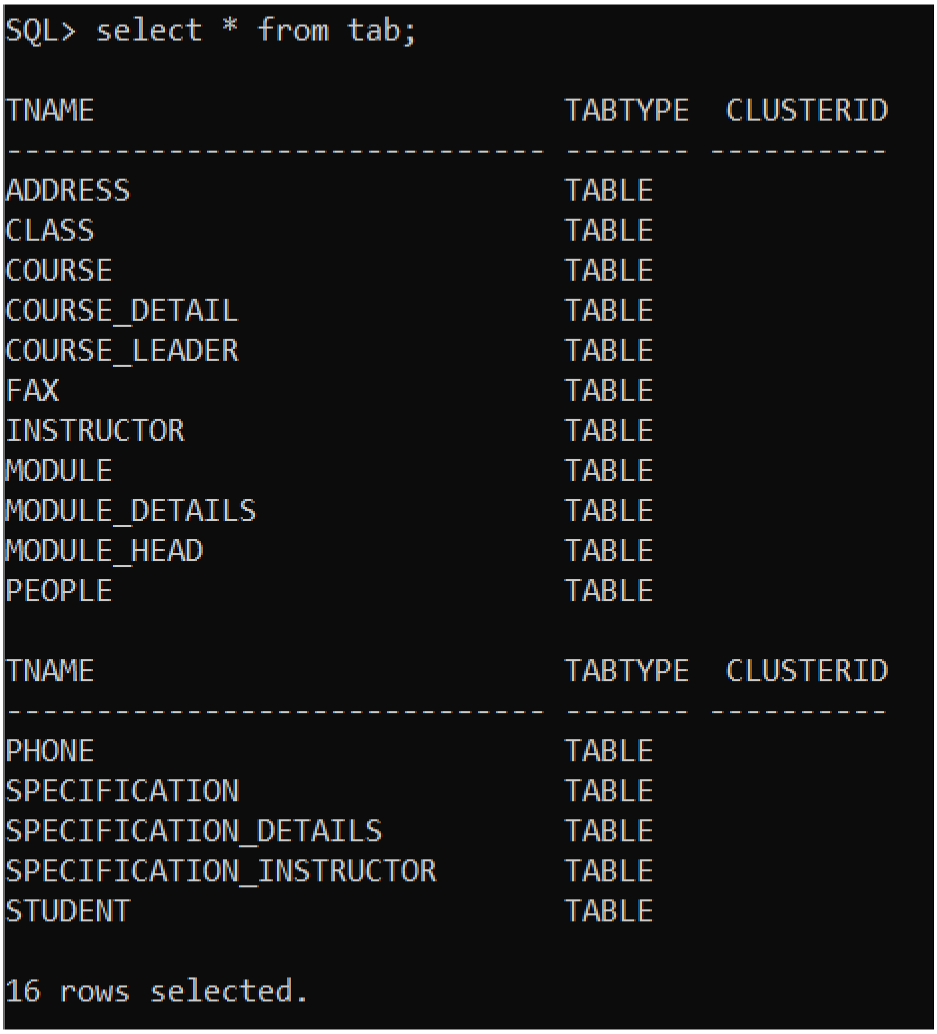
Figure 14 Final ERD

PROBLEMS MINIMIZED IN THE FINAL ERD:

Fan trap have been removed. No more repeating group can bee seen in the database. Any data inconsistencies have been removed. Now the database is clear, approachable and easy to read relationship between different tables.

3. Implementation

All together there are 17 table been built after normalization, which are:



```
SQL> select * from tab;

TNAME                          TABTYPE  CLUSTERID
------------------------------ ------- ----------
ADDRESS                        TABLE
CLASS                          TABLE
COURSE                         TABLE
COURSE_DETAIL                  TABLE
COURSE_LEADER                  TABLE
FAX                            TABLE
INSTRUCTOR                     TABLE
MODULE                         TABLE
MODULE_DETAILS                 TABLE
MODULE_HEAD                    TABLE
PEOPLE                         TABLE

TNAME                          TABTYPE  CLUSTERID
------------------------------ ------- ----------
PHONE                          TABLE
SPECIFICATION                  TABLE
SPECIFICATION_DETAILS          TABLE
SPECIFICATION_INSTRUCTOR       TABLE
STUDENT                        TABLE

16 rows selected.
```

Figure 15 All the tables in Islington user

3.1 Address

create table Address(

add_no int,

country varchar(30),

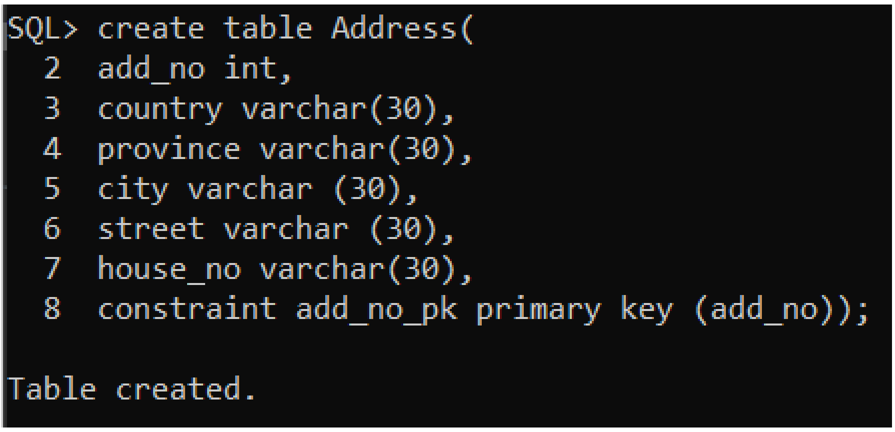
province varchar(30),

city varchar (30),

street varchar (30),

house_no varchar(30),

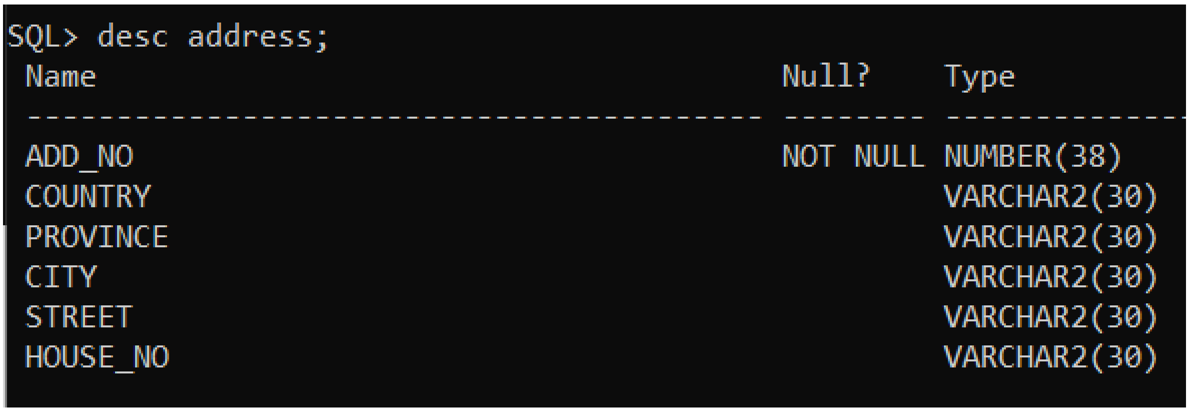
constraint add_no_pk primary key (add_no));



```
SQL> create table Address(
  2  add_no int,
  3  country varchar(30),
  4  province varchar(30),
  5  city varchar (30),
  6  street varchar (30),
  7  house_no varchar(30),
  8  constraint add_no_pk primary key (add_no));

Table created.
```

Figure 16 Table address created

Desc address;



```
SQL> desc address;
 Name                                      Null?    Type
 ----------------------------------------- -------- -------------
 ADD_NO                                    NOT NULL NUMBER(38)
 COUNTRY                                            VARCHAR2(30)
 PROVINCE                                           VARCHAR2(30)
 CITY                                               VARCHAR2(30)
 STREET                                             VARCHAR2(30)
 HOUSE_NO                                           VARCHAR2(30)
```

Figure 17 Address describe

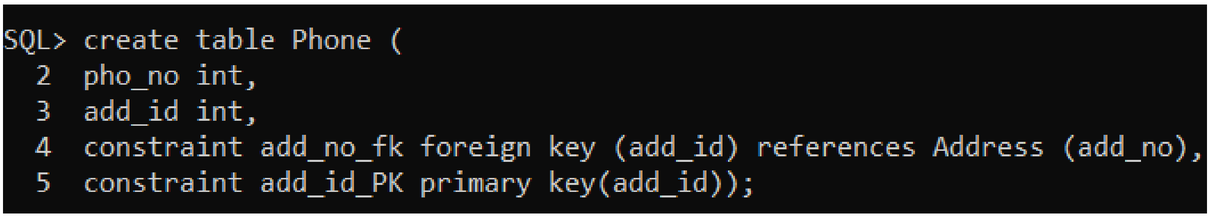
3.2 phone

Create table phone(

pho_no int,

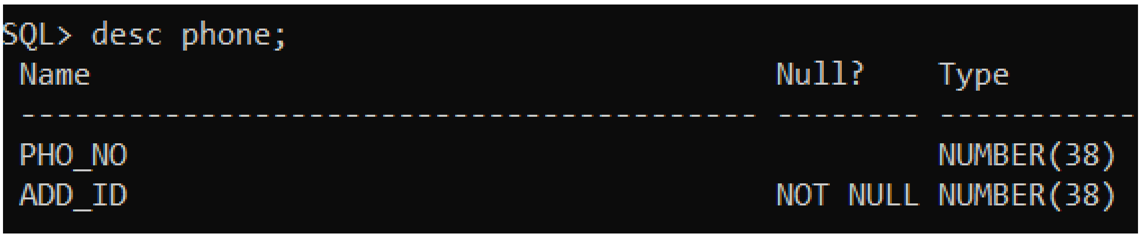
add_id int,

constraint add_no_fk foreign key (add_id) references Address (add_no), constraint add_id_pk primary key(add_id));



```
SQL> create table Phone (
  pho_no int,
  add_id int,
  constraint add_no_fk foreign key (add_id) references Address (add_no),
  constraint add_id_PK primary key(add_id));
```

Figure 18 Table phone created.

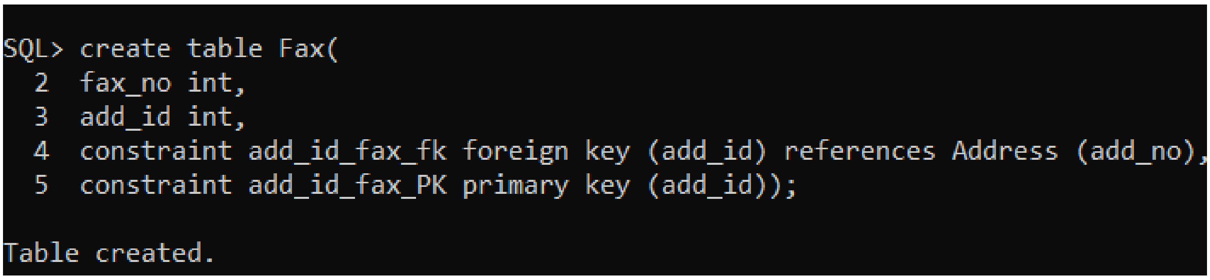


```
SQL> desc phone;
 Name                                      Null?    Type
 ----------------------------------------- -------- -----------
 PHO_NO                                             NUMBER(38)
 ADD_ID                                    NOT NULL NUMBER(38)
```

Figure 19 Phone described

3.3 Fax

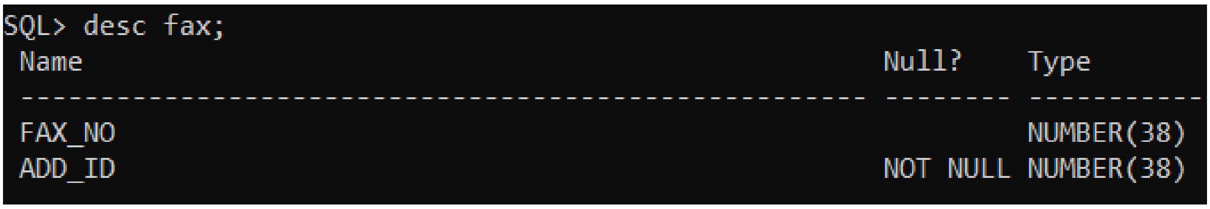
Create table fax(fax_no int,add_id int, constraint add_id_fax_fk foreign key (add_id) references address (add_no), constraint add_id_fax_PK primary key (add_id));



```
SQL> create table Fax(
  fax_no int,
  add_id int,
  constraint add_id_fax_fk foreign key (add_id) references Address (add_no),
  constraint add_id_fax_PK primary key (add_id));

Table created.
```

Figure 20 creating fax

Desc fax;

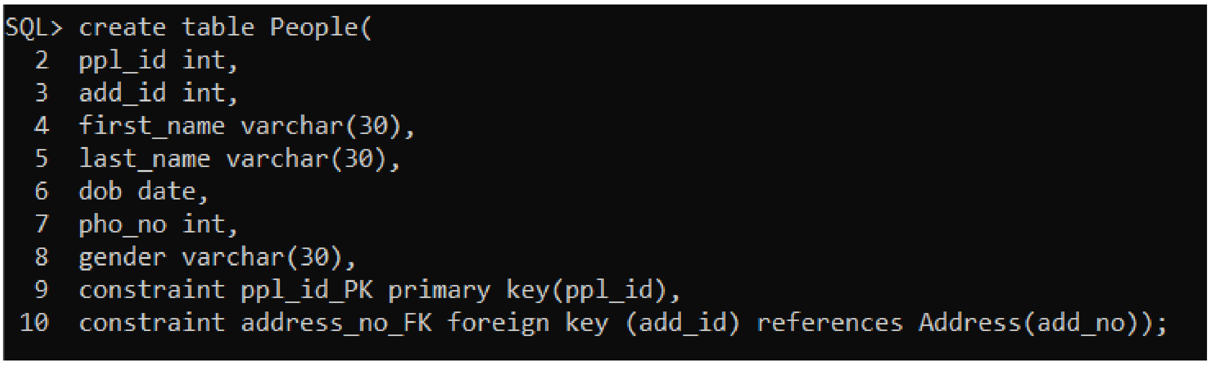


```
SQL> desc fax;
 Name                                                    Null?    Type
 ------------------------------------------------------- -------- -----------
 FAX_NO                                                           NUMBER(38)
 ADD_ID                                                  NOT NULL NUMBER(38)
```

Figure 21describing fax

3.4 people

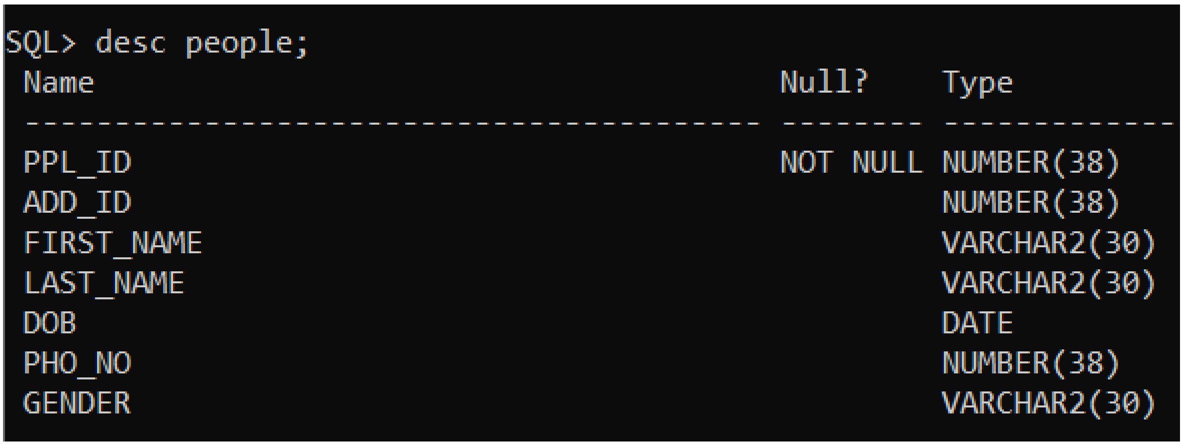
Create table people (ppl_id int, add_id int, first_name varchar(30), last_name varchar(30), dob date, pho_no int, gender varchar(30), constraint ppl_id_PK primary key (ppl_id), Constraint address_no_FK foreign key (add_id) references Address(add_no));



```
SQL> create table People(
ppl_id int,
add_id int,
first_name varchar(30),
last_name varchar(30),
dob date,
pho_no int,
gender varchar(30),
constraint ppl_id_PK primary key(ppl_id),
constraint address_no_FK foreign key (add_id) references Address(add_no));
```

Figure 22 Table people created.

Desc people;

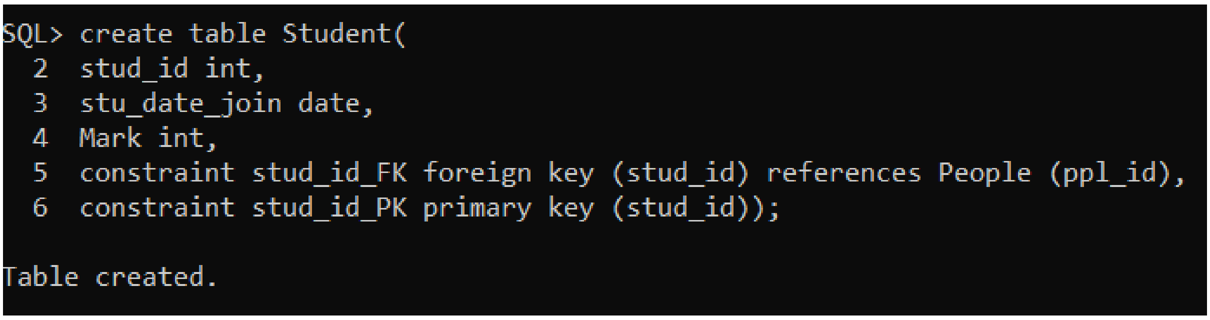


```
SQL> desc people;
 Name                                      Null?    Type
 ----------------------------------------- -------- -------------
 PPL_ID                                    NOT NULL NUMBER(38)
 ADD_ID                                             NUMBER(38)
 FIRST_NAME                                         VARCHAR2(30)
 LAST_NAME                                          VARCHAR2(30)
 DOB                                                DATE
 PHO_NO                                             NUMBER(38)
 GENDER                                             VARCHAR2(30)
```

Figure 23desc people.

3.5 Student

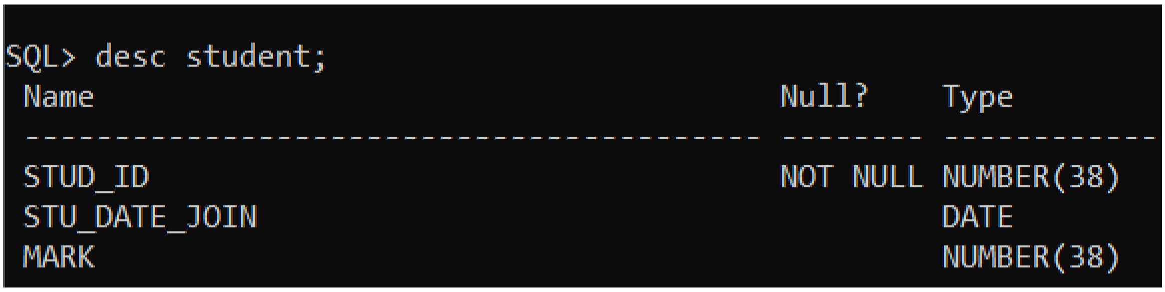
Create table student(stud_id int, stu_date_join date, mark int,constraint stud_id_fk foreign key (stud_id) references people (ppl_id), constraint stu_id_PK primary key (stud_id));



```
SQL> create table Student(
stud_id int,
stu_date_join date,
Mark int,
constraint stud_id_FK foreign key (stud_id) references People (ppl_id),
constraint stud_id_PK primary key (stud_id));

Table created.
```

Figure 24Student table created

Desc student;

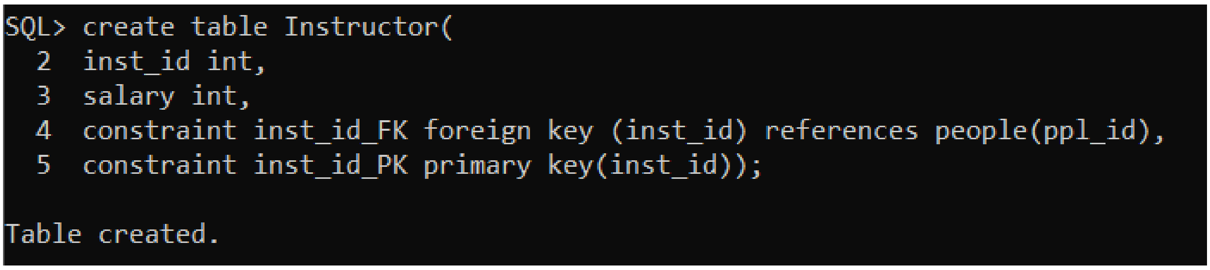


```
SQL> desc student;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 STUD_ID                                   NOT NULL NUMBER(38)
 STU_DATE_JOIN                                      DATE
 MARK                                               NUMBER(38)
```

Figure 25 desc student

3.6 Instructor

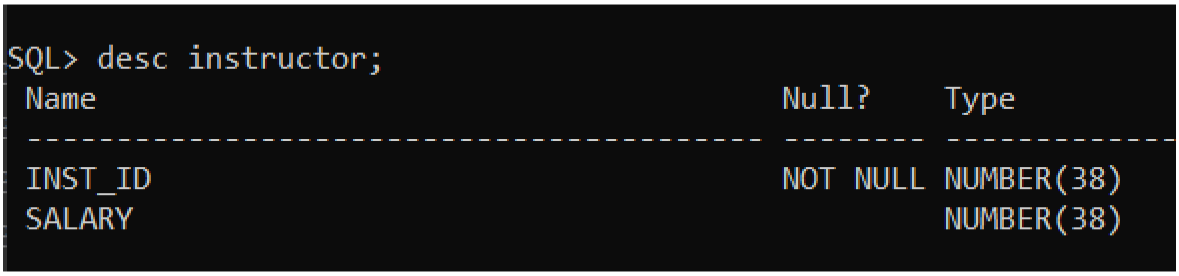
Create table instructor (inst_id int, salary int, constraint inst_id_FK foreign key (inst_id) references people(ppl_id),constraint inst_id_PK primary key(inst_id));



```
SQL> create table Instructor(
  2  inst_id int,
  3  salary int,
  4  constraint inst_id_FK foreign key (inst_id) references people(ppl_id),
  5  constraint inst_id_PK primary key(inst_id));

Table created.
```

Figure 26 Instructor table created.

Desc instructor;

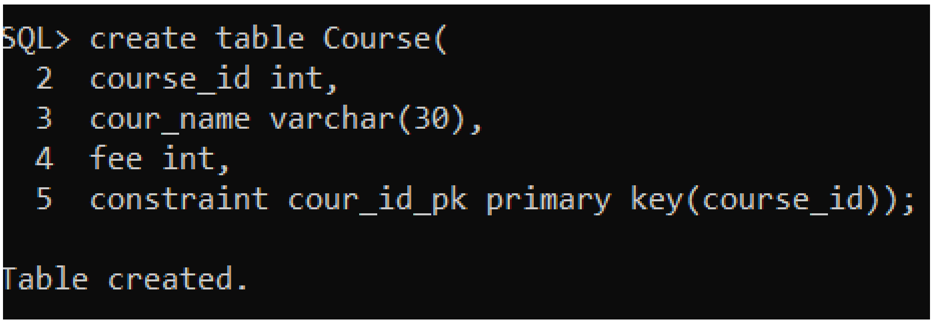


```
SQL> desc instructor;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 INST_ID                                   NOT NULL NUMBER(38)
 SALARY                                             NUMBER(38)
```

Figure 27 Describe instructor table

3.7 Course

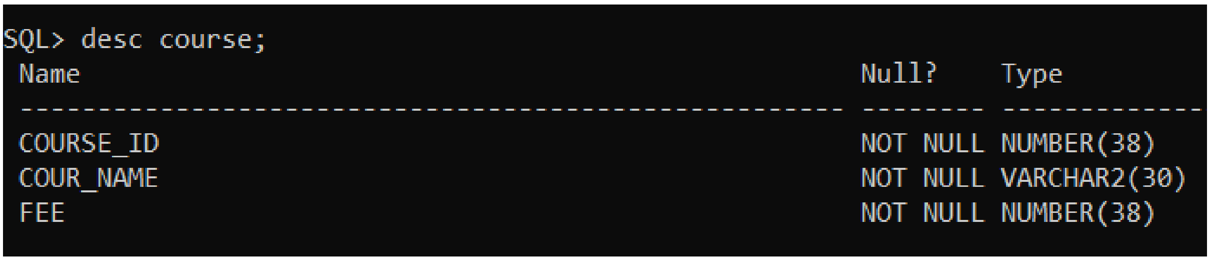
Create table Course (course_id int, cour_name varchar(30), fee int, constraint cour_id_pk primary key (course_id));



```
SQL> create table Course(
  2  course_id int,
  3  cour_name varchar(30),
  4  fee int,
  5  constraint cour_id_pk primary key(course_id));

Table created.
```

Figure 28 Table course created.

Desc course;

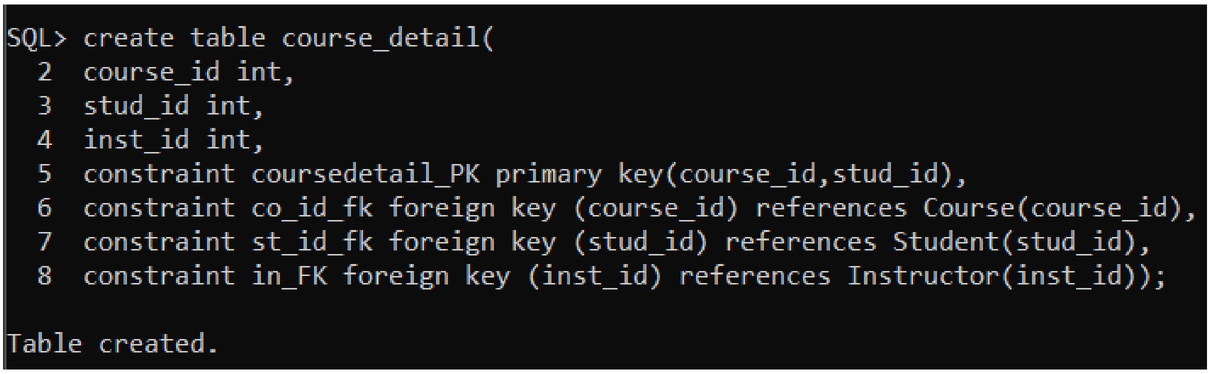


```
SQL> desc course;
 Name                                                  Null?    Type
 ----------------------------------------------------- -------- ------------
 COURSE_ID                                             NOT NULL NUMBER(38)
 COUR_NAME                                             NOT NULL VARCHAR2(30)
 FEE                                                   NOT NULL NUMBER(38)
```

Figure 29 Desc course.

3.8 Course_detail

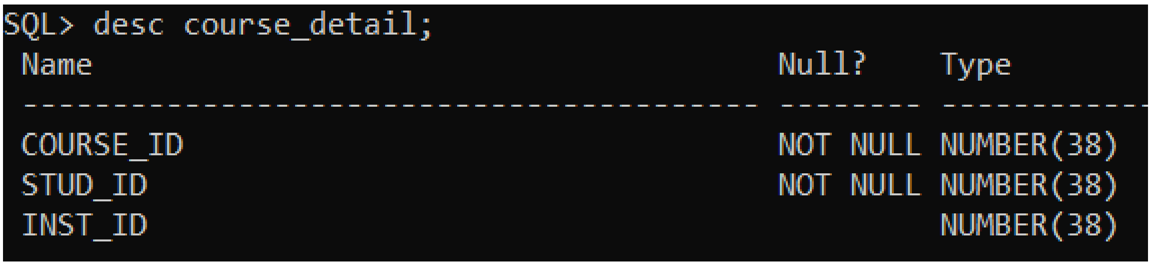
Create table course_detail(course_id int, stud_id int, inst_id int, constraint coursedetail_PK primary key (course_id, stud_id), constraint co_id_fk foreign key (course_id) references course(course)id), constraint st_id_fk foreign key (stud_id) references student (stud_id), constraint in_FK foreign key (inst_id) references instructor (inst_id));



```
SQL> create table course_detail(
  2  course_id int,
  3  stud_id int,
  4  inst_id int,
  5  constraint coursedetail_PK primary key(course_id,stud_id),
  6  constraint co_id_fk foreign key (course_id) references Course(course_id),
  7  constraint st_id_fk foreign key (stud_id) references Student(stud_id),
  8  constraint in_FK foreign key (inst_id) references Instructor(inst_id));

Table created.
```

Figure 30 Table Course_detail created.

Desc course_detail;

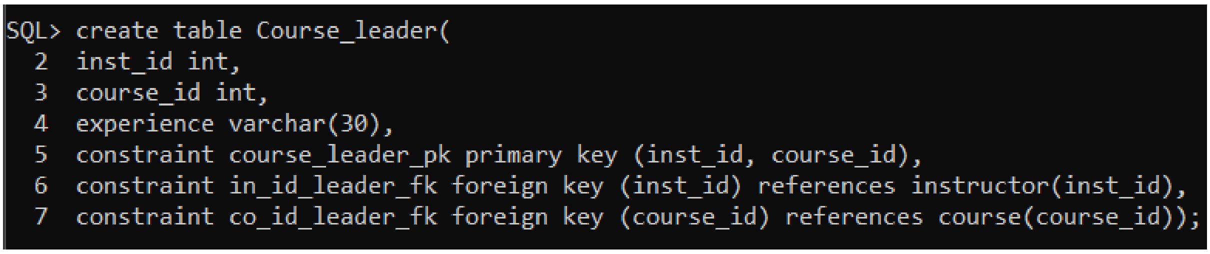


```
SQL> desc course_detail;
 Name                                      Null?    Type
 ----------------------------------------- -------- -----------
 COURSE_ID                                 NOT NULL NUMBER(38)
 STUD_ID                                   NOT NULL NUMBER(38)
 INST_ID                                            NUMBER(38)
```

Figure 31 Describe course_detail.

3.9 Course_leader

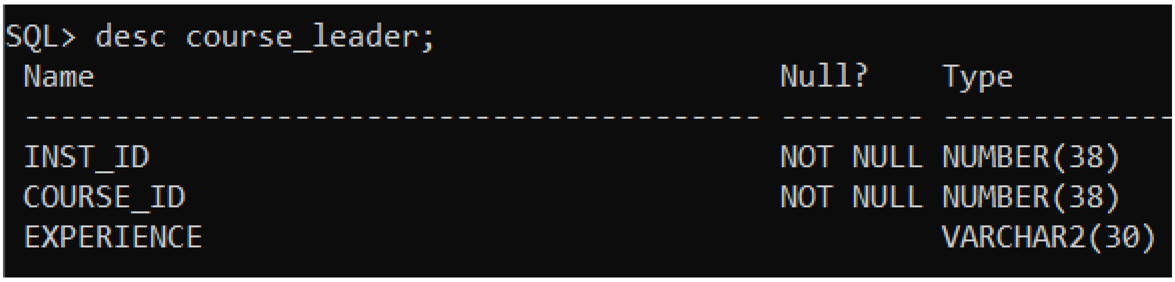
Create table course_leader(inst_id int, course_id int, experience varchar(30), constraint course_leader_pk primary key (inst_id, course_id),constraint in_id_leader_fk foreign key (inst_id) references instructor (inst_id), constraint co_id_leader_fk foreign key (course_id) references course(course_id));



```
SQL> create table Course_leader(
  2  inst_id int,
  3  course_id int,
  4  experience varchar(30),
  5  constraint course_leader_pk primary key (inst_id, course_id),
  6  constraint in_id_leader_fk foreign key (inst_id) references instructor(inst_id),
  7  constraint co_id_leader_fk foreign key (course_id) references course(course_id));
```

Figure 32 Table coruse_leader created.

Desc course_leader;

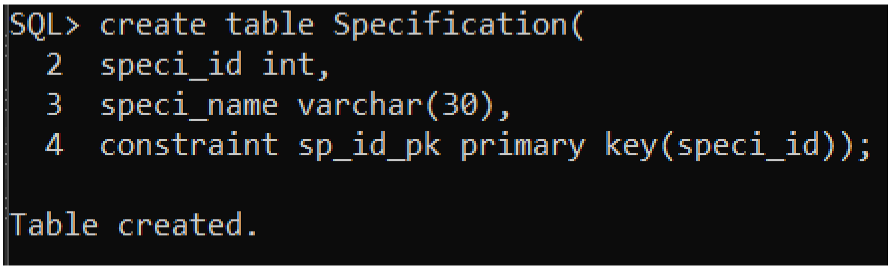


```
SQL> desc course_leader;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 INST_ID                                   NOT NULL NUMBER(38)
 COURSE_ID                                 NOT NULL NUMBER(38)
 EXPERIENCE                                         VARCHAR2(30)
```

Figure 33desc course.

3.10 Specification

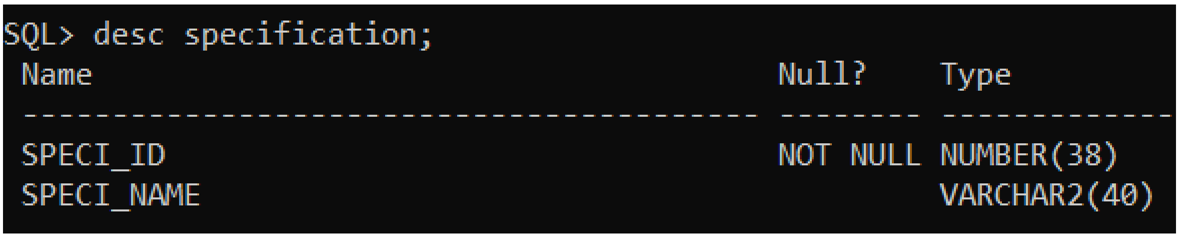
Create table specification(speci_id int, speci_name varchar(30), constraint sp_id_pk primary key(speci_id));



```
SQL> create table Specification(
speci_id int,
speci_name varchar(30),
constraint sp_id_pk primary key(speci_id));

Table created.
```

Figure 34 Table specification created.

Desc specification;

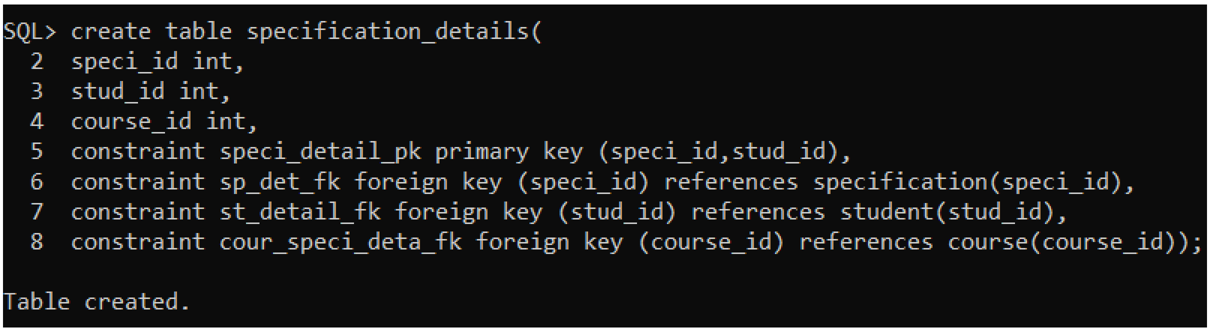


```
SQL> desc specification;
 Name                                      Null?    Type
 ----------------------------------------- -------- -------------
 SPECI_ID                                  NOT NULL NUMBER(38)
 SPECI_NAME                                         VARCHAR2(40)
```

Figure 35describe Specification.

3.11 specification_details

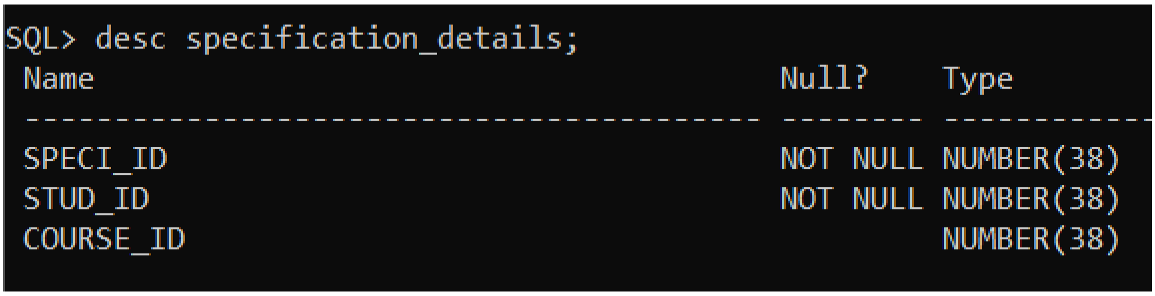
Create table specification_details(speci_id int, stud_id int, course_id int, constraint speci_detail_pk primary key (speci_id, stud_id), constraint speci_detail_fk foreign key (speci_id) references specification(speci_id), constraint st_detail_fk foreign key (stud_id) references student(stud_id), constraint cour_speci_deta_fk foreign key (course_id) references course(course_id));



```
SQL> create table specification_details(
speci_id int,
stud_id int,
course_id int,
constraint speci_detail_pk primary key (speci_id,stud_id),
constraint sp_det_fk foreign key (speci_id) references specification(speci_id),
constraint st_detail_fk foreign key (stud_id) references student(stud_id),
constraint cour_speci_deta_fk foreign key (course_id) references course(course_id));

Table created.
```

Figure 36 Table specification_details created

Desc specification_details;

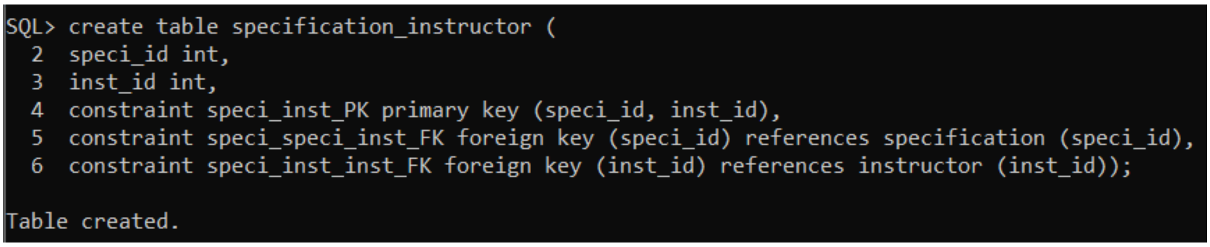


```
SQL> desc specification_details;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 SPECI_ID                                  NOT NULL NUMBER(38)
 STUD_ID                                   NOT NULL NUMBER(38)
 COURSE_ID                                          NUMBER(38)
```

Figure 37 Describe specification_details.

3.12 Specification_instructor

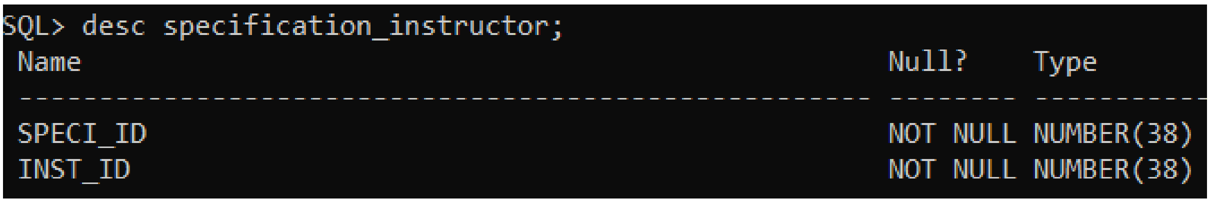
Create table specification_instructor (speci_id int, inst_id int, constraint speci_inst_pk primary key (speci_id, inst_id), constraint speci_speci_inst_FK foreign key (speci_id) references specification (speci_id), constraint speci_inst_inst_FK foreign key (inst_id) references instructor (inst_id));



```
SQL> create table specification_instructor (
speci_id int,
inst_id int,
constraint speci_inst_PK primary key (speci_id, inst_id),
constraint speci_speci_inst_FK foreign key (speci_id) references specification (speci_id),
constraint speci_inst_inst_FK foreign key (inst_id) references instructor (inst_id));

Table created.
```

Figure 38 Table specification_instructor created.

Desc specification_instructor;

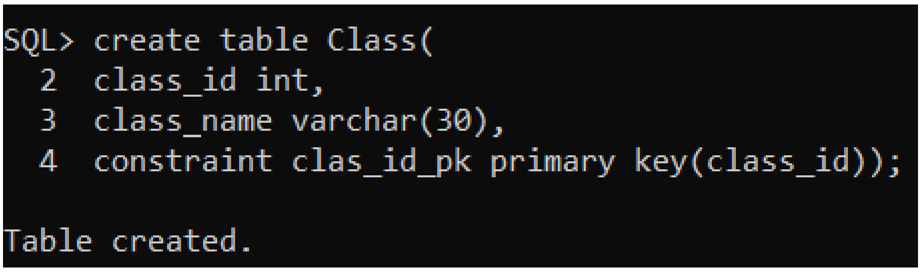


```
SQL> desc specification_instructor;
 Name                                                    Null?    Type
 ------------------------------------------------------- -------- -----------
 SPECI_ID                                                NOT NULL NUMBER(38)
 INST_ID                                                 NOT NULL NUMBER(38)
```

Figure 39 Desc specification_instructor.

3.13 Class

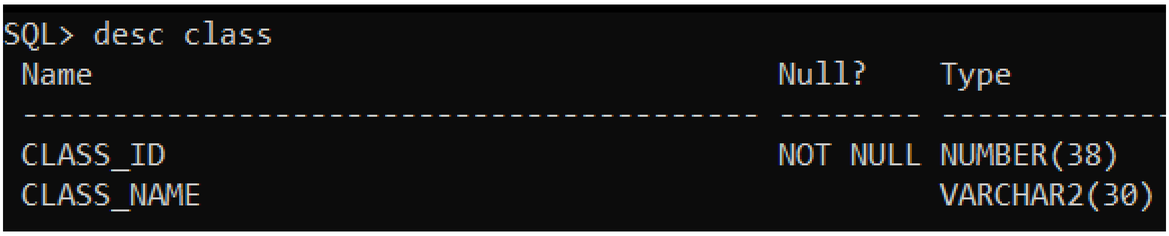
Create table class (class_id int, class_name varchar(30), constraint clas)id_[k primary key (class_id));



```
SQL> create table Class(
class_id int,
class_name varchar(30),
constraint clas_id_pk primary key(class_id));

Table created.
```

Figure 40 table class created.

Desc class;

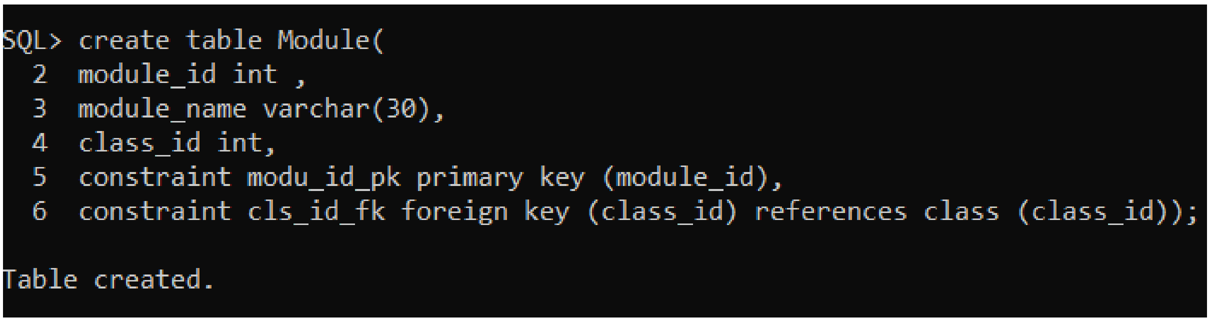


```
SQL> desc class
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 CLASS_ID                                  NOT NULL NUMBER(38)
 CLASS_NAME                                         VARCHAR2(30)
```

Figure 41desc class.

3.14 Module

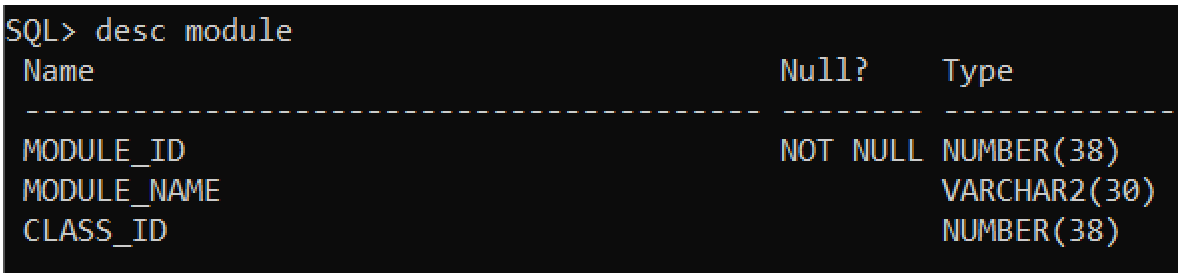
Create table module (module_id int, module_name varchar(30), class_id int, constraint modu_id_pk primary key (module_id), constraint cls_id_fk foreign key (class_id) references class (class_id));



```
SQL> create table Module(
module_id int ,
module_name varchar(30),
class_id int,
constraint modu_id_pk primary key (module_id),
constraint cls_id_fk foreign key (class_id) references class (class_id));

Table created.
```

Figure 42 Table module created.

Desc module;

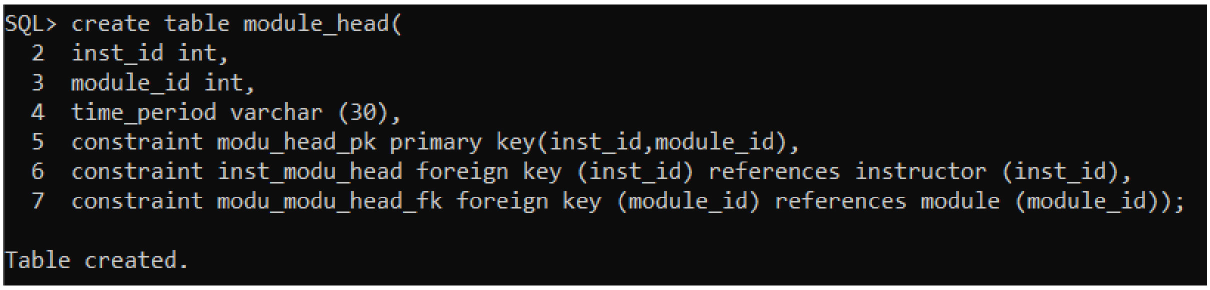


```
SQL> desc module
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 MODULE_ID                                 NOT NULL NUMBER(38)
 MODULE_NAME                                        VARCHAR2(30)
 CLASS_ID                                           NUMBER(38)
```

Figure 43 Desc module.

3.15 Module_head

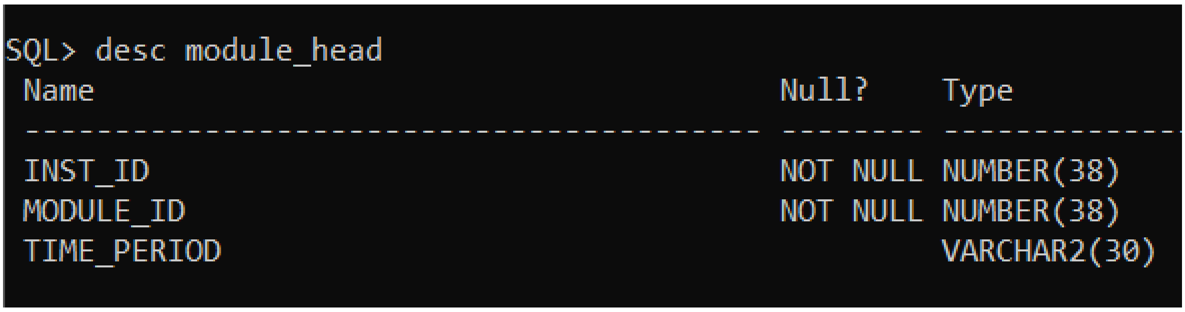
Create table module_head (inst_id int, module_id int, time_period varchar(30), constraint modu_head_pk primary key (inst_id, module_id), constraint inst_modu_head foreign key (inst_id) references instructor (inst_id), constraint modu_modu_head_fk foreign key (module_id) references module (module_id));



```
SQL> create table module_head(
inst_id int,
module_id int,
time_period varchar (30),
constraint modu_head_pk primary key(inst_id,module_id),
constraint inst_modu_head foreign key (inst_id) references instructor (inst_id),
constraint modu_modu_head_fk foreign key (module_id) references module (module_id));

Table created.
```

Figure 44Table module_head created.

Desc module_head;

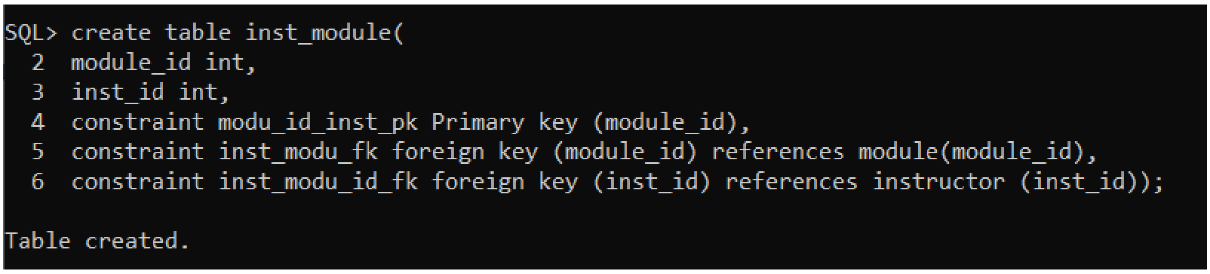


```
SQL> desc module_head
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 INST_ID                                   NOT NULL NUMBER(38)
 MODULE_ID                                 NOT NULL NUMBER(38)
 TIME_PERIOD                                        VARCHAR2(30)
```

Figure 45 desc module_head

3.16 Inst_module

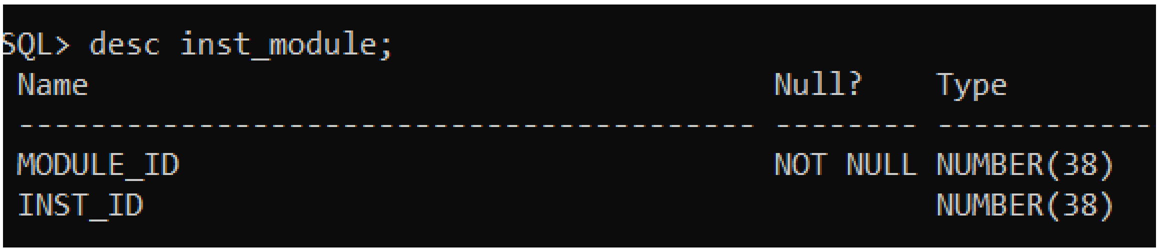
Create table inst_module (module_id int, inst_id int, constraint modu_id_inst_pk primary key (module_id), constraint inst_modu_fk foreign key (module_id) references module (module_id), constraint inst_modu_id_fk foreign key (inst_id references instructor (inst_id));



```
SQL> create table inst_module(
  2  module_id int,
  3  inst_id int,
  4  constraint modu_id_inst_pk Primary key (module_id),
  5  constraint inst_modu_fk foreign key (module_id) references module(module_id),
  6  constraint inst_modu_id_fk foreign key (inst_id) references instructor (inst_id));

Table created.
```

Figure 46 Inst_module creaed

Desc inst_module;

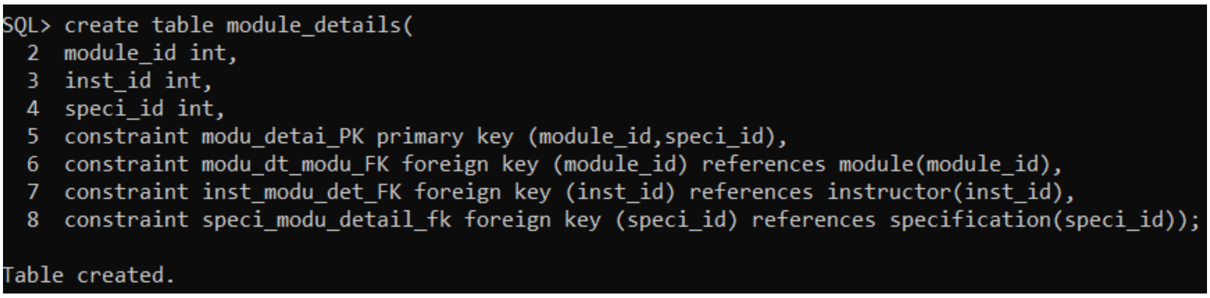


```
SQL> desc inst_module;
 Name                                      Null?    Type
 ----------------------------------------- -------- ------------
 MODULE_ID                                 NOT NULL NUMBER(38)
 INST_ID                                            NUMBER(38)
```

Figure 47 desc inst_module.

3.17 Module_details

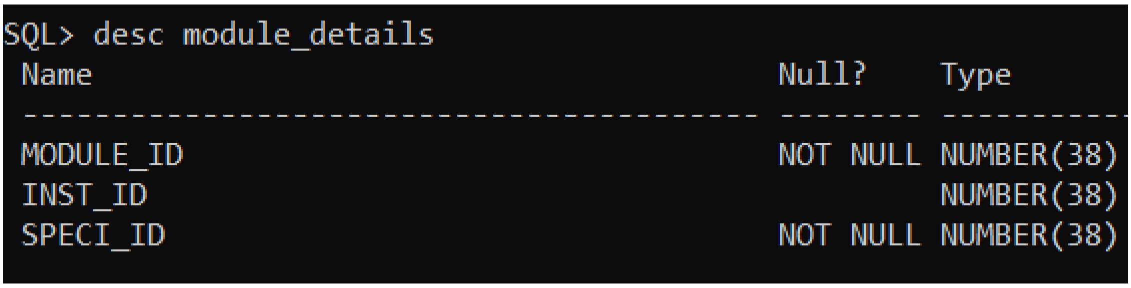
Create table module_details (module_id int, inst_id int, speci_id int, constraint modu_detail_PK primary key (module_id, speci_id), constraint modu_dt_modu_FK foreign key (modle_id) references module(module_id), constraint inst_modu_det_FK foreign key (inst_id) references instructor (inst_id), constraint speci_modu_det_FK foreign key (inst_id) references instructor (inst_id), constraint speci_modu_detail_fk foreign key (speci_id) references specification(speci_id));



```
SQL> create table module_details(
  2  module_id int,
  3  inst_id int,
  4  speci_id int,
  5  constraint modu_detai_PK primary key (module_id,speci_id),
  6  constraint modu_dt_modu_FK foreign key (module_id) references module(module_id),
  7  constraint inst_modu_det_FK foreign key (inst_id) references instructor(inst_id),
  8  constraint speci_modu_detail_fk foreign key (speci_id) references specification(speci_id));

Table created.
```

Figure 48 Table module_details created.

Desc module_details;



```
SQL> desc module_details
 Name                                      Null?    Type
 ----------------------------------------- -------- ----------
 MODULE_ID                                 NOT NULL NUMBER(38)
 INST_ID                                            NUMBER(38)
 SPECI_ID                                  NOT NULL NUMBER(38)
```

Figure 49desc module_details.

Data entry:

1 Address:

insert all

into address values (001,'Nepal','1','Birtamode','Satyam','782')

into address values (002,'Nepal','2','Saitaranga','Bulbul','678')

into address values (003,'Nepal','4','Basundara','Dhalkebar','545')

select * from dual;

into address values (004,'Nepal','2','Nadhunga','Shreepur','243')

into address values (005,'Nepal','1','Surunga','Vagaha','986')

into address values (006,'Nepal','3','Siphal','Dhamura','329')

into address values (007,'Nepal','2','Lalbandi','Bateshwor','673')

into address values (008,'Nepal','2','Ishworpur','Hatisar','673')

into address values (009,'Nepal','1','Birtamode','Satyam','987')

into address values (010,'Nepal','4','Damukha','Nilam','222')

elect * from dual;

insert all

into address values (011,'Nepal','1','Mole','Satare','111')

into address values (012,'Nepal','2','Ainselu','Alauha','567') into address values (013,'Nepal','1','Madhavpur','Mulahi','897')

into address values (014,'Nepal','1','Sirise','Durbar','354')

into address values (015,'Nepal','3','Iname','Narayan','625')

into address values (016,'Nepal','3','Dumre','Shital','61')

select * from dual;

insert all

into address values (017,'Nepal','4','Barai','Jhamke','89')

into address values (018,'Nepal','1','Kalanga','Tulasi','100')

into address values (019,'Nepal','1','Mole','Kopila','015')

into address values (020,'Nepal','2','Saitaranga','Sairat','71')

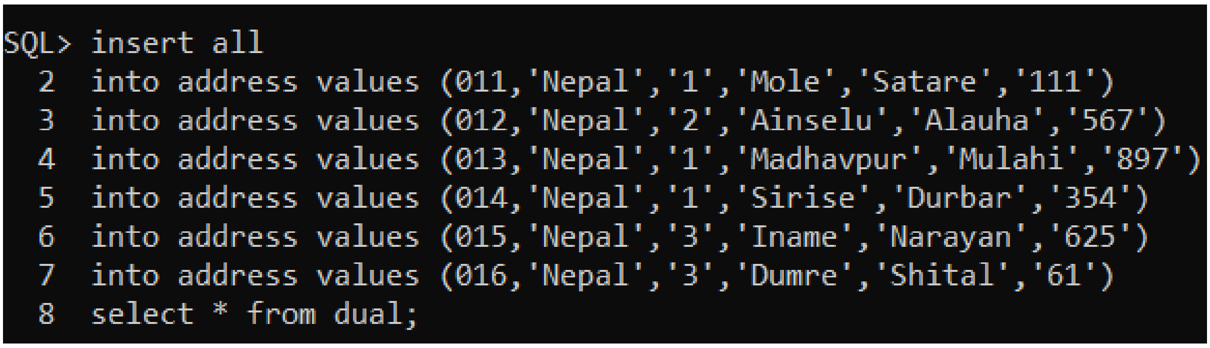
into address values (021,'Nepal','3','Khare','Sangati','3')

into address values (022,'Nepal','3','Marbu','Jyaku','8')

into address values (023,'Nepal','4','Chanku','Bulung','9')

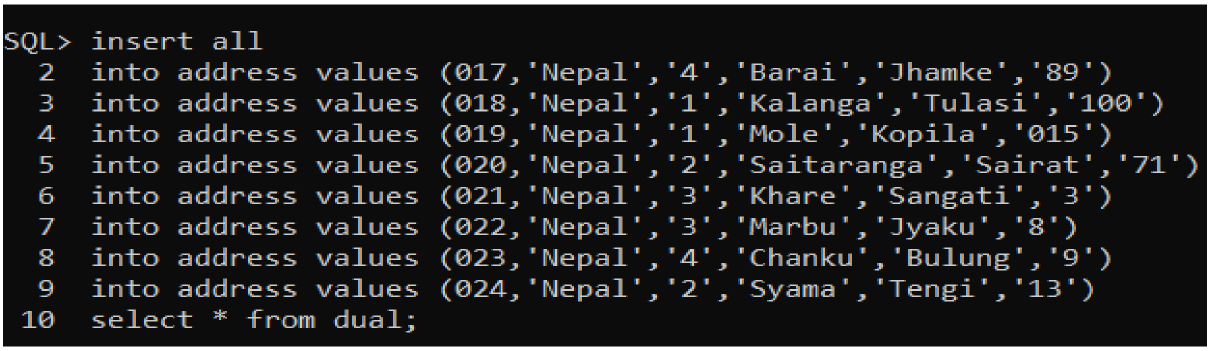
into address values (024,'Nepal','2','Syama','Tengi','13')

select * from dual;



```
SQL> insert all
  2  into address values (011,'Nepal','1','Mole','Satare','111')
  3  into address values (012,'Nepal','2','Ainselu','Alauha','567')
  4  into address values (013,'Nepal','1','Madhavpur','Mulahi','897')
  5  into address values (014,'Nepal','1','Sirise','Durbar','354')
  6  into address values (015,'Nepal','3','Iname','Narayan','625')
  7  into address values (016,'Nepal','3','Dumre','Shital','61')
  8  select * from dual;
```

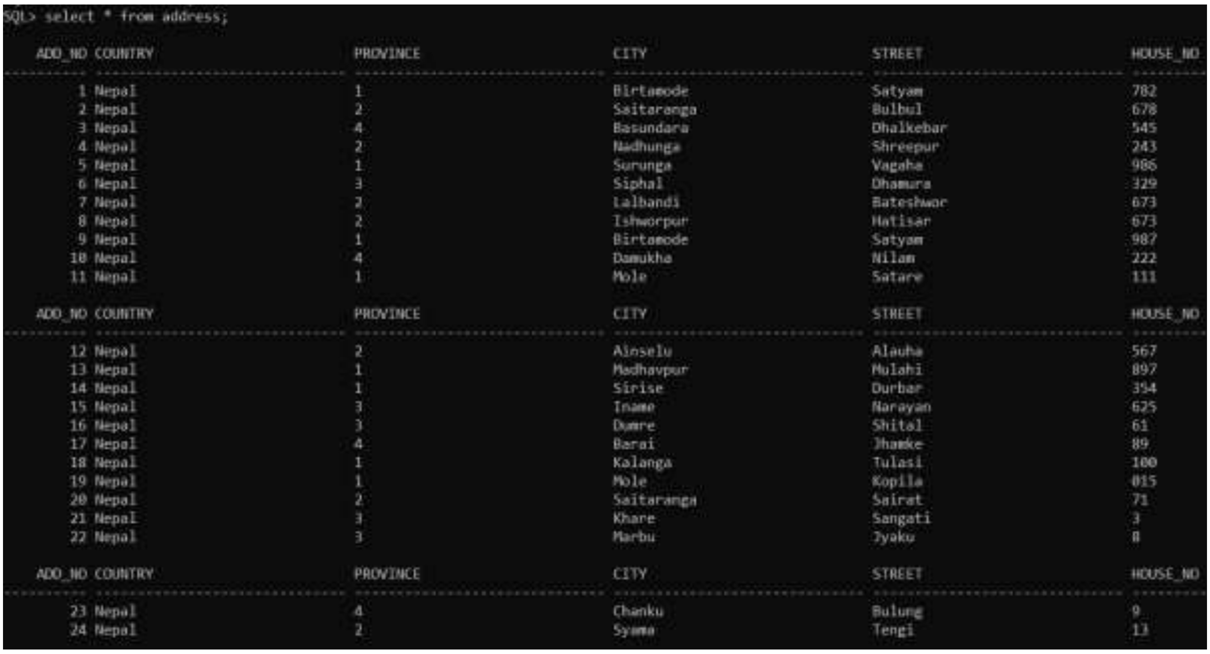
Figure 50 Insertint into address.



```
SQL> insert all
  2  into address values (017,'Nepal','4','Barai','Jhamke','89')
  3  into address values (018,'Nepal','1','Kalanga','Tulasi','100')
  4  into address values (019,'Nepal','1','Mole','Kopila','015')
  5  into address values (020,'Nepal','2','Saitaranga','Sairat','71')
  6  into address values (021,'Nepal','3','Khare','Sangati','3')
  7  into address values (022,'Nepal','3','Marbu','Jyaku','8')
  8  into address values (023,'Nepal','4','Chanku','Bulung','9')
  9  into address values (024,'Nepal','2','Syama','Tengi','13')
 10  select * from dual;
```

Figure 51inserting into address.

Select * from address



```
SQL> select * from address;

    ADD_NO COUNTRY                        PROVINCE                       CITY                           STREET                         HOUSE_NO
---------- ------------------------------ ------------------------------ ------------------------------ ------------------------------ ----------
         1 Nepal                          1                              Birtamode                      Satyam                         782
         2 Nepal                          2                              Saitaranga                     Bulbul                         678
         3 Nepal                          4                              Basundara                      Dhalkebar                      545
         4 Nepal                          2                              Nadhunga                       Shreepur                       243
         5 Nepal                          1                              Surunga                        Vagaha                         986
         6 Nepal                          3                              Siphal                         Dhamura                        329
         7 Nepal                          2                              Lalbandi                       Bateshwor                      673
         8 Nepal                          2                              Ishworpur                      Hatisar                        673
         9 Nepal                          1                              Birtamode                      Satyam                         987
        10 Nepal                          4                              Damukha                        Nilam                          222
        11 Nepal                          1                              Mole                           Satare                         111

    ADD_NO COUNTRY                        PROVINCE                       CITY                           STREET                         HOUSE_NO
---------- ------------------------------ ------------------------------ ------------------------------ ------------------------------ ----------
        12 Nepal                          2                              Ainselu                        Alauha                         567
        13 Nepal                          1                              Madhavpur                      Mulahi                         897
        14 Nepal                          1                              Sirise                         Durbar                         354
        15 Nepal                          3                              Iname                          Narayan                        625
        16 Nepal                          3                              Dumre                          Shital                         61
        17 Nepal                          4                              Barai                          Jhamke                         89
        18 Nepal                          1                              Kalanga                        Tulasi                         100
        19 Nepal                          1                              Mole                           Kopila                         015
        20 Nepal                          2                              Saitaranga                     Sairat                         71
        21 Nepal                          3                              Khare                          Sangati                        3
        22 Nepal                          3                              Marbu                          Jyaku                          8

    ADD_NO COUNTRY                        PROVINCE                       CITY                           STREET                         HOUSE_NO
---------- ------------------------------ ------------------------------ ------------------------------ ------------------------------ ----------
        23 Nepal                          4                              Chanku                         Bulung                         9
        24 Nepal                          2                              Syama                          Tengi                          13
```

Figure 52 Address table data

2. Phone

```
insert all
  into phone values (null, 4)
 into phone values (9877676656,5)
into phone values (9877676236,6)
into phone values (9877676236,7)
into phone values (9877673142,8)
into phone values (null,9)
into phone values (null,10)
into phone values (9877878765,11)
into phone values (null,12)
into phone values (9816735364,13)
into phone values (9867654444,14)
into phone values (9887876123,15)
into phone values (9867656543,16)
into phone values (9867654543,17)
into phone values (9887676565,18)
```

into phone values (9887676565,19)

into phone values (null,20)

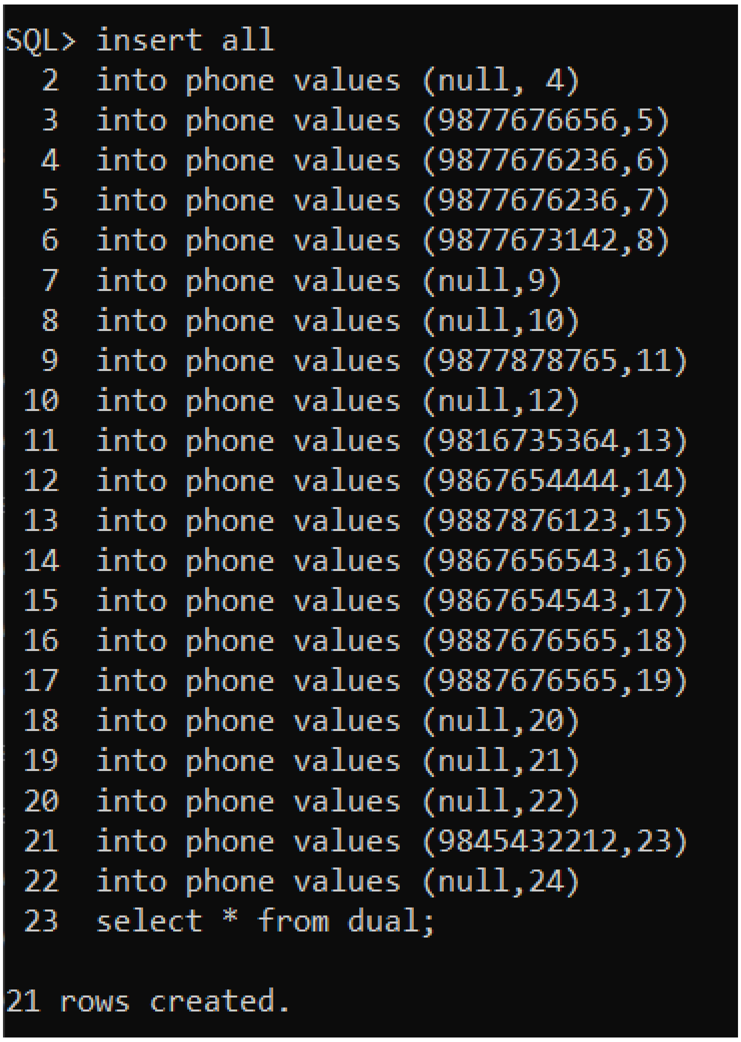
into phone values (null,21)

into phone values (null,22)

into phone values (9845432212,23)

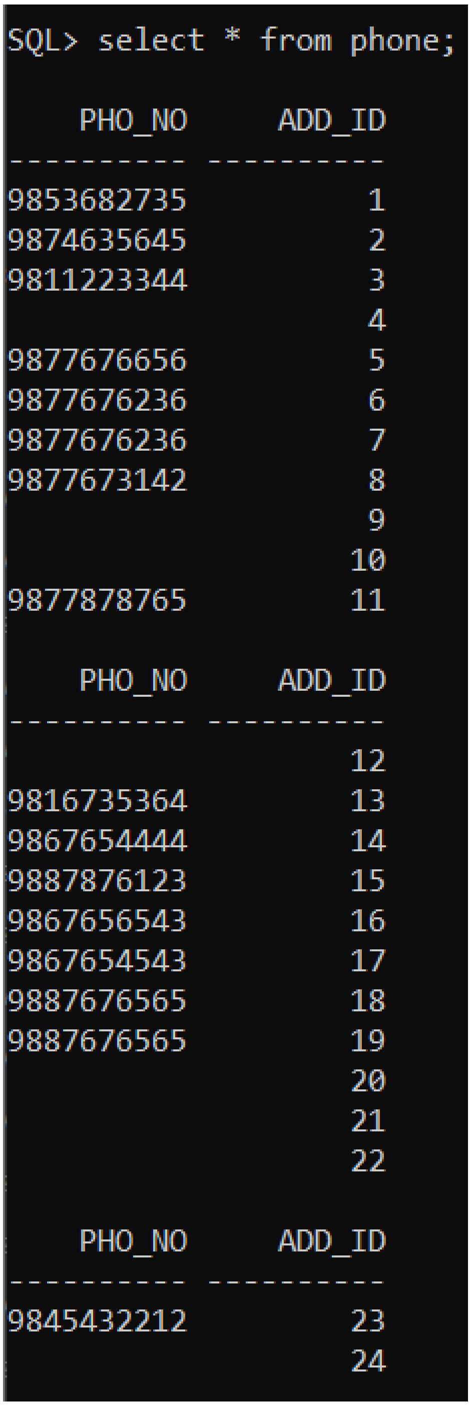
into phone values (null,24)

select * from dual;



```
SQL> insert all
  2  into phone values (null, 4)
  3  into phone values (9877676656,5)
  4  into phone values (9877676236,6)
  5  into phone values (9877676236,7)
  6  into phone values (9877673142,8)
  7  into phone values (null,9)
  8  into phone values (null,10)
  9  into phone values (9877878765,11)
 10  into phone values (null,12)
 11  into phone values (9816735364,13)
 12  into phone values (9867654444,14)
 13  into phone values (9887876123,15)
 14  into phone values (9867656543,16)
 15  into phone values (9867654543,17)
 16  into phone values (9887676565,18)
 17  into phone values (9887676565,19)
 18  into phone values (null,20)
 19  into phone values (null,21)
 20  into phone values (null,22)
 21  into phone values (9845432212,23)
 22  into phone values (null,24)
 23  select * from dual;

21 rows created.
```

Figure 53Insertint into phone.



```
SQL> select * from phone;

    PHO_NO     ADD_ID
---------- ----------
9853682735          1
9874635645          2
9811223344          3
                    4
9877676656          5
9877676236          6
9877676236          7
9877673142          8
                    9
                   10
9877878765         11

    PHO_NO     ADD_ID
---------- ----------
                   12
9816735364         13
9867654444         14
9887876123         15
9867656543         16
9867654543         17
9887676565         18
9887676565         19
                   20
                   21
                   22

    PHO_NO     ADD_ID
---------- ----------
9845432212         23
                   24
```

Figure 54 Phone data.

3. FAX

insert all

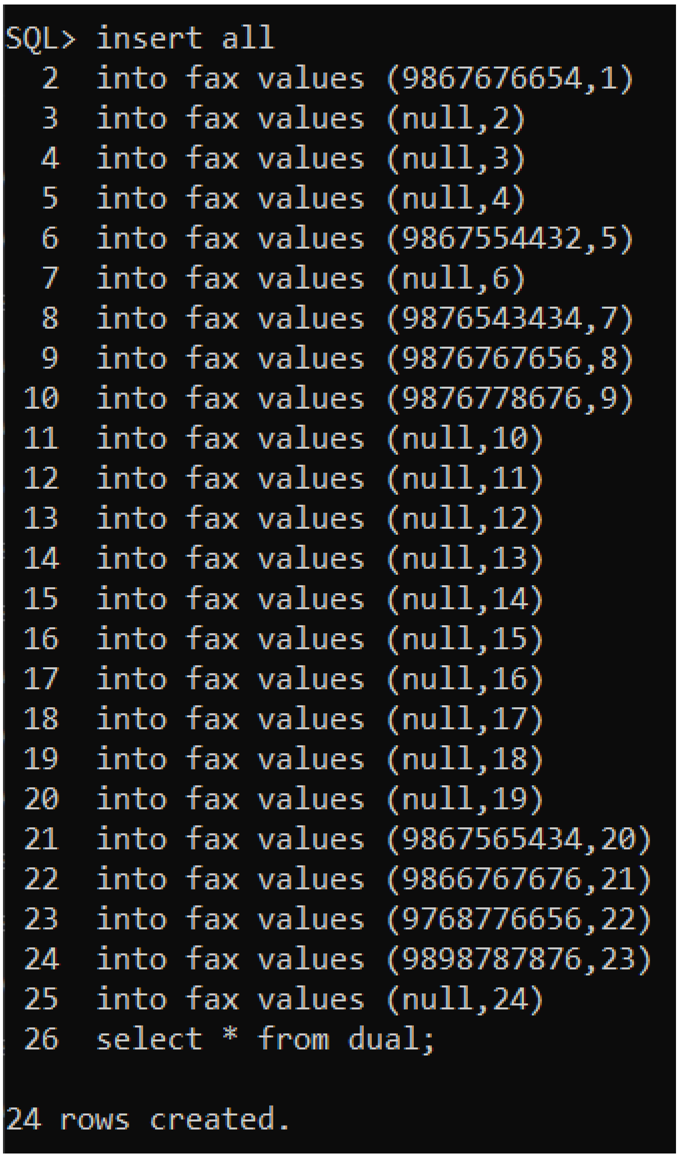
into fax values (9867676654,1)

into fax values (null,2)

into fax values (null,3)

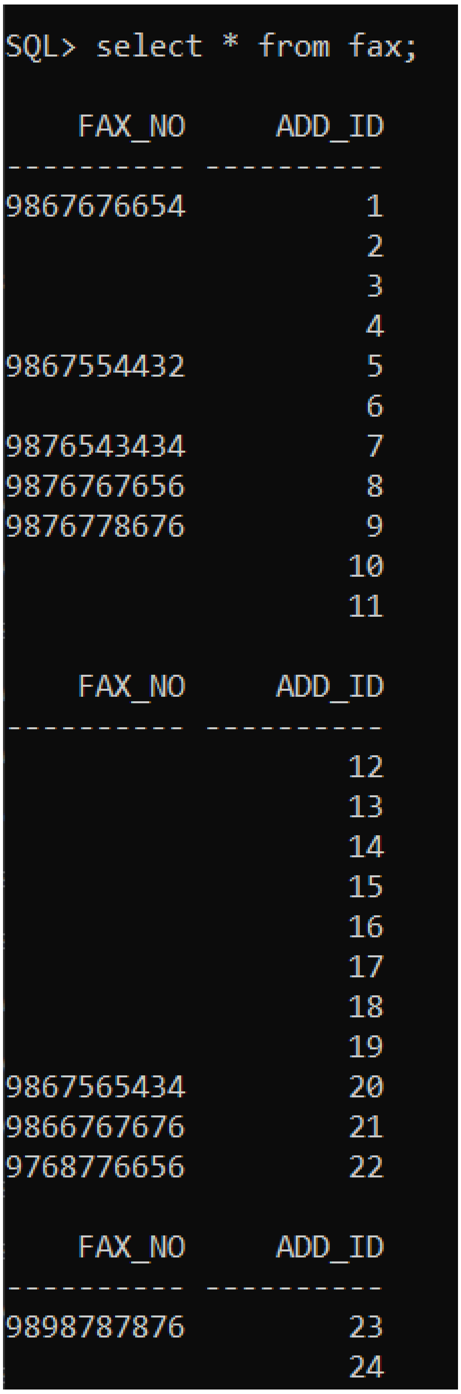
into fax values (null,4)

```
into fax values (9867554432,5)
into fax values (null,6)
into fax values (9876543434,7)
into fax values (9876767656,8)
into fax values (9876778676,9)
into fax values (null,10)
into fax values (null,11)
into fax values (null,12)
into fax values (null,13)
into fax values (null,14)
into fax values (null,15)
into fax values (null,16)
into fax values (null,17)
   into fax values (null,18)
   into fax values (null,19)
into fax values (9867565434,20)
into fax values (9866767676,21)
into fax values (9768776656,22)
into fax values (9898787876,23)
into fax values (null,24)
  select * from dual;
```



```
SQL> insert all
into fax values (9867676654,1)
into fax values (null,2)
into fax values (null,3)
into fax values (null,4)
into fax values (9867554432,5)
into fax values (null,6)
into fax values (9876543434,7)
into fax values (9876767656,8)
into fax values (9876778676,9)
into fax values (null,10)
into fax values (null,11)
into fax values (null,12)
into fax values (null,13)
into fax values (null,14)
into fax values (null,15)
into fax values (null,16)
into fax values (null,17)
into fax values (null,18)
into fax values (null,19)
into fax values (9867565434,20)
into fax values (9866767676,21)
into fax values (9768776656,22)
into fax values (9898787876,23)
into fax values (null,24)
select * from dual;

24 rows created.
```

Figure 55 inserting into fax



```
SQL> select * from fax;

    FAX_NO     ADD_ID
---------- ----------
9867676654          1
                    2
                    3
                    4
9867554432          5
                    6
9876543434          7
9876767656          8
9876778676          9
                   10
                   11

    FAX_NO     ADD_ID
---------- ----------
                   12
                   13
                   14
                   15
                   16
                   17
                   18
                   19
9867565434         20
9866767676         21
9768776656         22

    FAX_NO     ADD_ID
---------- ----------
9898787876         23
                   24
```

Figure 56 Fax table data

4 people

SQL> insert all

into people values (503,3,'Asika','Karki',09-08-2000',9886788345,'Female')

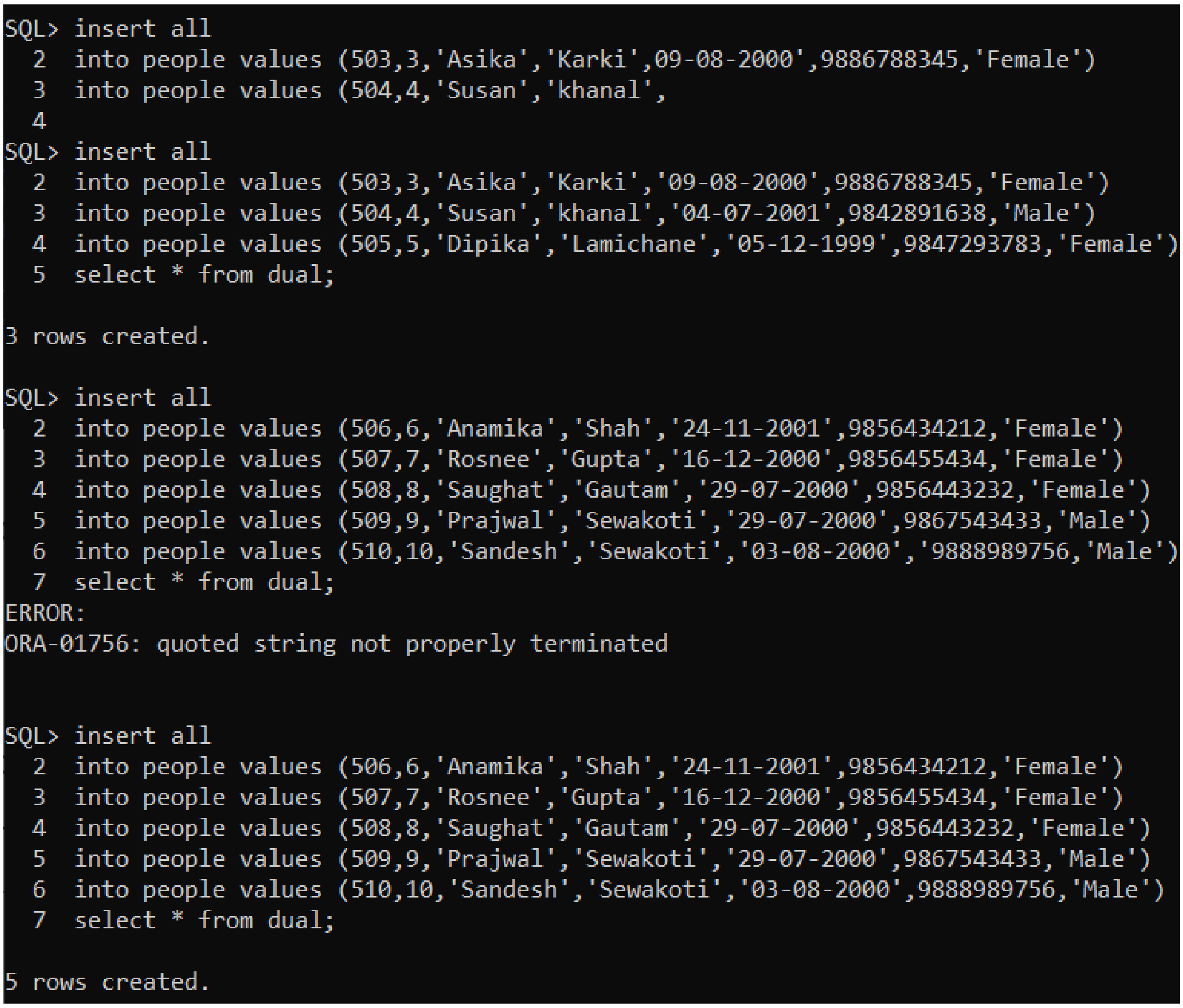
into people values (504,4,'Susan','khanal',’04-07021’,9878766765,’Male’)

into people values (503,3,'Asika','Karki','09-08-2000',9886788345,'Female')

```
into people values (504,4,'Susan','khanal','04-07-2001',9842891638,'Male')
 into people values (505,5,'Dipika','Lamichane','05-12-1999',9847293783,'Female')
into people values (506,6,'Anamika','Shah','24-11-2001',9856434212,'Female')
into people values (507,7,'Rosnee','Gupta','16-12-2000',9856455434,'Female')
into people values (508,8,'Saughat','Gautam','29-07-2000',9856443232,'Female')
into people values (509,9,'Prajwal','Sewakoti','29-07-2000',9867543433,'Male')
into people values (510,10,'Sandesh','Sewakoti','03-08-2000','9888989756,'Male')
into people values (506,6,'Anamika','Shah','24-11-2001',9856434212,'Female')
into people values (507,7,'Rosnee','Gupta','16-12-2000',9856455434,'Female')
into people values (508,8,'Saughat','Gautam','29-07-2000',9856443232,'Female')
into people values (509,9,'Prajwal','Sewakoti','29-07-2000',9867543433,'Male')
into people values (510,10,'Sandesh','Sewakoti','03-08-2000',9888989756,'Male')
into people value (511,11,'Prabesh','Bimali','05-05-2001',9812321232,'Male')
 into people value (512,12,'Parim','Thapa','01-02-1999',9867876765,'Male')
 into people value (513,13,'Shreya','Subedi','13-10-1997',9834543234,'Female')
into people value (514,14,'Sagar','Ghimire','14-04-2002',9087676545,'Male')
into people value(515,15,'Sewak','Sewakoti','16-08-2001',9894565433,'Male')
into people value (511,11,'Prabesh','Bimali','05-05-2001',9812321232,'Male')
into people values (511,11,'Prabesh','Bimali','05-05-2001',9812321232,'Male')
 into people values (512,12,'Parim','Thapa','01-02-1999',9867876765,'Male')
into people values (513,13,'Shreya','Subedi','13-10-1997',9834543234,'Female')
 into people values (514,14,'Sagar','Ghimire','14-04-2002',9087676545,'Male')
 into people values (515,15,'Sewak','Sewakoti','16-08-2001',9894565433,'Male')
into people values (516,16,'Sagun','Rai','24-09-2000',9867876566,'Male')
into people values (517,17,'Stella','Dhimal','22-05-1992',9845389765,'Female')
into people values (518,18,'Sophia','Darnal','17-05-1980',9834976453,'Female')
into people values (519,19,'Dawa','Karpa','14-02-1974',9867543323,'Male')
into people values (520,20,'Sheela','Pokharel','16-11-1985',9867543432,'Female')
into people values (521,21,'Santa','Thapa','19-04-1989',9877665544,'Male')
into people values (522,22,'Sara','Lama','20-08-1984',9817463456,'Female')
```

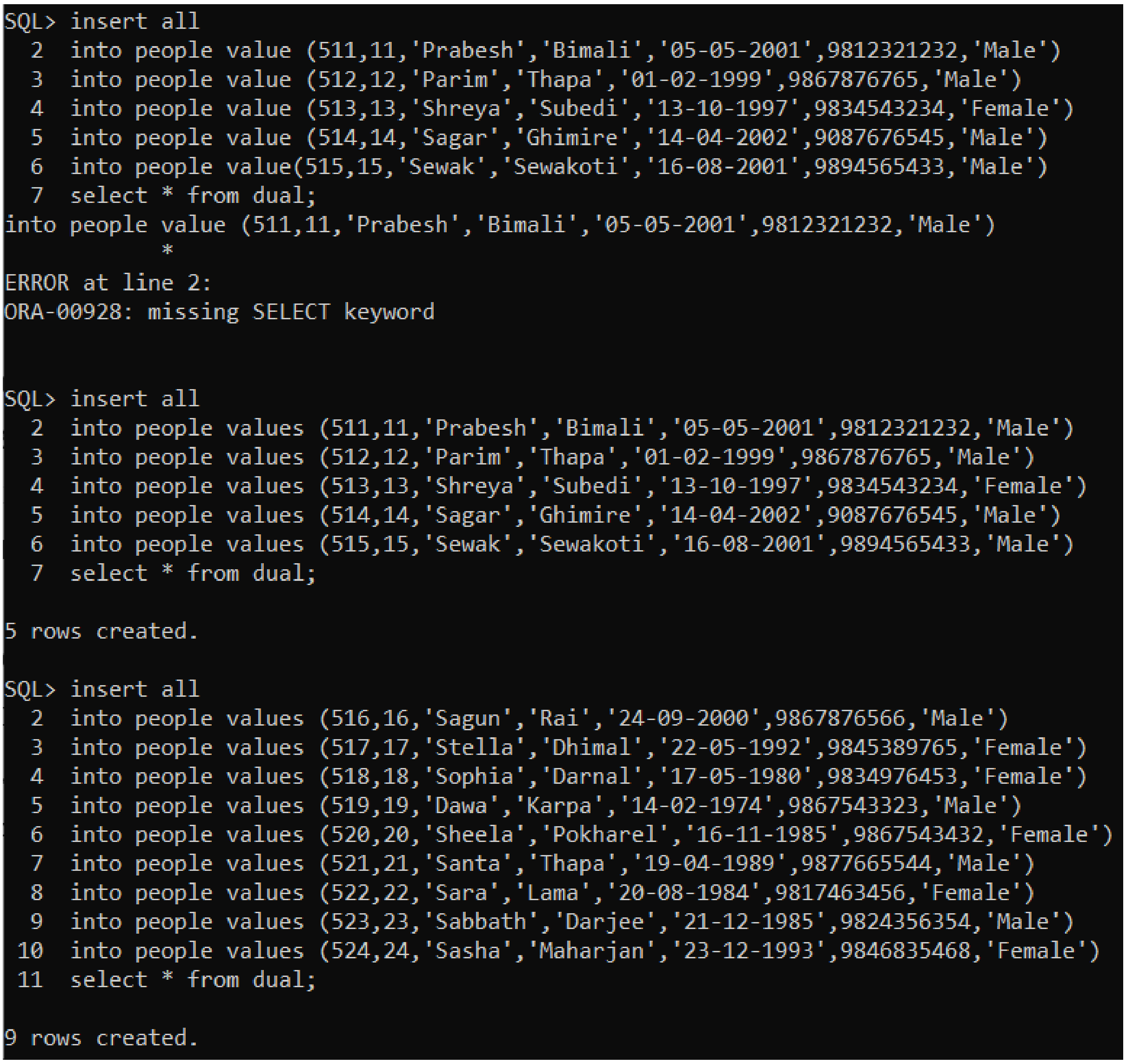
into people values (523,23,'Sabbath','Darjee','21-12-1985',9824356354,'Male')

into people values (524,24,'Sasha','Maharjan','23-12-1993',9846835468,'Female')



```
SQL> insert all
     into people values (503,3,'Asika','Karki',09-08-2000',9886788345,'Female')
     into people values (504,4,'Susan','khanal',

SQL> insert all
     into people values (503,3,'Asika','Karki','09-08-2000',9886788345,'Female')
     into people values (504,4,'Susan','khanal','04-07-2001',9842891638,'Male')
     into people values (505,5,'Dipika','Lamichane','05-12-1999',9847293783,'Female')
     select * from dual;

3 rows created.

SQL> insert all
     into people values (506,6,'Anamika','Shah','24-11-2001',9856434212,'Female')
     into people values (507,7,'Rosnee','Gupta','16-12-2000',9856455434,'Female')
     into people values (508,8,'Saughat','Gautam','29-07-2000',9856443232,'Female')
     into people values (509,9,'Prajwal','Sewakoti','29-07-2000',9867543433,'Male')
     into people values (510,10,'Sandesh','Sewakoti','03-08-2000','9888989756,'Male')
     select * from dual;
ERROR:
ORA-01756: quoted string not properly terminated


SQL> insert all
     into people values (506,6,'Anamika','Shah','24-11-2001',9856434212,'Female')
     into people values (507,7,'Rosnee','Gupta','16-12-2000',9856455434,'Female')
     into people values (508,8,'Saughat','Gautam','29-07-2000',9856443232,'Female')
     into people values (509,9,'Prajwal','Sewakoti','29-07-2000',9867543433,'Male')
     into people values (510,10,'Sandesh','Sewakoti','03-08-2000',9888989756,'Male')
     select * from dual;

5 rows created.
```

Figure 57 inserting into fax people.

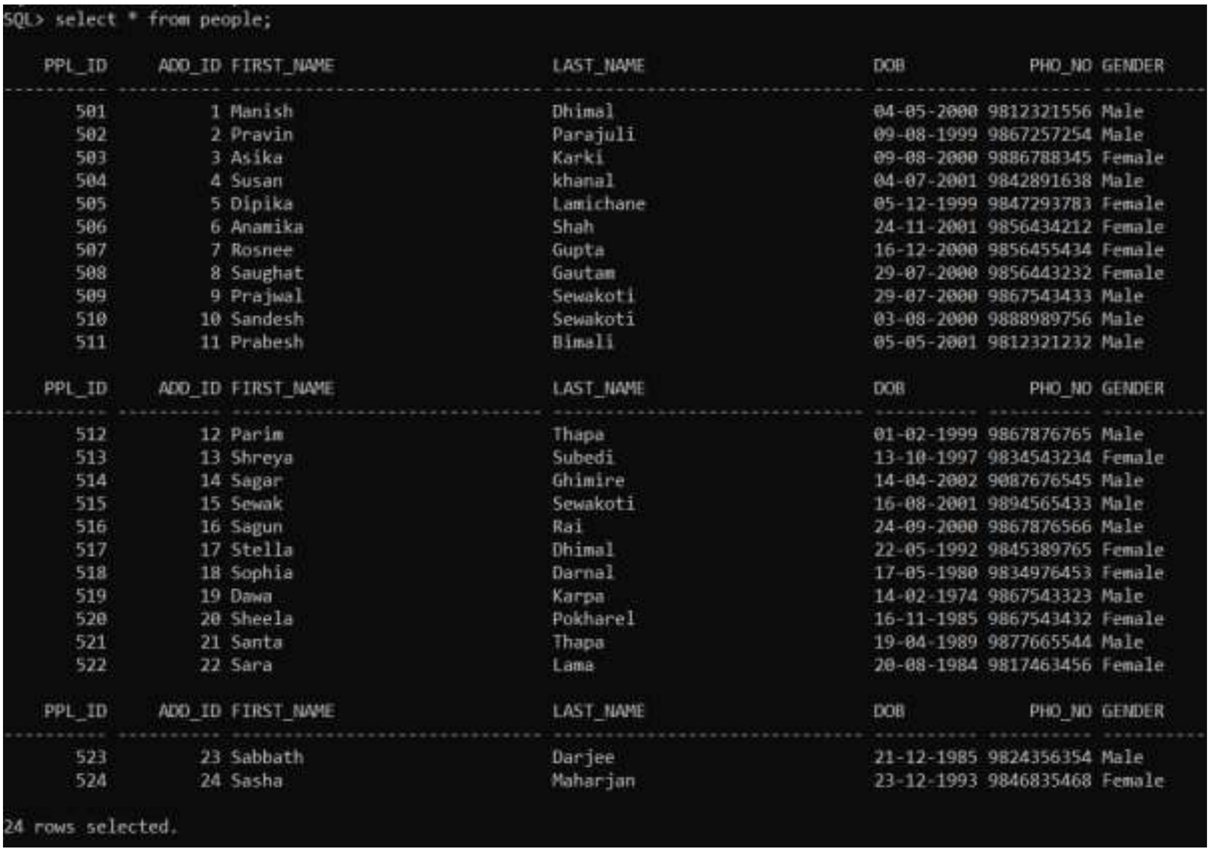


```
SQL> insert all
  2  into people value (511,11,'Prabesh','Bimali','05-05-2001',9812321232,'Male')
  3  into people value (512,12,'Parim','Thapa','01-02-1999',9867876765,'Male')
  4  into people value (513,13,'Shreya','Subedi','13-10-1997',9834543234,'Female')
  5  into people value (514,14,'Sagar','Ghimire','14-04-2002',9087676545,'Male')
  6  into people value(515,15,'Sewak','Sewakoti','16-08-2001',9894565433,'Male')
  7  select * from dual;
into people value (511,11,'Prabesh','Bimali','05-05-2001',9812321232,'Male')
            *
ERROR at line 2:
ORA-00928: missing SELECT keyword


SQL> insert all
  2  into people values (511,11,'Prabesh','Bimali','05-05-2001',9812321232,'Male')
  3  into people values (512,12,'Parim','Thapa','01-02-1999',9867876765,'Male')
  4  into people values (513,13,'Shreya','Subedi','13-10-1997',9834543234,'Female')
  5  into people values (514,14,'Sagar','Ghimire','14-04-2002',9087676545,'Male')
  6  into people values (515,15,'Sewak','Sewakoti','16-08-2001',9894565433,'Male')
  7  select * from dual;

5 rows created.

SQL> insert all
  2  into people values (516,16,'Sagun','Rai','24-09-2000',9867876566,'Male')
  3  into people values (517,17,'Stella','Dhimal','22-05-1992',9845389765,'Female')
  4  into people values (518,18,'Sophia','Darnal','17-05-1980',9834976453,'Female')
  5  into people values (519,19,'Dawa','Karpa','14-02-1974',9867543323,'Male')
  6  into people values (520,20,'Sheela','Pokharel','16-11-1985',9867543432,'Female')
  7  into people values (521,21,'Santa','Thapa','19-04-1989',9877665544,'Male')
  8  into people values (522,22,'Sara','Lama','20-08-1984',9817463456,'Female')
  9  into people values (523,23,'Sabbath','Darjee','21-12-1985',9824356354,'Male')
 10  into people values (524,24,'Sasha','Maharjan','23-12-1993',9846835468,'Female')
 11  select * from dual;

9 rows created.
```

Figure 58 Insdrting into people

The final table of People

Select * from people;



```
SQL> select * from people;

    PPL_ID     ADD_ID FIRST_NAME                     LAST_NAME                      DOB            PHO_NO GENDER
---------- ---------- ------------------------------ ------------------------------ ---------- ---------- ----------
       501          1 Manish                         Dhimal                         04-05-2000 9812321556 Male
       502          2 Pravin                         Parajuli                       09-08-1999 9867257254 Male
       503          3 Asika                          Karki                          09-08-2000 9886788345 Female
       504          4 Susan                          khanal                         04-07-2001 9842891638 Male
       505          5 Dipika                         Lamichane                      05-12-1999 9847293783 Female
       506          6 Anamika                        Shah                           24-11-2001 9856434212 Female
       507          7 Rosnee                         Gupta                          16-12-2000 9856455434 Female
       508          8 Saughat                        Gautam                         29-07-2000 9856443232 Female
       509          9 Prajwal                        Sewakoti                       29-07-2000 9867543433 Male
       510         10 Sandesh                        Sewakoti                       03-08-2000 9888989756 Male
       511         11 Prabesh                        Bimali                         05-05-2001 9812321232 Male

    PPL_ID     ADD_ID FIRST_NAME                     LAST_NAME                      DOB            PHO_NO GENDER
---------- ---------- ------------------------------ ------------------------------ ---------- ---------- ----------
       512         12 Parim                          Thapa                          01-02-1999 9867876765 Male
       513         13 Shreya                         Subedi                         13-10-1997 9834543234 Female
       514         14 Sagar                          Ghimire                        14-04-2002 9087676545 Male
       515         15 Sewak                          Sewakoti                       16-08-2001 9894565433 Male
       516         16 Sagun                          Rai                            24-09-2000 9867876566 Male
       517         17 Stella                         Dhimal                         22-05-1992 9845389765 Female
       518         18 Sophia                         Darnal                         17-05-1980 9834976453 Female
       519         19 Dawa                           Karpa                          14-02-1974 9867543323 Male
       520         20 Sheela                         Pokharel                       16-11-1985 9867543432 Female
       521         21 Santa                          Thapa                          19-04-1989 9877665544 Male
       522         22 Sara                           Lama                           20-08-1984 9817463456 Female

    PPL_ID     ADD_ID FIRST_NAME                     LAST_NAME                      DOB            PHO_NO GENDER
---------- ---------- ------------------------------ ------------------------------ ---------- ---------- ----------
       523         23 Sabbath                        Darjee                         21-12-1985 9824356354 Male
       524         24 Sasha                          Maharjan                       23-12-1993 9846835468 Female

24 rows selected.
```

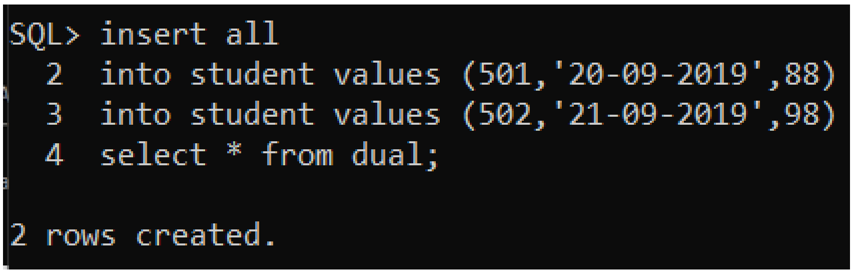
Figure 59 people table

6 Student

```
insert all
into student (503,'20-09-2019',76)
into student (504,'18-09-2019',88)
into student (505,'28-09-2019',78)
into student (506,'19-10-2019',89)
into student (507,'20-09-2019',90)
into student (508,'15-12-2019',87)
into student (509,'17-12-2019',88)
into student (510,'11-12-2019',67)
into student (511,'12-12-2019',70)
into student (512,'09-10-2019,56)
into student (513,'12-01-2020,78)
into student (514,'28-01-2020',50)
into student (515,'20-01-2020',67)
```

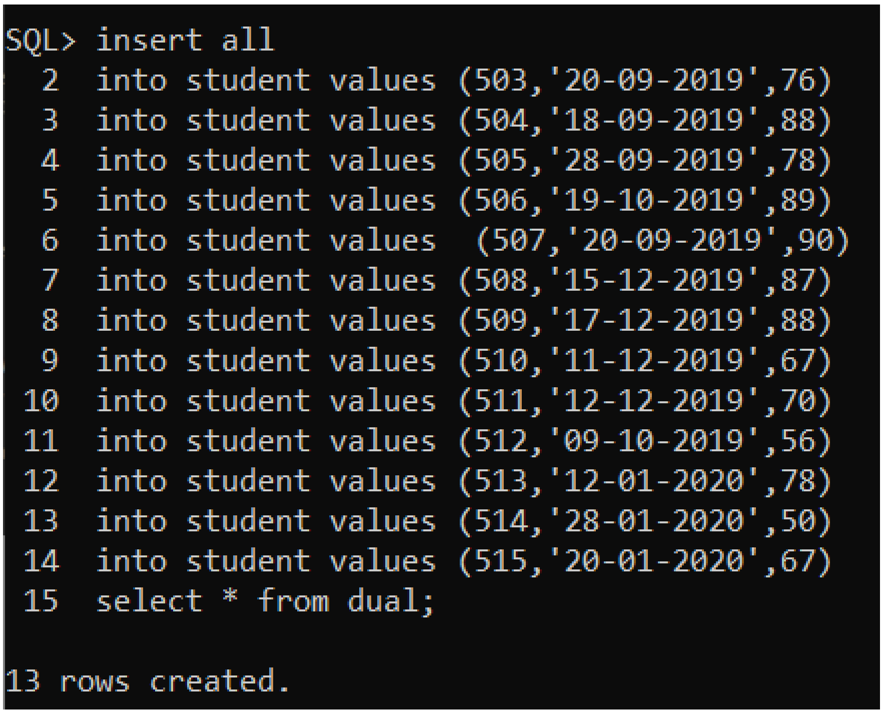
into student (516,'23-10-2019',83)

select * from dual;



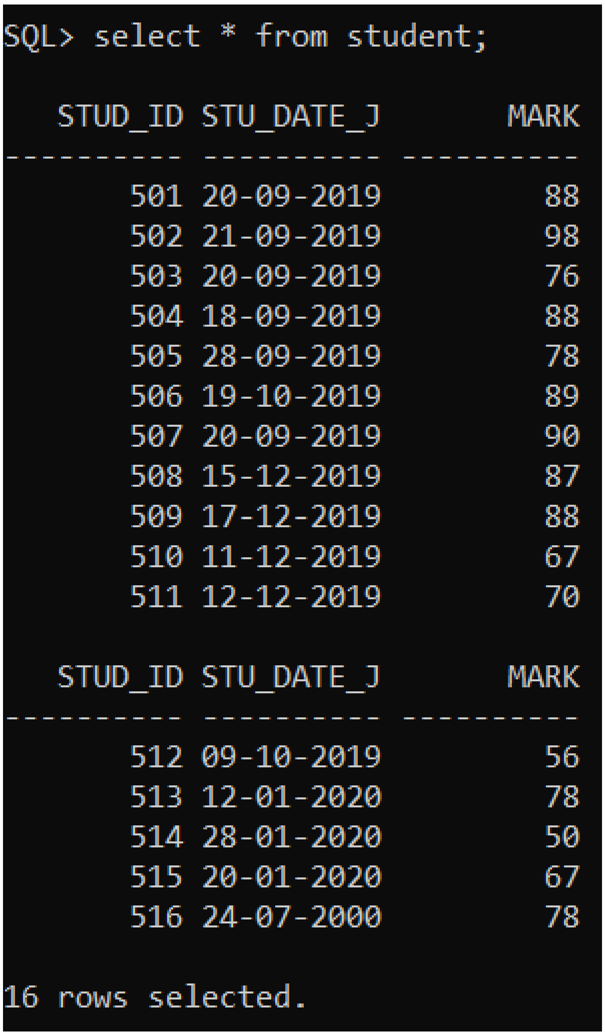
```
SQL> insert all
  2  into student values (501,'20-09-2019',88)
  3  into student values (502,'21-09-2019',98)
  4  select * from dual;

2 rows created.
```

Figure 60inserting into student



```
SQL> insert all
  2  into student values (503,'20-09-2019',76)
  3  into student values (504,'18-09-2019',88)
  4  into student values (505,'28-09-2019',78)
  5  into student values (506,'19-10-2019',89)
  6  into student values  (507,'20-09-2019',90)
  7  into student values (508,'15-12-2019',87)
  8  into student values (509,'17-12-2019',88)
  9  into student values (510,'11-12-2019',67)
 10  into student values (511,'12-12-2019',70)
 11  into student values (512,'09-10-2019',56)
 12  into student values (513,'12-01-2020',78)
 13  into student values (514,'28-01-2020',50)
 14  into student values (515,'20-01-2020',67)
 15  select * from dual;

13 rows created.
```

Figure 61inserting into student;



```
SQL> select * from student;

   STUD_ID STU_DATE_J       MARK
---------- ---------- ----------
       501 20-09-2019         88
       502 21-09-2019         98
       503 20-09-2019         76
       504 18-09-2019         88
       505 28-09-2019         78
       506 19-10-2019         89
       507 20-09-2019         90
       508 15-12-2019         87
       509 17-12-2019         88
       510 11-12-2019         67
       511 12-12-2019         70

   STUD_ID STU_DATE_J       MARK
---------- ---------- ----------
       512 09-10-2019         56
       513 12-01-2020         78
       514 28-01-2020         50
       515 20-01-2020         67
       516 24-07-2000         78

16 rows selected.
```

Figure 62 Student data

7. Instructor

insert all

into instructor values (517,50000)

into instructor values (518,50000)

into instructor values (519,60000)

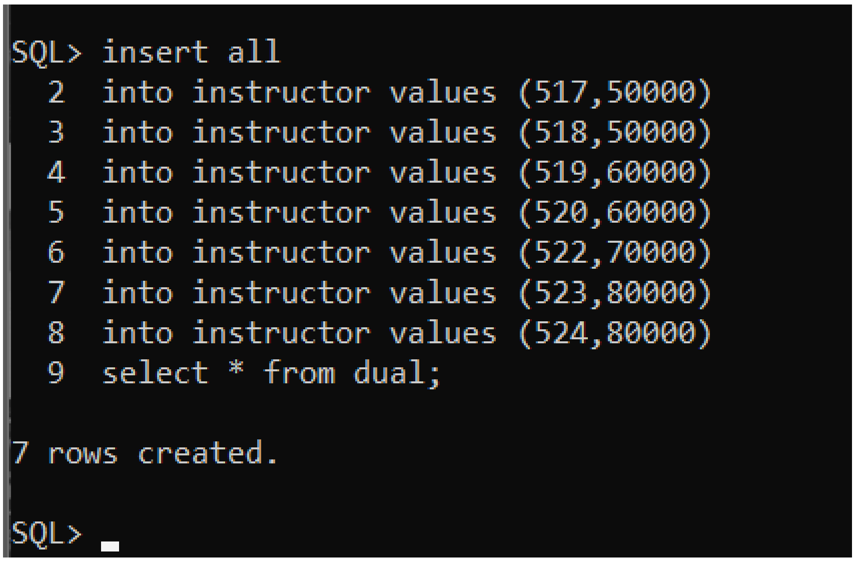
into instructor values (520,60000)

into instructor values (522,70000)

into instructor values (523,80000)

into instructor values (524,80000)

select * from dual;



```
SQL> insert all
  2  into instructor values (517,50000)
  3  into instructor values (518,50000)
  4  into instructor values (519,60000)
  5  into instructor values (520,60000)
  6  into instructor values (522,70000)
  7  into instructor values (523,80000)
  8  into instructor values (524,80000)
  9  select * from dual;

7 rows created.

SQL> _
```

Figure 63 inserting into instructor.

8. Course:

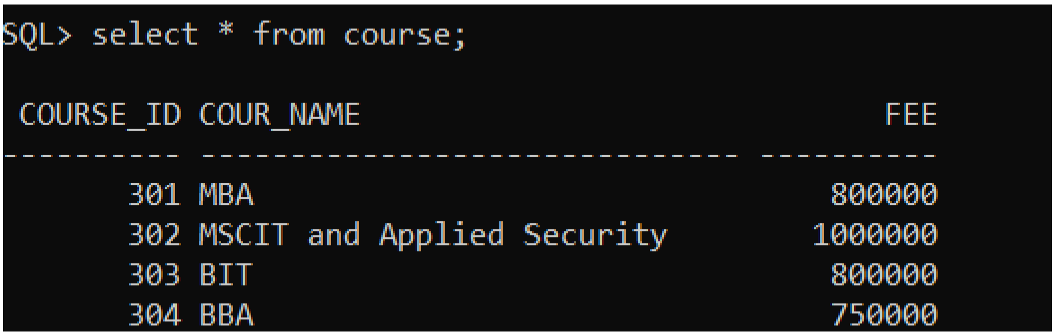
into course values (301,'MBA',800000)

into course values (302,'MSCIT and Applied Security',1000000)

into course values (303,'BIT',800000)

into course values (304,'BBA',750000)

select * from dual;



```
SQL> select * from course;

 COURSE_ID COUR_NAME                             FEE
---------- ------------------------------ ----------
       301 MBA                                800000
       302 MSCIT and Applied Security        1000000
       303 BIT                                800000
       304 BBA                                750000
```

Figure 64inserting into course,

Course_detail

insert all

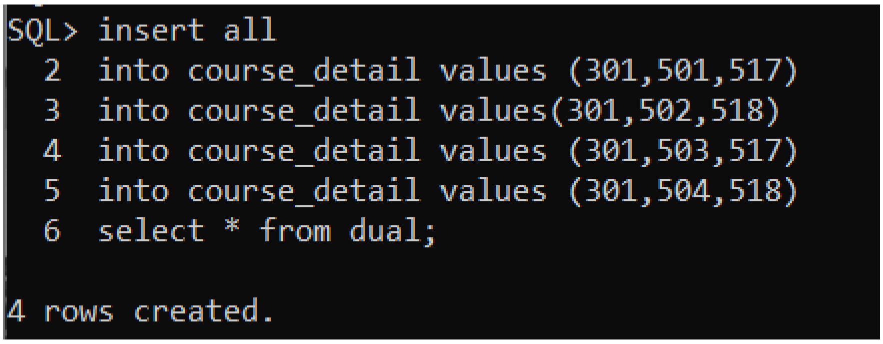
into course_detail values (301,501,517)

into course_detail values(301,502,518)

into course_detail values (301,503,517)

into course_detail values (301,504,518)

select * from dual;



```
SQL> insert all
  into course_detail values (301,501,517)
  into course_detail values(301,502,518)
  into course_detail values (301,503,517)
  into course_detail values (301,504,518)
  select * from dual;

4 rows created.
```

Figure 65 inserting into coruse_detail.

insert all

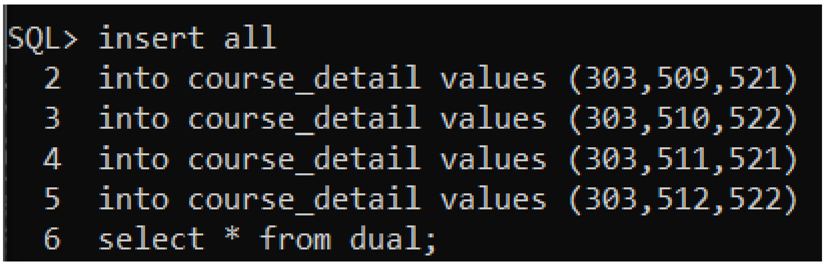
into course_detail values (302,505,519)

into course_detail values (302,506,520)

into course_detail values (302,507, 519)

into course_detail values (302,508,520)

select * from dual;



```
SQL> insert all
  into course_detail values (303,509,521)
  into course_detail values (303,510,522)
  into course_detail values (303,511,521)
  into course_detail values (303,512,522)
  select * from dual;
```

Figure 66 inserting into course_detail.

insert all

into course_detail values (303,509,521)

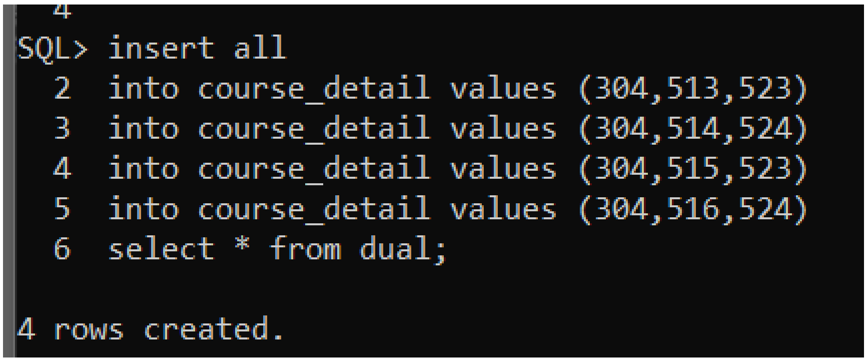
into course_detail values (303,510,522)

into course_detail values (303,511,521)

into course_detail values (303,512,522)

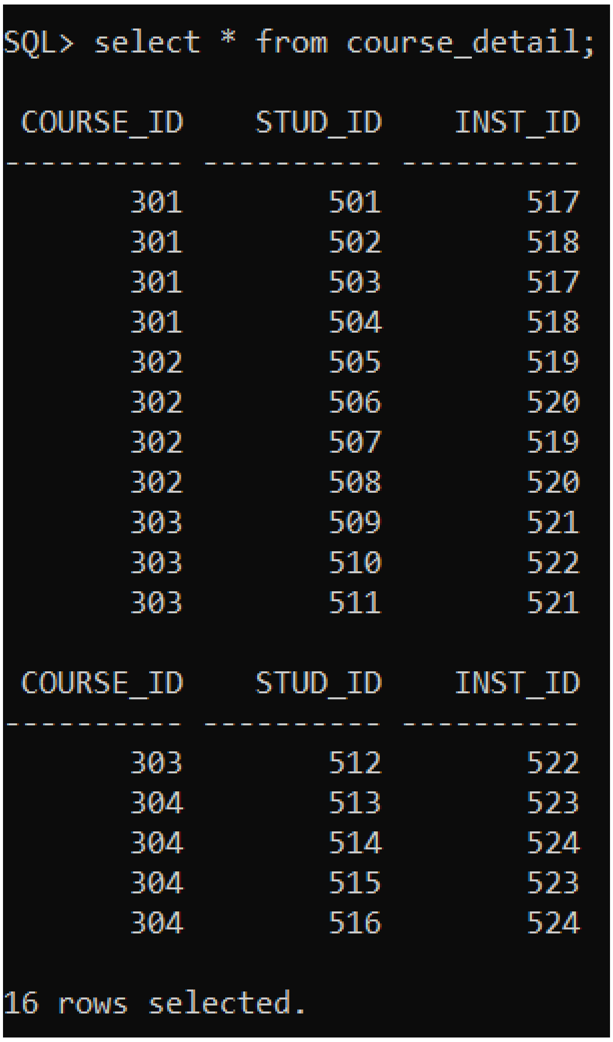
select * from dual;

insert all



```
SQL> insert all
  into course_detail values (304,513,523)
  into course_detail values (304,514,524)
  into course_detail values (304,515,523)
  into course_detail values (304,516,524)
  select * from dual;

4 rows created.
```

Figure 67 inserting into course_detail.



```
SQL> select * from course_detail;

 COURSE_ID    STUD_ID    INST_ID
---------- ---------- ----------
       301        501        517
       301        502        518
       301        503        517
       301        504        518
       302        505        519
       302        506        520
       302        507        519
       302        508        520
       303        509        521
       303        510        522
       303        511        521

 COURSE_ID    STUD_ID    INST_ID
---------- ---------- ----------
       303        512        522
       304        513        523
       304        514        524
       304        515        523
       304        516        524

16 rows selected.
```

Figure 68 Course_detail data.

Command: select * from course_detail;

9.Course_leader

insert all

into course_leader values(

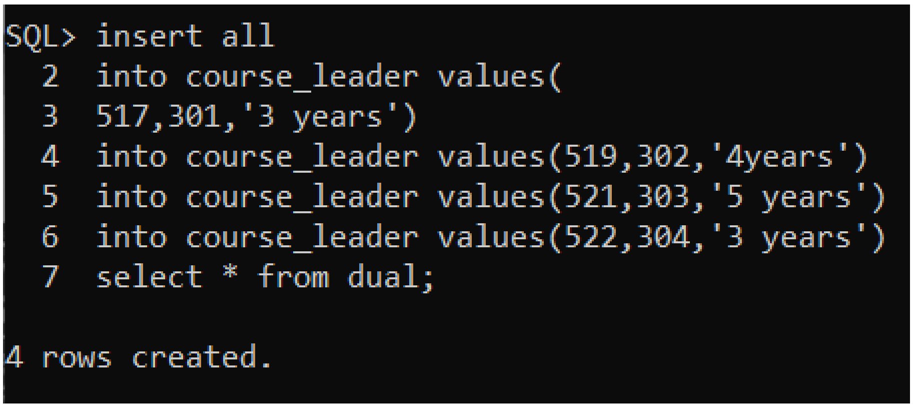
517,301,'3 years')

into course_leader values(519,302,'4years')

into course_leader values(521,303,'5 years')

into course_leader values(522,304,'3 years')

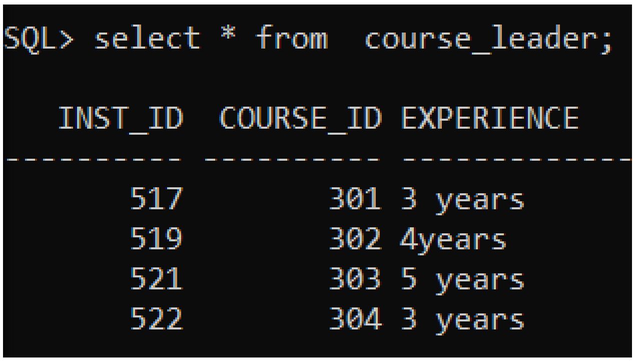
select * from dual;



```
SQL> insert all
  2  into course_leader values(
  3  517,301,'3 years')
  4  into course_leader values(519,302,'4years')
  5  into course_leader values(521,303,'5 years')
  6  into course_leader values(522,304,'3 years')
  7  select * from dual;

4 rows created.
```

Figure 69inserting into course_leader.

Select * from course_leader;



```
SQL> select * from  course_leader;

   INST_ID  COURSE_ID EXPERIENCE
---------- ---------- ------------
       517        301 3 years
       519        302 4years
       521        303 5 years
       522        304 3 years
```

Figure 70 Course_leadre data

10. Specification

insert all

into specification values (201,'Management learning')

into specification values (202,'Accounting and finance')

into specification values (203,'Networking') into specification values (204,'cyber Security')

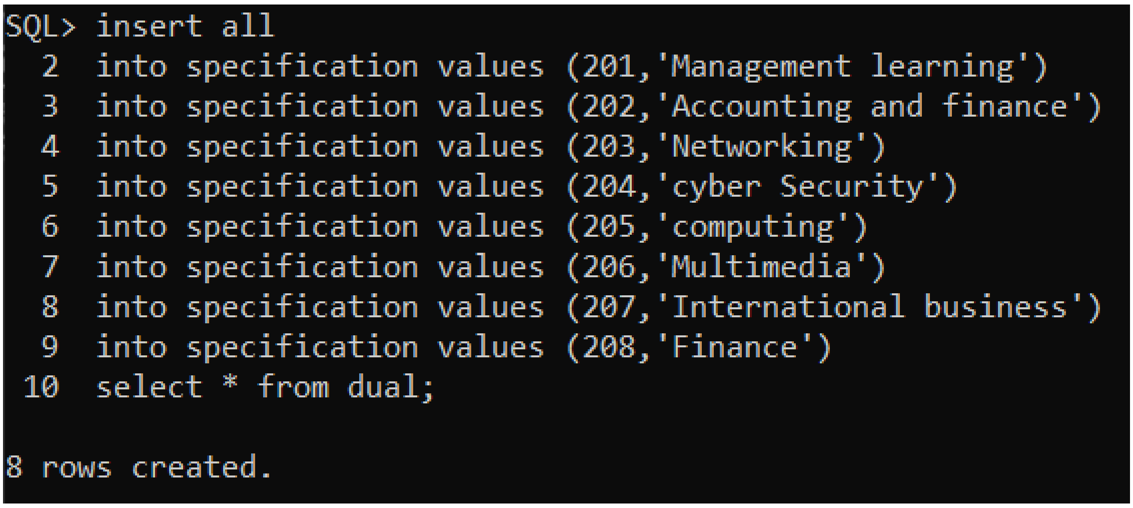
into specification values (205,'computing')

into specification values (206,'Multimedia')

into specification values (207,'International business')

into specification values (208,'Finance')

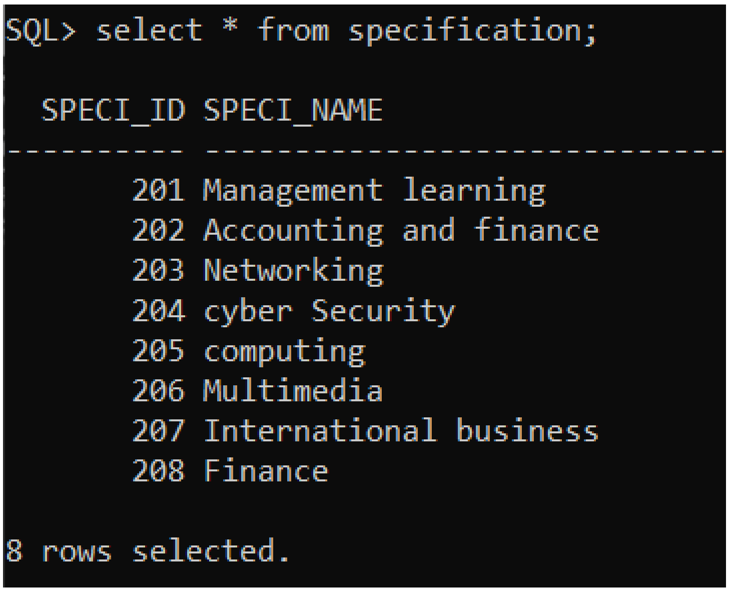
select * from dual;



```
SQL> insert all
     into specification values (201,'Management learning')
     into specification values (202,'Accounting and finance')
     into specification values (203,'Networking')
     into specification values (204,'cyber Security')
     into specification values (205,'computing')
     into specification values (206,'Multimedia')
     into specification values (207,'International business')
     into specification values (208,'Finance')
     select * from dual;

8 rows created.
```

Figure 71inserting into specification.

Select * from specification;

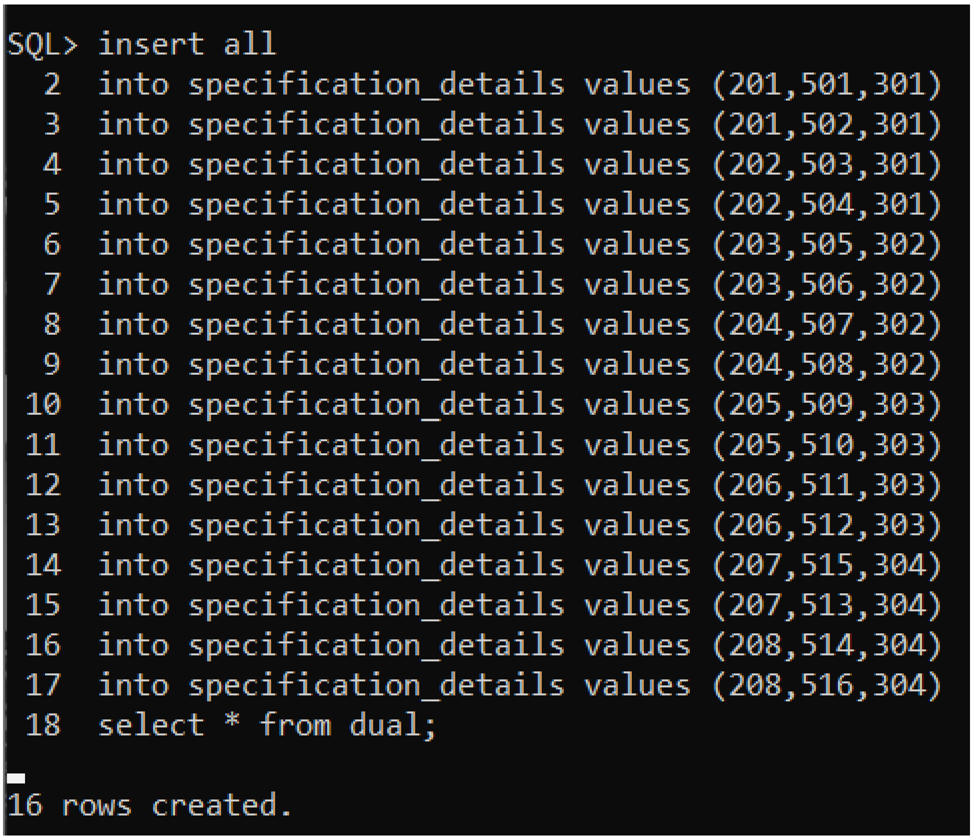


```
SQL> select * from specification;

  SPECI_ID SPECI_NAME
---------- ------------------------------
       201 Management learning
       202 Accounting and finance
       203 Networking
       204 cyber Security
       205 computing
       206 Multimedia
       207 International business
       208 Finance

8 rows selected.
```

Figure 72 Specification data

11. Specification_details

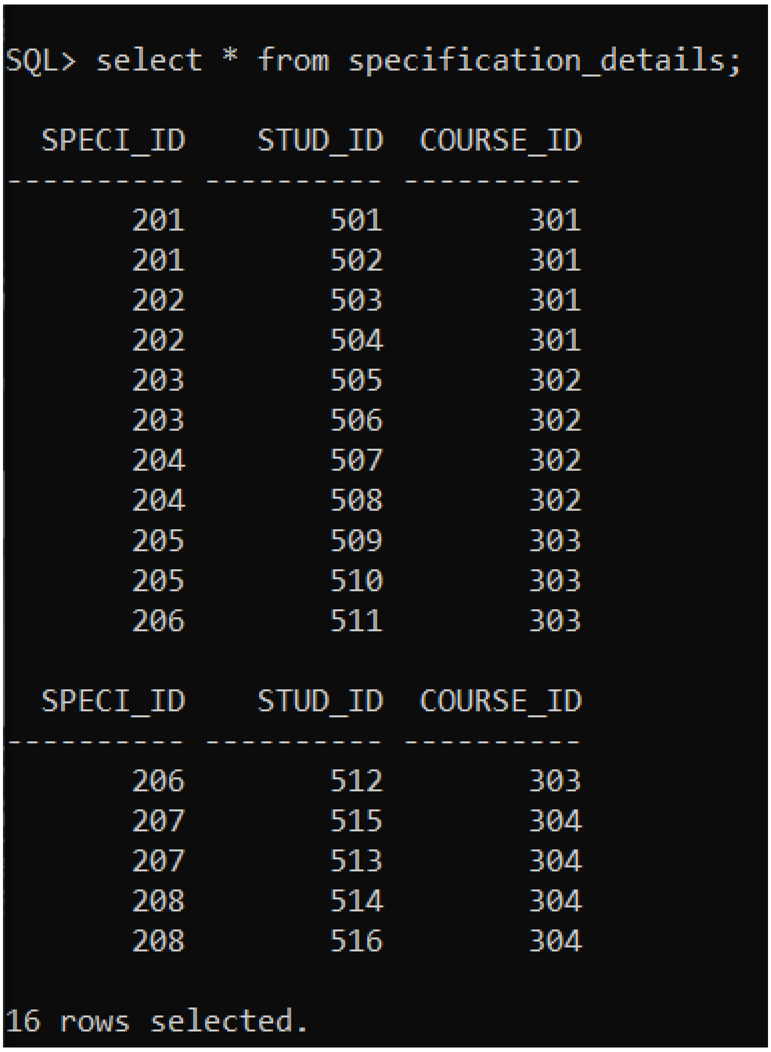
```
insert all
into specification_details values (201,501,301)
into specification_details values (201,502,301)
 into specification_details values (202,503,301)
    into specification_details values (202,504,301)
into specification_details values (203,505,302)
into specification_details values (203,506,302)
into specification_details values (204,507,302)
into specification_details values (204,508,302)
into specification_details values (205,509,303)
into specification_details values (205,510,303)
into specification_details values (206,511,303)
into specification_details values (206,512,303)
into specification_details values (207,515,304)
into specification_details values (207,513,304)
into specification_details values (208,514,304)
   into specification_details values (208,516,304)
select * from dual;
```



```
SQL> insert all
into specification_details values (201,501,301)
into specification_details values (201,502,301)
into specification_details values (202,503,301)
into specification_details values (202,504,301)
into specification_details values (203,505,302)
into specification_details values (203,506,302)
into specification_details values (204,507,302)
into specification_details values (204,508,302)
into specification_details values (205,509,303)
into specification_details values (205,510,303)
into specification_details values (206,511,303)
into specification_details values (206,512,303)
into specification_details values (207,515,304)
into specification_details values (207,513,304)
into specification_details values (208,514,304)
into specification_details values (208,516,304)
select * from dual;

16 rows created.
```

Figure 73 inserting into specification_details.

Select * from specification_details;



```
SQL> select * from specification_details;

  SPECI_ID    STUD_ID  COURSE_ID
---------- ---------- ----------
       201        501        301
       201        502        301
       202        503        301
       202        504        301
       203        505        302
       203        506        302
       204        507        302
       204        508        302
       205        509        303
       205        510        303
       206        511        303

  SPECI_ID    STUD_ID  COURSE_ID
---------- ---------- ----------
       206        512        303
       207        515        304
       207        513        304
       208        514        304
       208        516        304

16 rows selected.
```

Figure 74 Specification_details.

Specification instructor;

insert all

into specification_instructor values (201,517)

into specification_instructor values (202,518)

into specification_instructor values (203,519)

into specification_instructor values (204,520)

into specification_instructor values (205,521)

into specification_instructor values (206,522)

into specification_instructor values (207,523)

into specification_instructor values (208,524)

into specification_instructor values (201,518) into specification_instructor values (202,517)

into specification_instructor values (203,520)

into specification_instructor values (204,519)

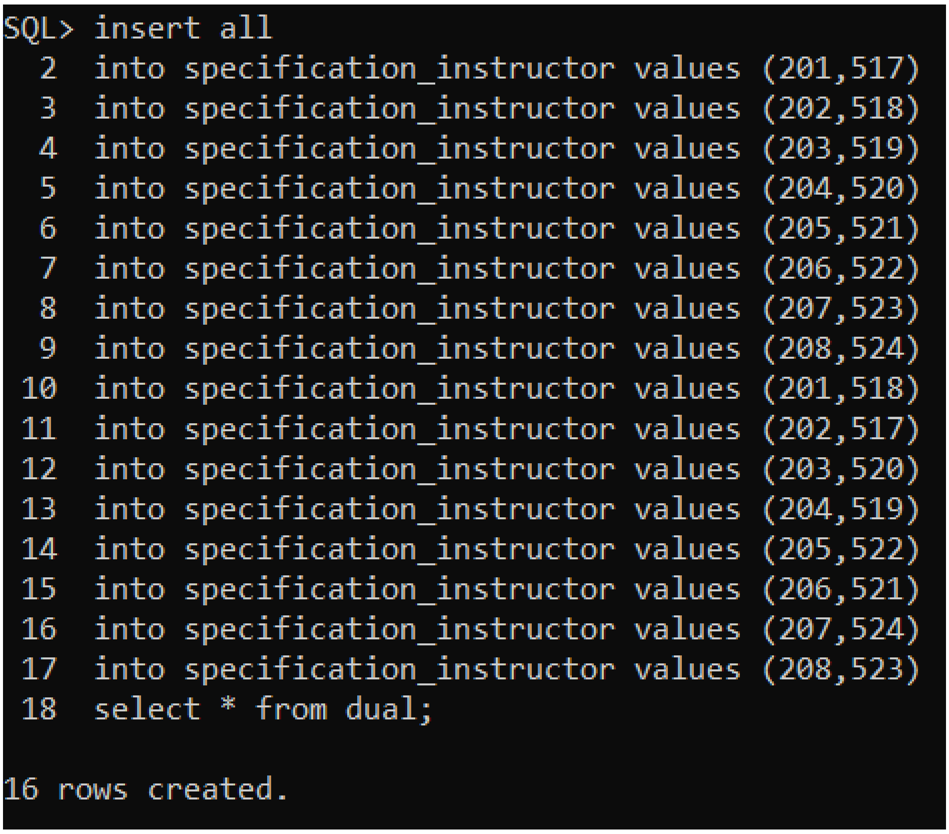
into specification_instructor values (205,522)

into specification_instructor values (206,521)

into specification_instructor values (207,524)

into specification_instructor values (208,523)

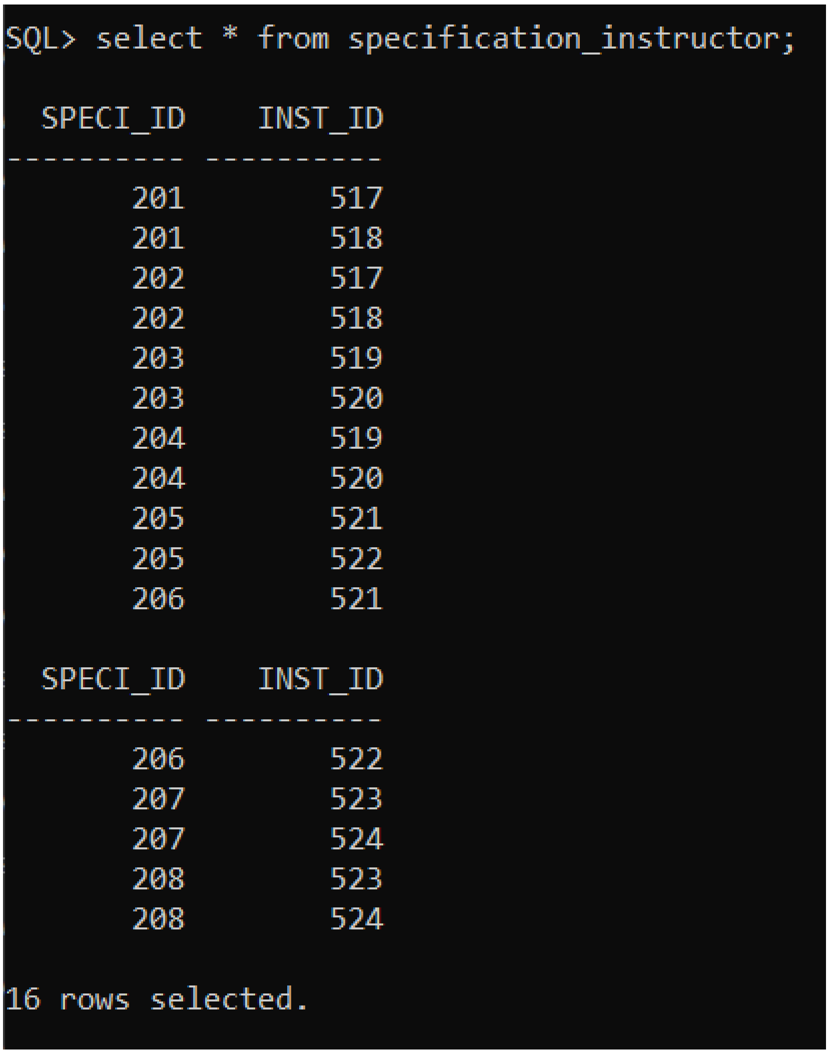
select * from dual;



```
SQL> insert all
     into specification_instructor values (201,517)
     into specification_instructor values (202,518)
     into specification_instructor values (203,519)
     into specification_instructor values (204,520)
     into specification_instructor values (205,521)
     into specification_instructor values (206,522)
     into specification_instructor values (207,523)
     into specification_instructor values (208,524)
     into specification_instructor values (201,518)
     into specification_instructor values (202,517)
     into specification_instructor values (203,520)
     into specification_instructor values (204,519)
     into specification_instructor values (205,522)
     into specification_instructor values (206,521)
     into specification_instructor values (207,524)
     into specification_instructor values (208,523)
     select * from dual;

16 rows created.
```

Figure 75 Inserting into specification_instructor;

Select * from specification_instructor;



```
SQL> select * from specification_instructor;

  SPECI_ID    INST_ID
---------- ----------
       201        517
       201        518
       202        517
       202        518
       203        519
       203        520
       204        519
       204        520
       205        521
       205        522
       206        521

  SPECI_ID    INST_ID
---------- ----------
       206        522
       207        523
       207        524
       208        523
       208        524

16 rows selected.
```

Figure 76 specification_instructor data

12.Class

insert all

into class values (101,'Naruto')

into class values (102,'Sasuke')

into class values (103,'Sakura')

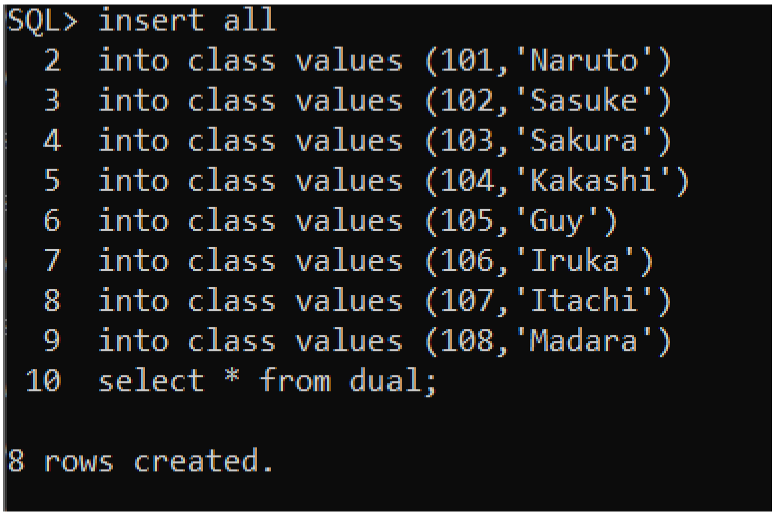
into class values (104,'Kakashi')

into 6 class values (105,'Guy')

into class values (106,'Iruka')

into class values (107,'Itachi')

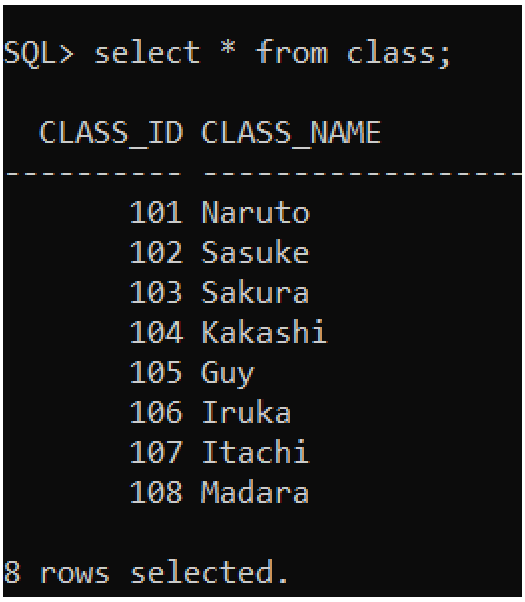
into class values (108,'Madara')



```
SQL> insert all
  into class values (101,'Naruto')
  into class values (102,'Sasuke')
  into class values (103,'Sakura')
  into class values (104,'Kakashi')
  into class values (105,'Guy')
  into class values (106,'Iruka')
  into class values (107,'Itachi')
  into class values (108,'Madara')
  select * from dual;

8 rows created.
```

Figure 77 inserting into class

select * from dual;



```
SQL> select * from class;

  CLASS_ID CLASS_NAME
---------- ------------------
       101 Naruto
       102 Sasuke
       103 Sakura
       104 Kakashi
       105 Guy
       106 Iruka
       107 Itachi
       108 Madara

8 rows selected.
```

Figure 78 Class table data

select * from class;

13.Module

insert all

into module values (804,'Account',102)

into module values (805,'Money Ethics',102)

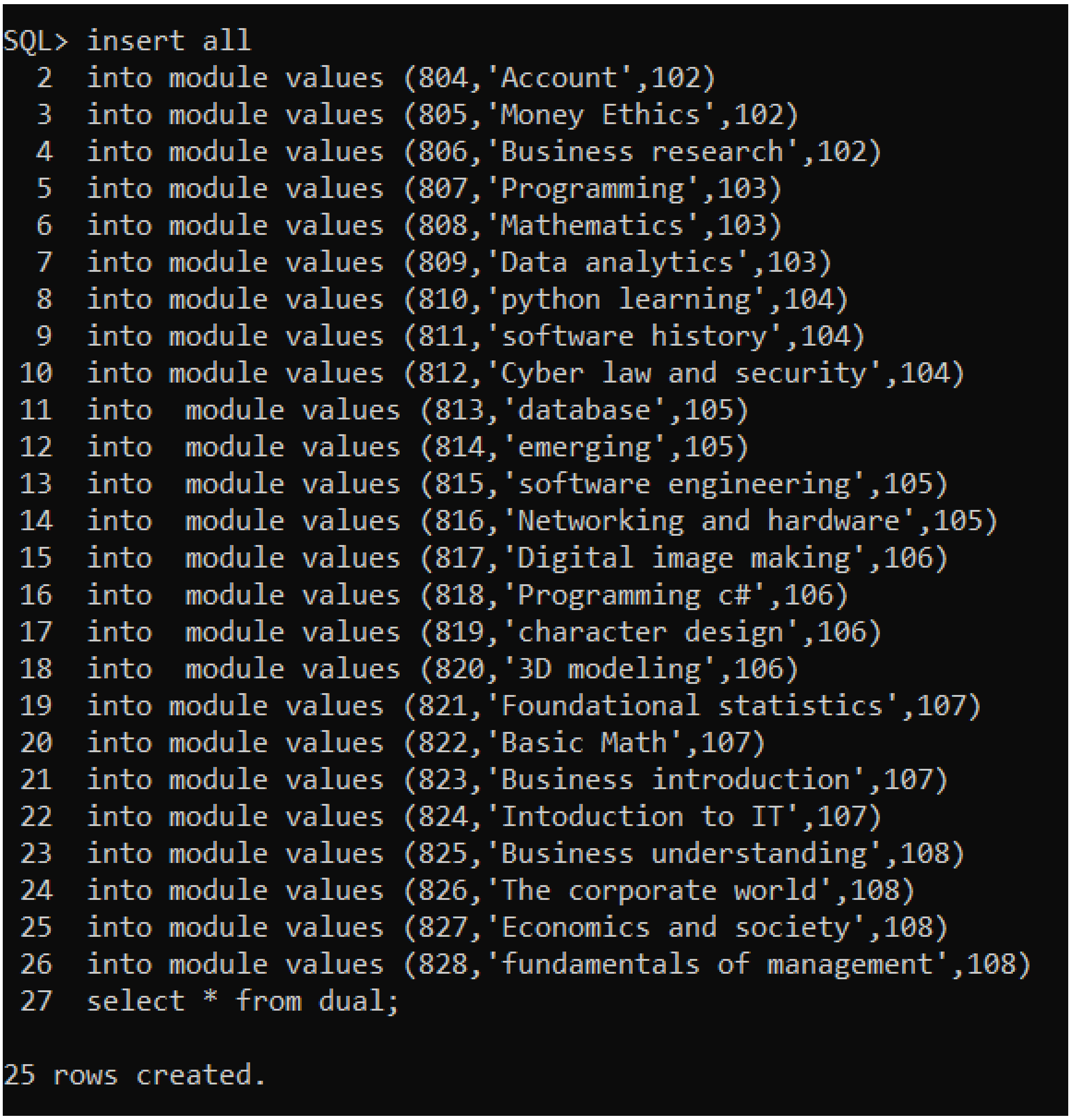
into module values (806,'Business research',102)

into module values (807,'Programming',103)

into module values (808,'Mathematics',103)

into module values (809,'Data analytics',103)

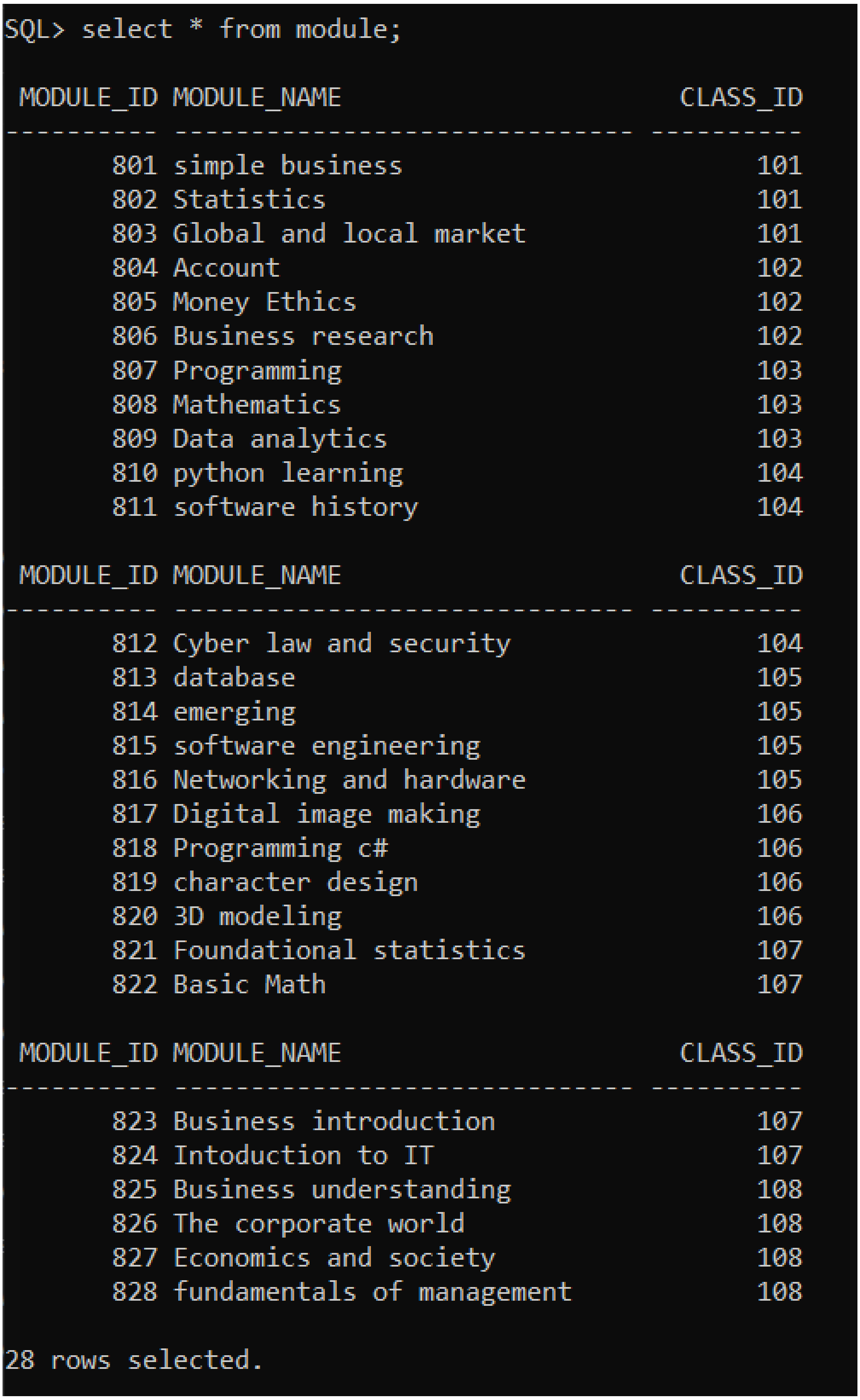
```
into module values (810,'python learning',104)
into module values (811,'software history',104)
into module values (812,'Cyber law and security',104)
into  module values (813,'database',105)
into  module values (814,'emerging',105)
into  module values (815,'software engineering',105)
into  module values (816,'Networking and hardware',105)
into  module values (817,'Digital image making',106)
into  module values (818,'Programming c#',106)
into  module values (819,'character design',106)
into  module values (820,'3D modeling',106)
into module values (821,'Foundational statistics',107)
into module values (822,'Basic Math',107)
into module values (823,'Business introduction',107)
into module values (824,'Intoduction to IT',107)
into module values (825,'Business understanding',108)
into module values (826,'The corporate world',108)
into module values (827,'Economics and society',108)
into module values (828,'fundamentals of management',108)
```



```
SQL> insert all
into module values (804,'Account',102)
into module values (805,'Money Ethics',102)
into module values (806,'Business research',102)
into module values (807,'Programming',103)
into module values (808,'Mathematics',103)
into module values (809,'Data analytics',103)
into module values (810,'python learning',104)
into module values (811,'software history',104)
into module values (812,'Cyber law and security',104)
into  module values (813,'database',105)
into  module values (814,'emerging',105)
into  module values (815,'software engineering',105)
into  module values (816,'Networking and hardware',105)
into  module values (817,'Digital image making',106)
into  module values (818,'Programming c#',106)
into  module values (819,'character design',106)
into  module values (820,'3D modeling',106)
into module values (821,'Foundational statistics',107)
into module values (822,'Basic Math',107)
into module values (823,'Business introduction',107)
into module values (824,'Intoduction to IT',107)
into module values (825,'Business understanding',108)
into module values (826,'The corporate world',108)
into module values (827,'Economics and society',108)
into module values (828,'fundamentals of management',108)
select * from dual;

25 rows created.
```

Figure 79 inserting into module

select * from dual;

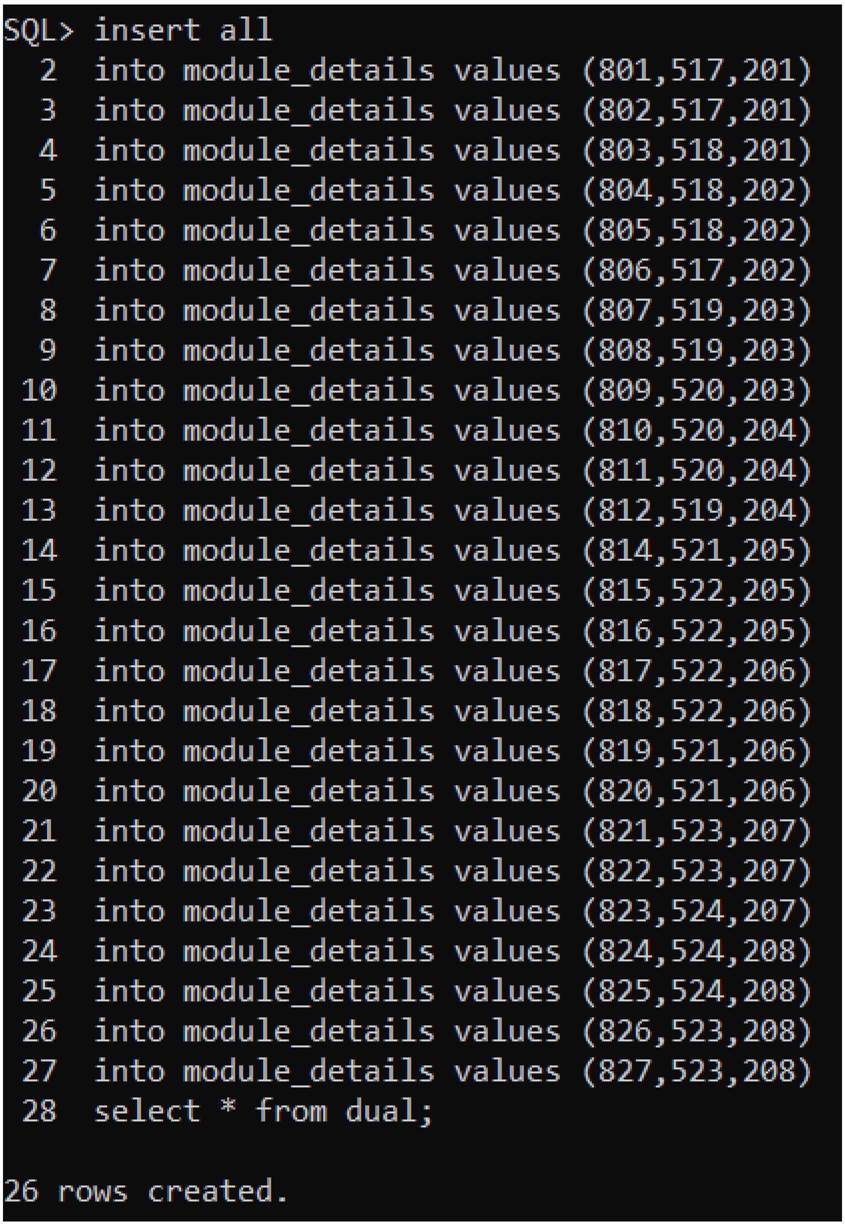


```
SQL> select * from module;

 MODULE_ID MODULE_NAME                       CLASS_ID
---------- ------------------------------ ----------
       801 simple business                       101
       802 Statistics                            101
       803 Global and local market               101
       804 Account                               102
       805 Money Ethics                          102
       806 Business research                     102
       807 Programming                           103
       808 Mathematics                           103
       809 Data analytics                        103
       810 python learning                       104
       811 software history                      104

 MODULE_ID MODULE_NAME                       CLASS_ID
---------- ------------------------------ ----------
       812 Cyber law and security                104
       813 database                              105
       814 emerging                              105
       815 software engineering                  105
       816 Networking and hardware               105
       817 Digital image making                  106
       818 Programming c#                        106
       819 character design                      106
       820 3D modeling                           106
       821 Foundational statistics               107
       822 Basic Math                            107

 MODULE_ID MODULE_NAME                       CLASS_ID
---------- ------------------------------ ----------
       823 Business introduction                 107
       824 Intoduction to IT                     107
       825 Business understanding                108
       826 The corporate world                   108
       827 Economics and society                 108
       828 fundamentals of management            108

28 rows selected.
```

Figure 80 Module data table

14.Module Details

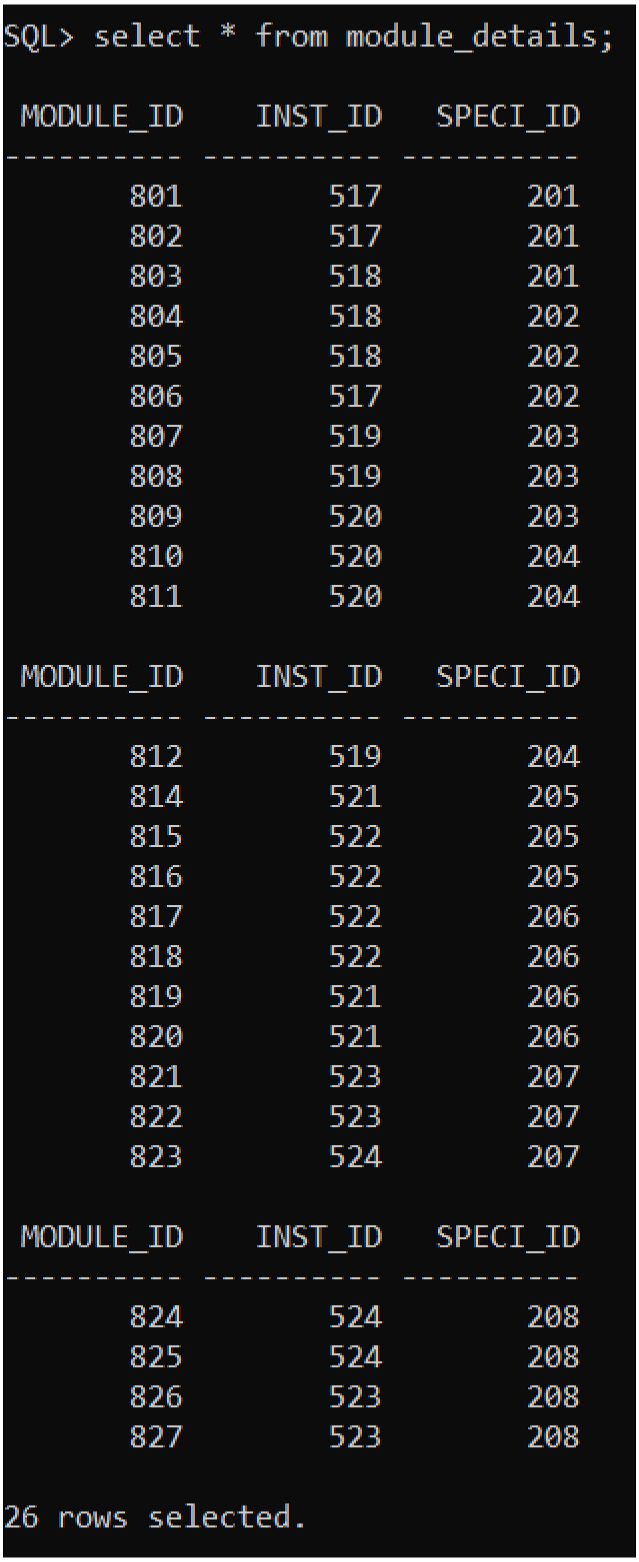
```
insert all
into module_details values (801,517,201)
into module_details values (802,517,201)
into module_details values (803,518,201)
into module_details values (804,518,202)
into module_details values (805,518,202)
into module_details values (806,517,202)
into module_details values (807,519,203)
into module_details values (808,519,203)
into module_details values (809,520,203)
into module_details values (810,520,204)
into module_details values (811,520,204)
into module_details values (812,519,204)
into module_details values (814,521,205)
into module_details values (815,522,205)
into module_details values (816,522,205)
into module_details values (817,522,206)
into module_details values (818,522,206)
into module_details values (819,521,206)
into module_details values (820,521,206)
into module_details values (821,523,207)
into module_details values (822,523,207)
into module_details values (823,524,207)
into module_details values (824,524,208)
into module_details values (825,524,208)
into module_details values (826,523,208)
into module_details values (827,523,208)
select * from dual;
```



```
SQL> insert all
  2  into module_details values (801,517,201)
  3  into module_details values (802,517,201)
  4  into module_details values (803,518,201)
  5  into module_details values (804,518,202)
  6  into module_details values (805,518,202)
  7  into module_details values (806,517,202)
  8  into module_details values (807,519,203)
  9  into module_details values (808,519,203)
 10  into module_details values (809,520,203)
 11  into module_details values (810,520,204)
 12  into module_details values (811,520,204)
 13  into module_details values (812,519,204)
 14  into module_details values (814,521,205)
 15  into module_details values (815,522,205)
 16  into module_details values (816,522,205)
 17  into module_details values (817,522,206)
 18  into module_details values (818,522,206)
 19  into module_details values (819,521,206)
 20  into module_details values (820,521,206)
 21  into module_details values (821,523,207)
 22  into module_details values (822,523,207)
 23  into module_details values (823,524,207)
 24  into module_details values (824,524,208)
 25  into module_details values (825,524,208)
 26  into module_details values (826,523,208)
 27  into module_details values (827,523,208)
 28  select * from dual;

26 rows created.
```

Figure 81 Inserting into module_details

Select * from module_details;



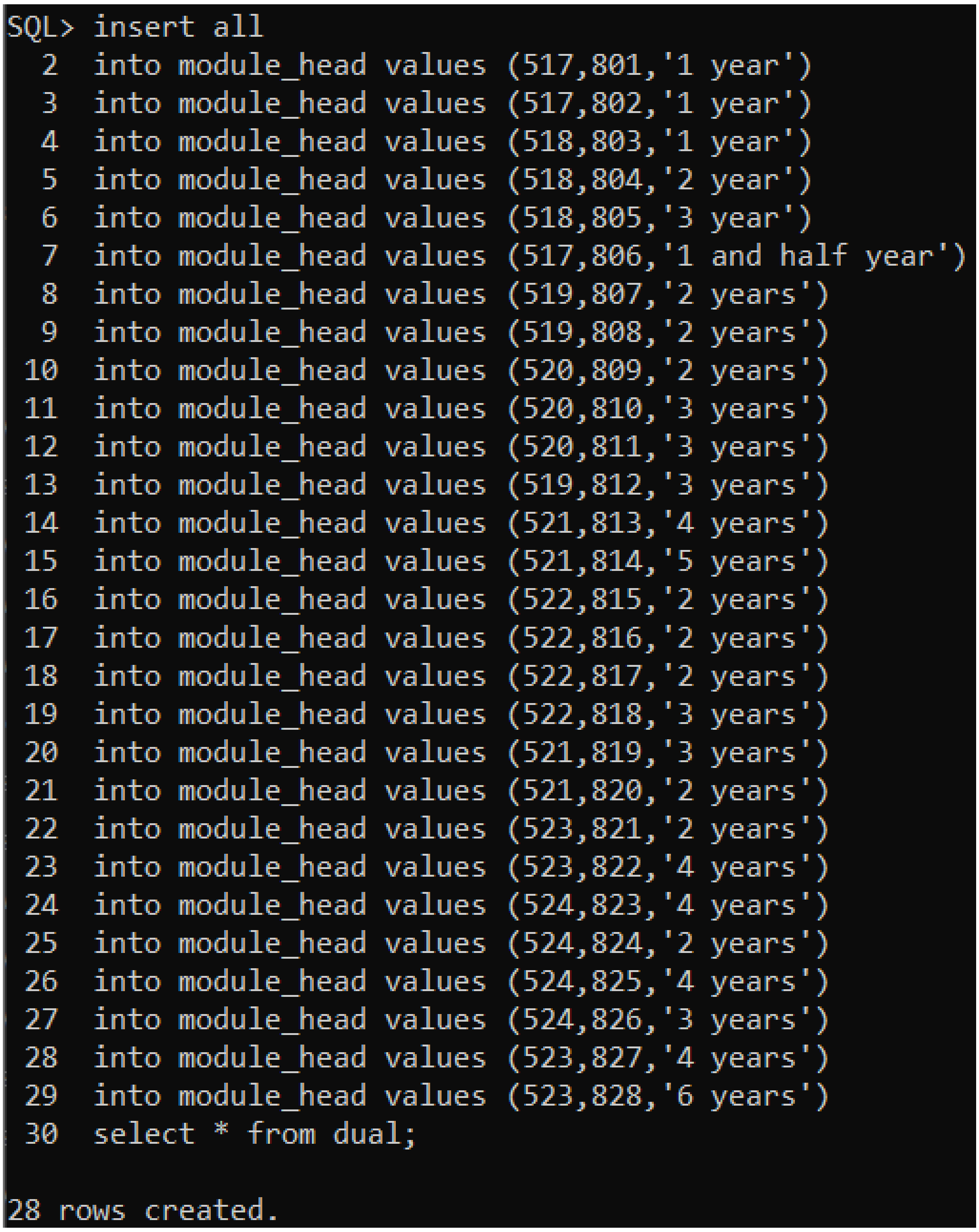
```
SQL> select * from module_details;

 MODULE_ID    INST_ID   SPECI_ID
---------- ---------- ----------
       801        517        201
       802        517        201
       803        518        201
       804        518        202
       805        518        202
       806        517        202
       807        519        203
       808        519        203
       809        520        203
       810        520        204
       811        520        204

 MODULE_ID    INST_ID   SPECI_ID
---------- ---------- ----------
       812        519        204
       814        521        205
       815        522        205
       816        522        205
       817        522        206
       818        522        206
       819        521        206
       820        521        206
       821        523        207
       822        523        207
       823        524        207

 MODULE_ID    INST_ID   SPECI_ID
---------- ---------- ----------
       824        524        208
       825        524        208
       826        523        208
       827        523        208

26 rows selected.
```

Figure 82 Module_details data

15.Module head:

insert all

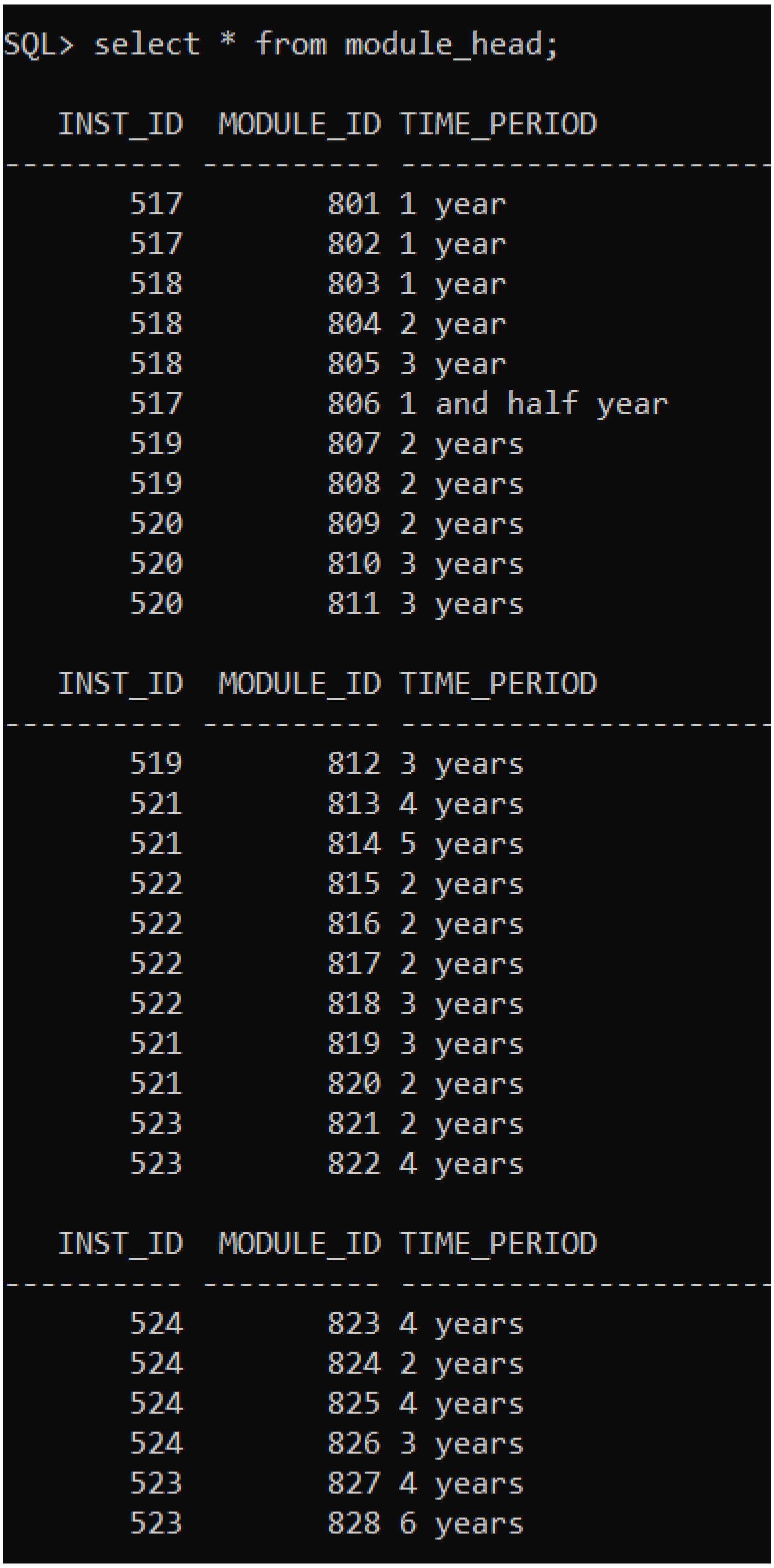
```
into module_head values (517,801,'1 year')
into module_head values (517,802,'1 year')
into module_head values (518,803,'1 year')
into module_head values (518,804,'2 year')
into module_head values (518,805,'3 year')
into module_head values (517,806,'1 and half year')
into module_head values (519,807,'2 years')
into module_head values (519,808,'2 years')
into module_head values (520,809,'2 years')
into module_head values (520,810,'3 years')
into module_head values (520,811,'3 years')
into module_head values (519,812,'3 years')
into module_head values (521,813,'4 years')
into module_head values (521,814,'5 years')
into module_head values (522,815,'2 years')
into module_head values (522,816,'2 years')
into module_head values (522,817,'2 years')
into module_head values (522,818,'3 years')
 into module_head values (521,819,'3 years')
into module_head values (521,820,'2 years')
into module_head values (523,821,'2 years')
into module_head values (523,822,'4 years')
into module_head values (524,823,'4 years')
into module_head values (524,824,'2 years')
into module_head values (524,825,'4 years')
into module_head values (524,826,'3 years')
into module_head values (523,827,'4 years')
into module_head values (523,828,'6 years')
select * from dual;
```



```
SQL> insert all
     into module_head values (517,801,'1 year')
     into module_head values (517,802,'1 year')
     into module_head values (518,803,'1 year')
     into module_head values (518,804,'2 year')
     into module_head values (518,805,'3 year')
     into module_head values (517,806,'1 and half year')
     into module_head values (519,807,'2 years')
     into module_head values (519,808,'2 years')
     into module_head values (520,809,'2 years')
     into module_head values (520,810,'3 years')
     into module_head values (520,811,'3 years')
     into module_head values (519,812,'3 years')
     into module_head values (521,813,'4 years')
     into module_head values (521,814,'5 years')
     into module_head values (522,815,'2 years')
     into module_head values (522,816,'2 years')
     into module_head values (522,817,'2 years')
     into module_head values (522,818,'3 years')
     into module_head values (521,819,'3 years')
     into module_head values (521,820,'2 years')
     into module_head values (523,821,'2 years')
     into module_head values (523,822,'4 years')
     into module_head values (524,823,'4 years')
     into module_head values (524,824,'2 years')
     into module_head values (524,825,'4 years')
     into module_head values (524,826,'3 years')
     into module_head values (523,827,'4 years')
     into module_head values (523,828,'6 years')
     select * from dual;

28 rows created.
```

Figure 83 Inserting into module_head

Select * from module_head;



```
SQL> select * from module_head;

   INST_ID  MODULE_ID TIME_PERIOD
---------- ---------- --------------------
       517        801 1 year
       517        802 1 year
       518        803 1 year
       518        804 2 year
       518        805 3 year
       517        806 1 and half year
       519        807 2 years
       519        808 2 years
       520        809 2 years
       520        810 3 years
       520        811 3 years

   INST_ID  MODULE_ID TIME_PERIOD
---------- ---------- --------------------
       519        812 3 years
       521        813 4 years
       521        814 5 years
       522        815 2 years
       522        816 2 years
       522        817 2 years
       522        818 3 years
       521        819 3 years
       521        820 2 years
       523        821 2 years
       523        822 4 years

   INST_ID  MODULE_ID TIME_PERIOD
---------- ---------- --------------------
       524        823 4 years
       524        824 2 years
       524        825 4 years
       524        826 3 years
       523        827 4 years
       523        828 6 years
```

Figure 84 Module_head data

16. Inst_module;

insert all

into inst_module values (801,519)

into inst_module values (802,518)

into inst_module values (801,520)

into inst_module values (803,518)

into inst_module values (802,524)

into inst_module values (803,517)

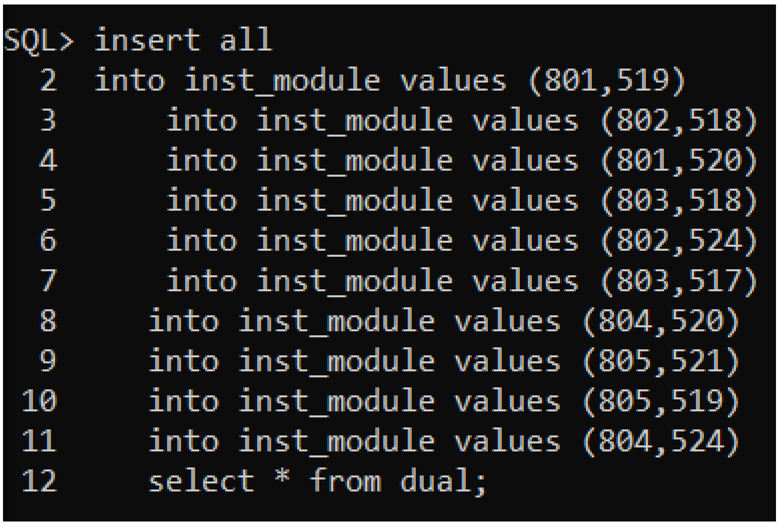
into inst_module values (804,520)

into inst_module values (805,521)

into inst_module values (805,519)

into inst_module values (804,524)

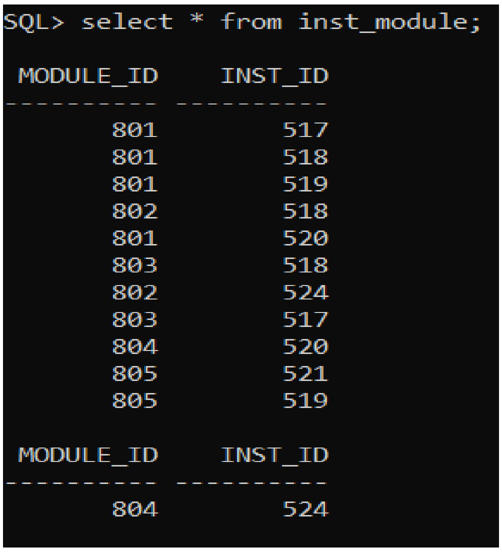
select * from dual



```
SQL> insert all
     into inst_module values (801,519)
         into inst_module values (802,518)
         into inst_module values (801,520)
         into inst_module values (803,518)
         into inst_module values (802,524)
         into inst_module values (803,517)
        into inst_module values (804,520)
        into inst_module values (805,521)
        into inst_module values (805,519)
        into inst_module values (804,524)
        select * from dual;
```

Figure 85 Inserting into inst_module

Select * from inst_module;



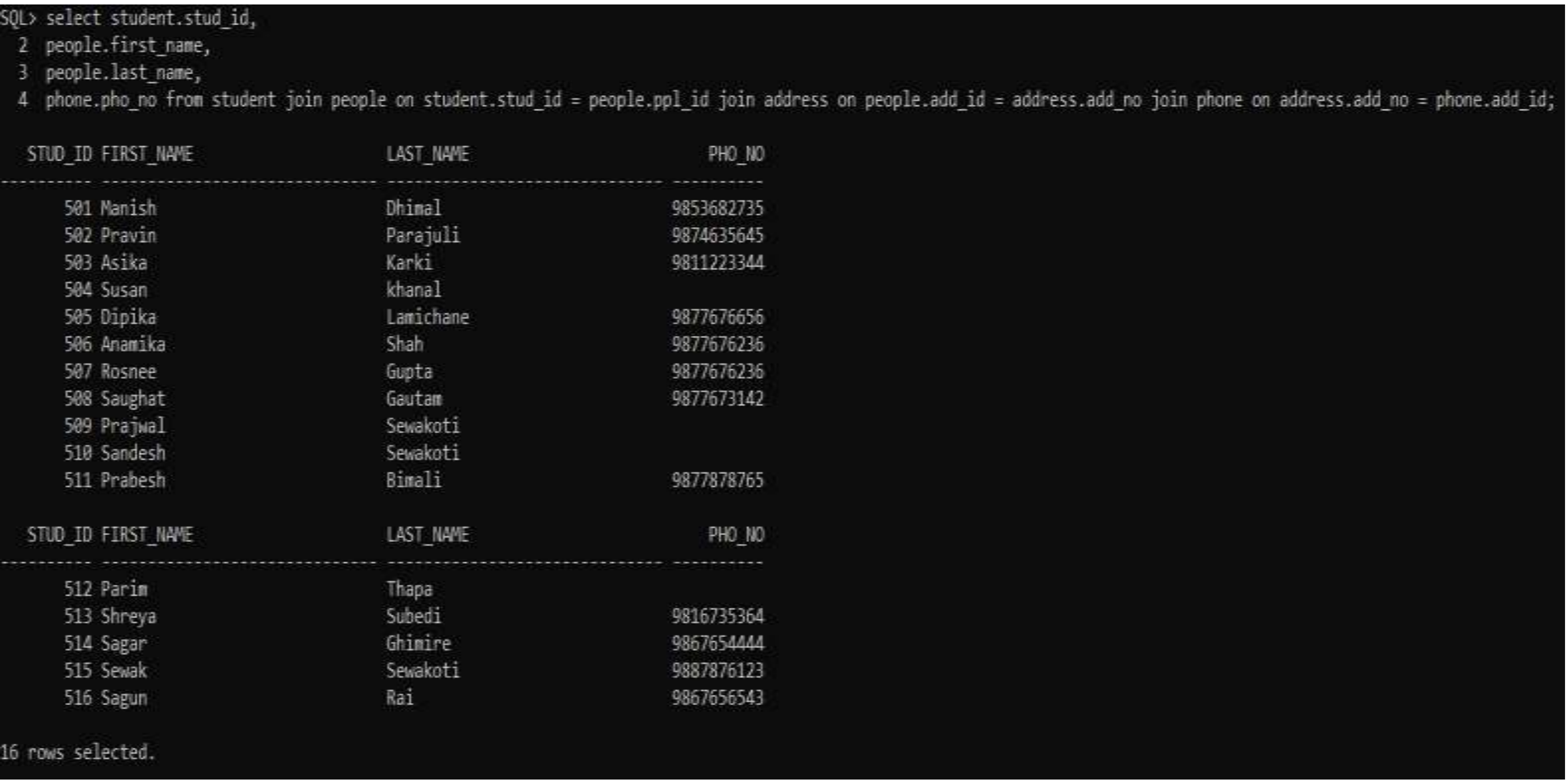
```
SQL> select * from inst_module;

 MODULE_ID    INST_ID
---------- ----------
       801        517
       801        518
       801        519
       802        518
       801        520
       803        518
       802        524
       803        517
       804        520
       805        521
       805        519

 MODULE_ID    INST_ID
---------- ----------
       804        524
```

Figure 86 inst_module data table

Information queries

I. List all the students with all their addresses with their phone numbers.

```
select student.stud_id,
 people.first_name,
 people.last_name,
 phone.pho_no from student join people on student.stud_id = people.ppl_id join address on
people.add_id = address.add_no join phone on address.add_no = phone.add_id;
```

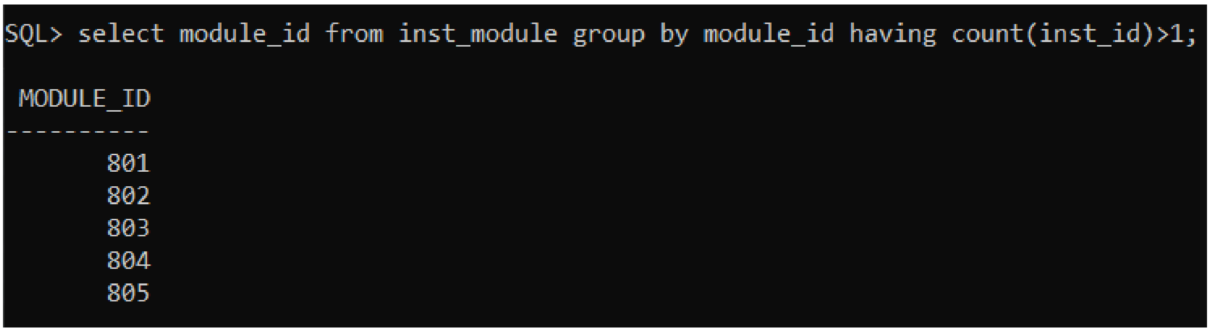


```
SQL> select student.stud_id,
     people.first_name,
     people.last_name,
     phone.pho_no from student join people on student.stud_id = people.ppl_id join address on people.add_id = address.add_no join phone on address.add_no = phone.add_id;

   STUD_ID FIRST_NAME                     LAST_NAME                          PHO_NO
---------- ------------------------------ ------------------------------ ----------
       501 Manish                         Dhimal                         9853682735
       502 Pravin                         Parajuli                       9874635645
       503 Asika                          Karki                          9811223344
       504 Susan                          khanal
       505 Dipika                         Lamichane                      9877676656
       506 Anamika                        Shah                           9877676236
       507 Rosnee                         Gupta                          9877676236
       508 Saughat                        Gautam                         9877673142
       509 Prajwal                        Sewakoti
       510 Sandesh                        Sewakoti
       511 Prabesh                        Bimali                         9877878765

   STUD_ID FIRST_NAME                     LAST_NAME                          PHO_NO
---------- ------------------------------ ------------------------------ ----------
       512 Parim                          Thapa
       513 Shreya                         Subedi                         9816735364
       514 Sagar                          Ghimire                        9867654444
       515 Sewak                          Sewakoti                       9887876123
       516 Sagun                          Rai                            9867656543

16 rows selected.
```

Figure 87 Information query 1

II. List all the modules which are taught by more than one instructor.

Select module_id inst_module group by module_id having count(inst_id)>1;

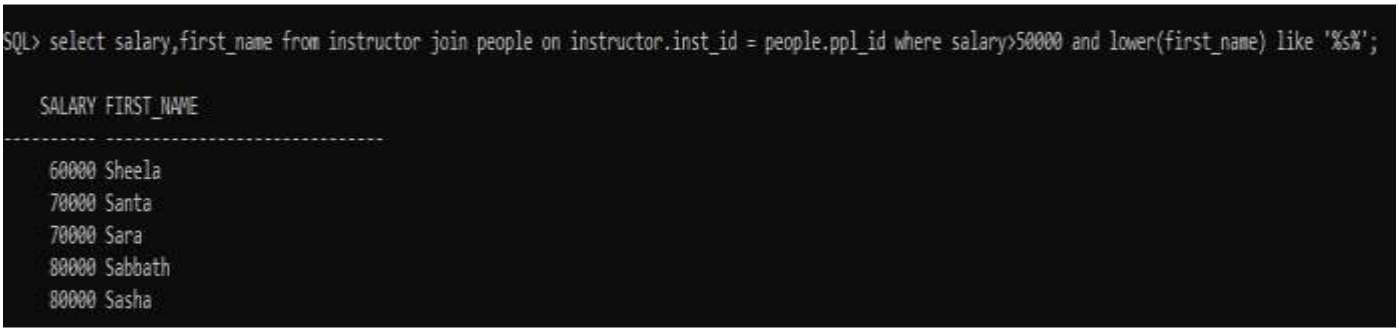


```
SQL> select module_id from inst_module group by module_id having count(inst_id)>1;

 MODULE_ID
----------
       801
       802
       803
       804
       805
```

Figure 88 Information query 2

III. List the name of all the instructors whose name contains ‘s’ and salary is above 50,000.

select salary,first_name from instructor join people on instructor.inst_id = people.ppl_id where salary>50000 and lower(first_name) like '%s%';

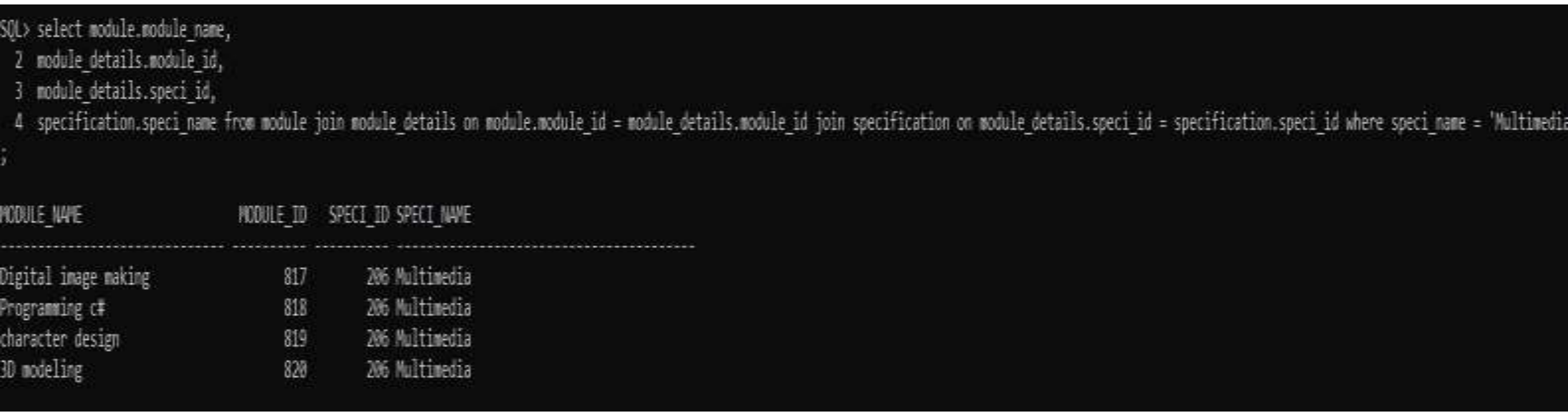


```
SQL> select salary,first_name from instructor join people on instructor.inst_id = people.ppl_id where salary>50000 and lower(first_name) like '%s%';

    SALARY FIRST_NAME
---------- ------------------------------
     60000 Sheela
     70000 Santa
     70000 Sara
     80000 Sabbath
     80000 Sasha
```

Figure 89 IQ 3

IV. List the modules comes under the ‘Multimedia’ specification.

select module.module_name,
module_details.module_id,
module_details.speci_id,
specification.speci_name from module join module_details on module.module_id = module_details.module_id join specification on module_details.speci_id = specification.speci_id where speci_name = 'Multimedia';



```
SQL> select module.module_name,
  2  module_details.module_id,
  3  module_details.speci_id,
  4  specification.speci_name from module join module_details on module.module_id = module_details.module_id join specification on module_details.speci_id = specification.speci_id where speci_name = 'Multimedia
;

MODULE_NAME                     MODULE_ID   SPECI_ID SPECI_NAME
------------------------------ ---------- ---------- ----------------------------------------
Digital image making                  817        206 Multimedia
Programming c#                        818        206 Multimedia
character design                      819        206 Multimedia
3D modeling                           820        206 Multimedia
```

Figure 90 IQ 5

V. List the name of the head of modules with the list of his phone number.

select people.first_name,
people.last_name,

module_head.inst_id from people join module_head on people.ppl_id = module_head.inst_id ;

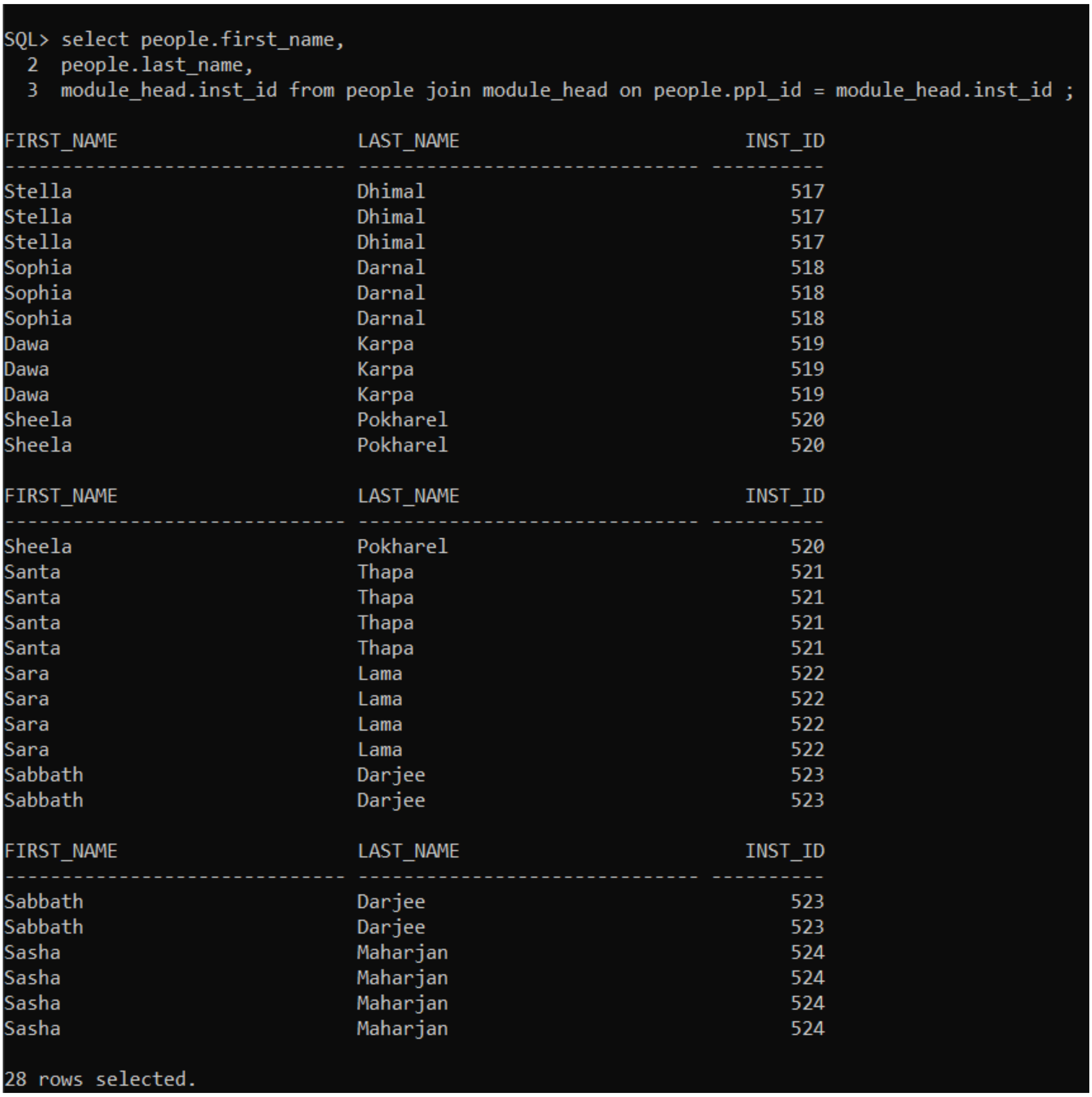
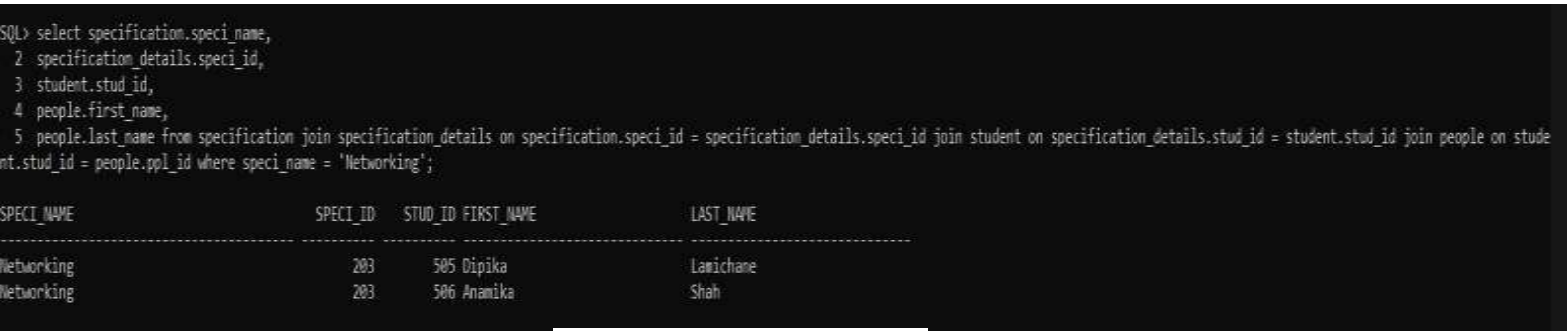

```
SQL> select people.first_name,
  2  people.last_name,
  3  module_head.inst_id from people join module_head on people.ppl_id = module_head.inst_id ;

FIRST_NAME                     LAST_NAME                         INST_ID
------------------------------ ------------------------------ ----------
Stella                         Dhimal                                517
Stella                         Dhimal                                517
Stella                         Dhimal                                517
Sophia                         Darnal                                518
Sophia                         Darnal                                518
Sophia                         Darnal                                518
Dawa                           Karpa                                 519
Dawa                           Karpa                                 519
Dawa                           Karpa                                 519
Sheela                         Pokharel                              520
Sheela                         Pokharel                              520

FIRST_NAME                     LAST_NAME                         INST_ID
------------------------------ ------------------------------ ----------
Sheela                         Pokharel                              520
Santa                          Thapa                                 521
Santa                          Thapa                                 521
Santa                          Thapa                                 521
Santa                          Thapa                                 521
Sara                           Lama                                  522
Sara                           Lama                                  522
Sara                           Lama                                  522
Sara                           Lama                                  522
Sabbath                        Darjee                                523
Sabbath                        Darjee                                523

FIRST_NAME                     LAST_NAME                         INST_ID
------------------------------ ------------------------------ ----------
Sabbath                        Darjee                                523
Sabbath                        Darjee                                523
Sasha                          Maharjan                              524
Sasha                          Maharjan                              524
Sasha                          Maharjan                              524
Sasha                          Maharjan                              524

28 rows selected.
```

Figure 91 IQ5

VI. List all Students who have enrolled in ‘networking’ specifications.

select specification.speci_name,
specification_details.speci_id,
student.stud_id,
people.first_name,
people.last_name from specification join specification_details on specification.speci_id = specification_details.speci_id join student on specification_details.stud_id = student.stud_id join people on student.stud_id = people.ppl_id where speci_name = 'Networking';

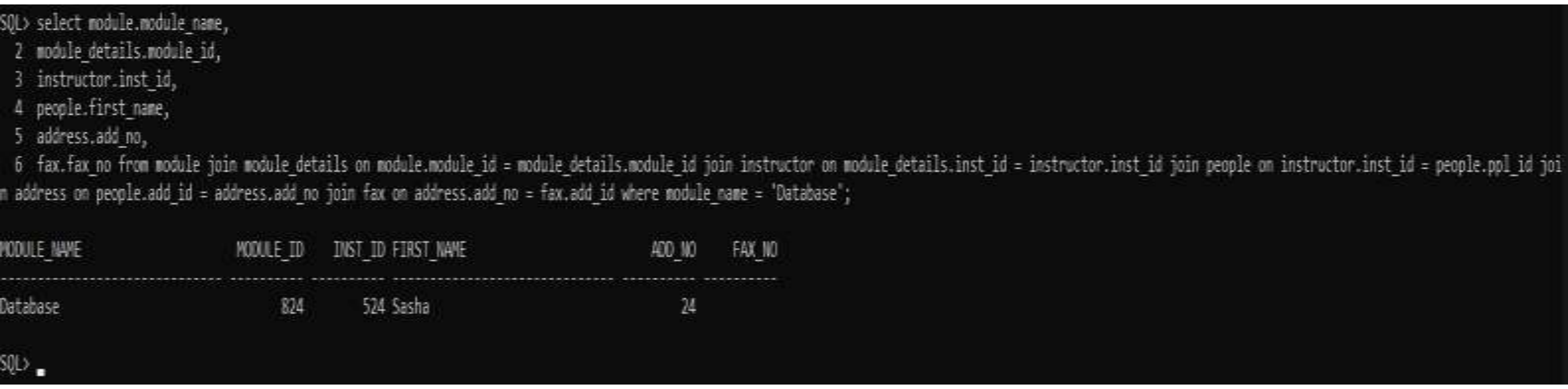


```
SQL> select specification.speci_name,
  2  specification_details.speci_id,
  3  student.stud_id,
  4  people.first_name,
  5  people.last_name from specification join specification_details on specification.speci_id = specification_details.speci_id join student on specification_details.stud_id = student.stud_id join people on stude
nt.stud_id = people.ppl_id where speci_name = 'Networking';

SPECI_NAME                               SPECI_ID    STUD_ID FIRST_NAME                     LAST_NAME
---------------------------------------- ---------- ---------- ------------------------------ ------------------------------
Networking                                      203        505 Dipika                         Lamichane
Networking                                      203        506 Anamika                        Shah
```

Figure 92 IQ 6

VII. List the fax number of the instructor who teaches the ‘database’ module.

select module.module_name,
module_details.module_id,
instructor.inst_id,
people.first_name,
address.add_no,
fax.fax_no from module join module_details on module.module_id = module_details.module_id join instructor on module_details.inst_id = instructor.inst_id join people on instructor.inst_id = people.ppl_id join address on people.add_id = address.add_no join fax on address.add_no = fax.add_id where module_name = 'Database';

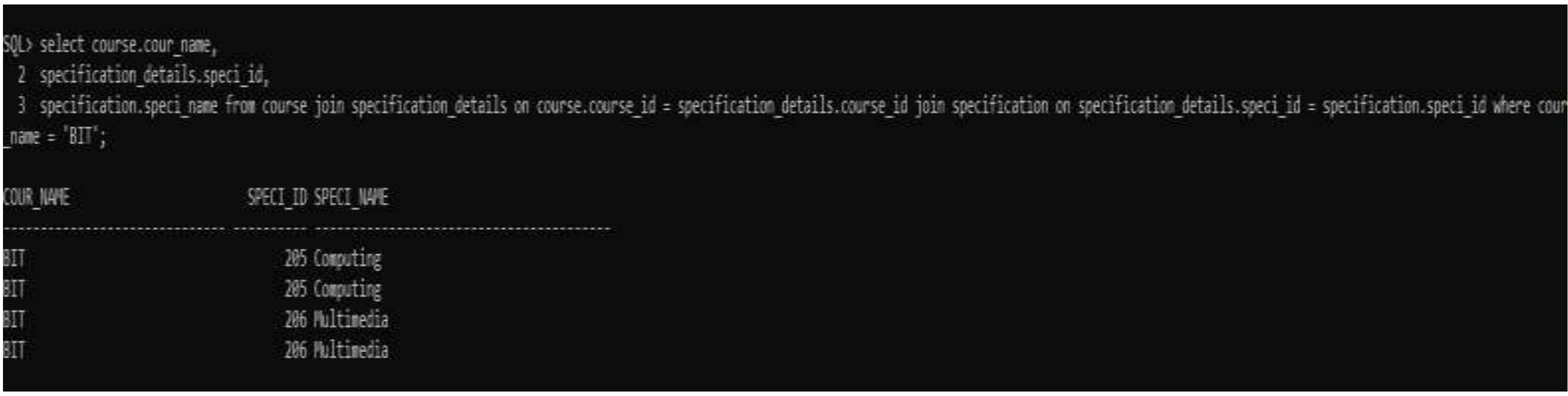


```
SQL> select module.module_name,
  2  module_details.module_id,
  3  instructor.inst_id,
  4  people.first_name,
  5  address.add_no,
  6  fax.fax_no from module join module_details on module.module_id = module_details.module_id join instructor on module_details.inst_id = instructor.inst_id join people on instructor.inst_id = people.ppl_id joi
n address on people.add_id = address.add_no join fax on address.add_no = fax.add_id where module_name = 'Database';

MODULE_NAME                    MODULE_ID    INST_ID FIRST_NAME                      ADD_NO     FAX_NO
------------------------------ ---------- ---------- ------------------------------ ---------- ----------
Database                              824        524 Sasha                                  24

SQL>
```

Figure 93 IQ 6

VIII. List the specification falls under the BIT course.

select course.cour_name,
specification_details.speci_id,
specification.speci_name from course join specification_details on course.course_id = specification_details.course_id join specification on specification_details.speci_id = specification.speci_id where cour_name = 'BIT';

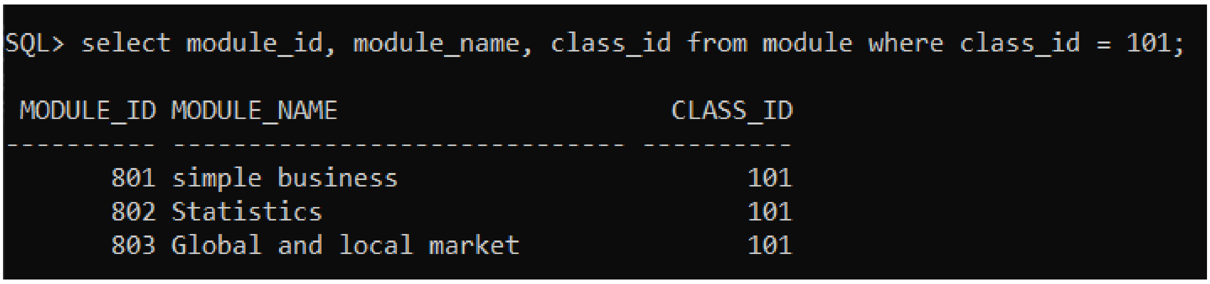


```
SQL> select course.cour_name,
  2  specification_details.speci_id,
  3  specification.speci_name from course join specification_details on course.course_id = specification_details.course_id join specification on specification_details.speci_id = specification.speci_id where cour
_name = 'BIT';

COUR_NAME                      SPECI_ID SPECI_NAME
------------------------------ ---------- ----------------------------------------
BIT                                 205 Computing
BIT                                 205 Computing
BIT                                 206 Multimedia
BIT                                 206 Multimedia
```

Figure 94 IQ 8

IX. List all the modules taught in any one particular class.

select module_id, module_name, class_id from module where class_id = 101;

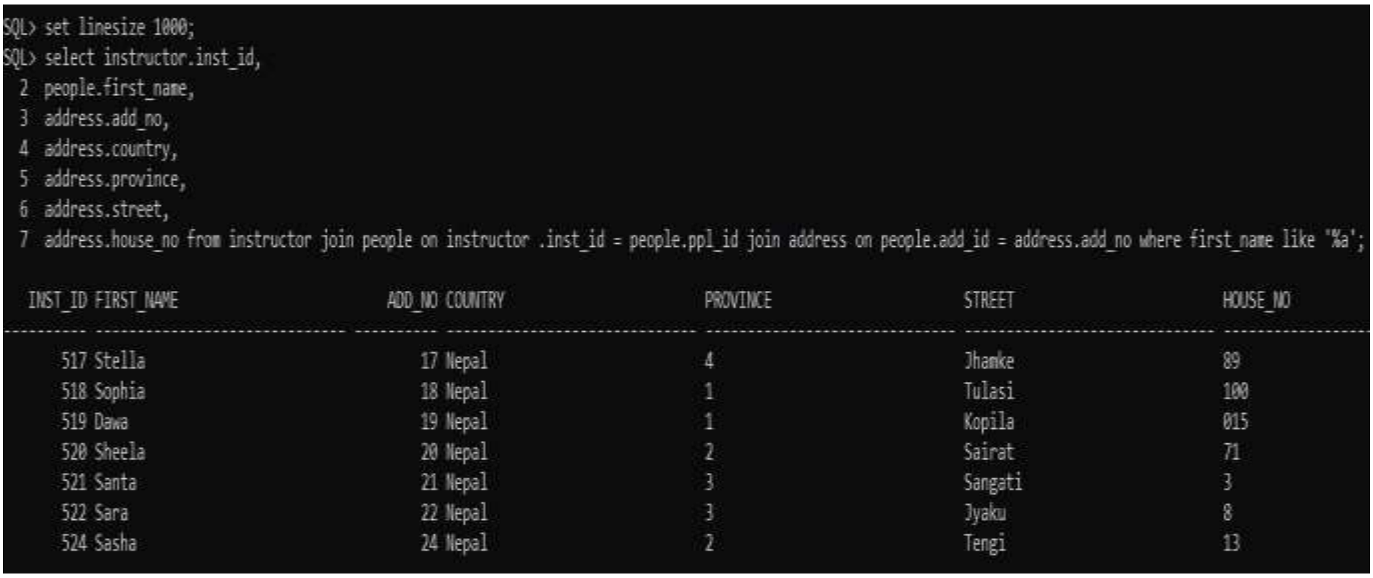


```
SQL> select module_id, module_name, class_id from module where class_id = 101;

 MODULE_ID MODULE_NAME                      CLASS_ID
---------- ------------------------------ ----------
       801 simple business                       101
       802 Statistics                            101
       803 Global and local market               101
```

Figure 95 IQ 9

X. List all the teachers with all their addresses who have ‘a’ at the end of their first

select instructor.inst_id,
people.first_name,
address.add_no,
address.country,
address.province,
address.street,
address.hohuse_no from instructor join people on instructor.inst_id = people.ppl_id join address on people.add_id = address.add_no where first_name like ‘%a’;



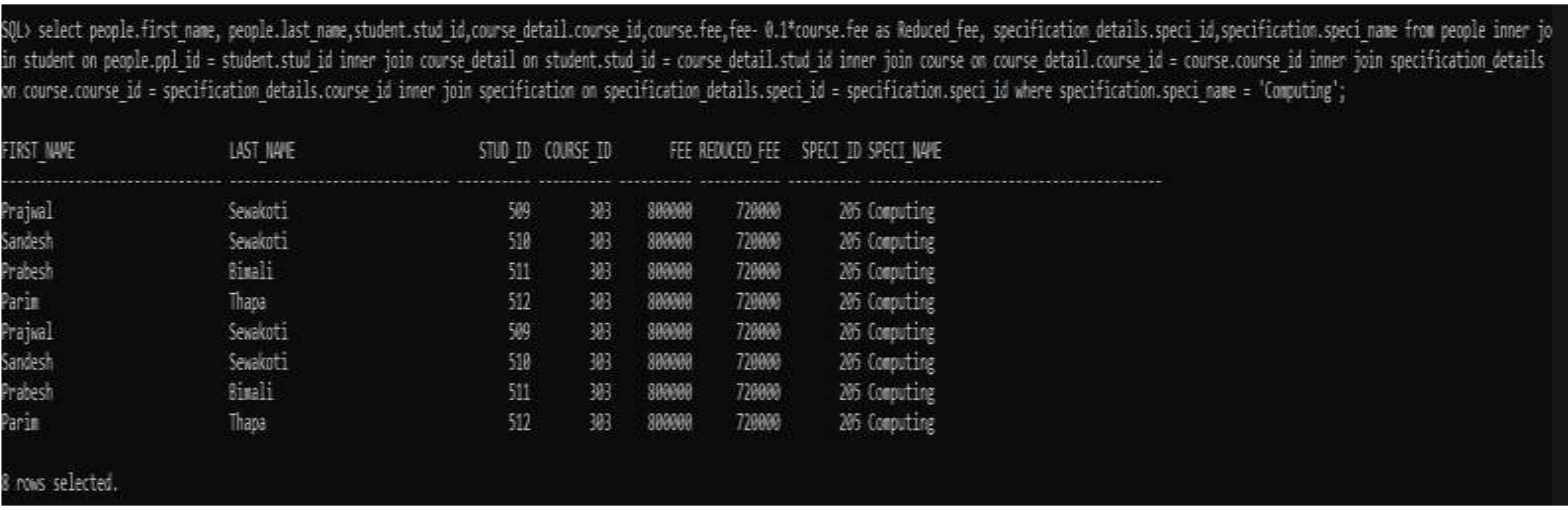
```
SQL> set linesize 1000;
SQL> select instructor.inst_id,
  2  people.first_name,
  3  address.add_no,
  4  address.country,
  5  address.province,
  6  address.street,
  7  address.house_no from instructor join people on instructor .inst_id = people.ppl_id join address on people.add_id = address.add_no where first_name like '%a';

   INST_ID FIRST_NAME                  ADD_NO COUNTRY                   PROVINCE                  STREET                    HOUSE_NO
---------- ------------------------- -------- ------------------------- ------------------------- ------------------------- ----------
       517 Stella                          17 Nepal                     4                         Jhamke                    89
       518 Sophia                          18 Nepal                     1                         Tulasi                    100
       519 Dawa                            19 Nepal                     1                         Kopila                    015
       520 Sheela                          20 Nepal                     2                         Sairat                    71
       521 Santa                           21 Nepal                     3                         Sangati                   3
       522 Sara                            22 Nepal                     3                         Jyaku                     8
       524 Sasha                           24 Nepal                     2                         Tengi                     13
```

Figure 96 IQ 10

Transaction Queries

I. Show the students, course they enroll in and their fees. Reduce 10% of the fees if they are enrolled in a computing course.

select people.first_name, people.last_name,student.stud_id,course_detail.course_id,course.fee,fee- 0.1*course.fee as Reduced_fee, specification_details.speci_id,specification.speci_name from people inner join student on people.ppl_id = student.stud_id inner join course_detail on student.stud_id = course_detail.stud_id inner join course on course_detail.course_id = course.course_id inner join specification_details on course.course_id = specification_details.course_id inner join specification on specification_details.speci_id = specification.speci_id where specification.speci_name = 'Computing';

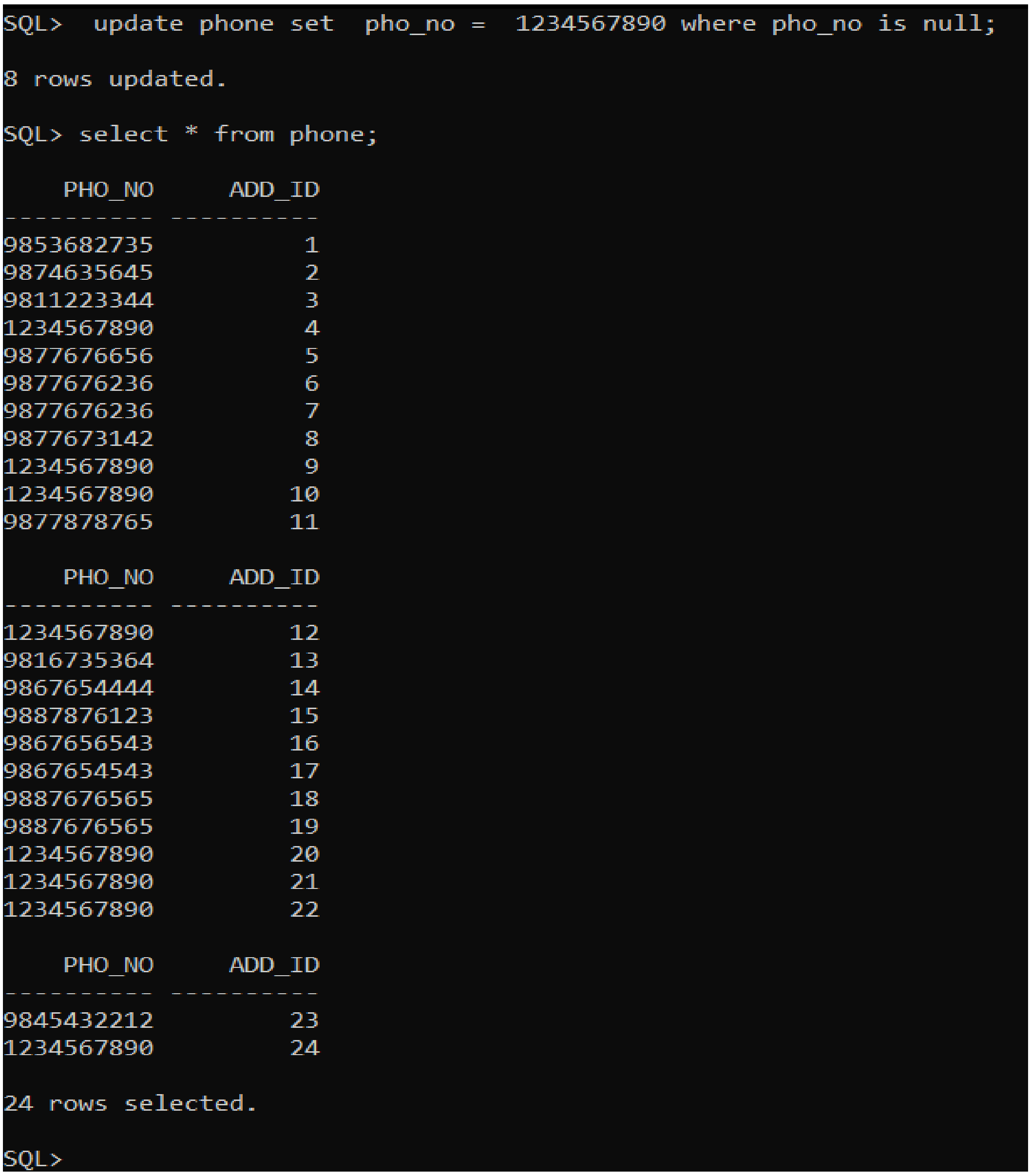


```
SQL> select people.first_name, people.last_name,student.stud_id,course_detail.course_id,course.fee,fee- 0.1*course.fee as Reduced_fee, specification_details.speci_id,specification.speci_name from people inner jo
in student on people.ppl_id = student.stud_id inner join course_detail on student.stud_id = course_detail.stud_id inner join course on course_detail.course_id = course.course_id inner join specification_details
on course.course_id = specification_details.course_id inner join specification on specification_details.speci_id = specification.speci_id where specification.speci_name = 'Computing';

FIRST_NAME                LAST_NAME                   STUD_ID  COURSE_ID       FEE REDUCED_FEE   SPECI_ID SPECI_NAME
------------------------- ------------------------- --------- ---------- --------- ----------- ---------- ------------------------------
Prajwal                   Sewakoti                        509        303    800000      720000        205 Computing
Sandesh                   Sewakoti                        510        303    800000      720000        205 Computing
Prabesh                   Bimali                          511        303    800000      720000        205 Computing
Parim                     Thapa                           512        303    800000      720000        205 Computing
Prajwal                   Sewakoti                        509        303    800000      720000        205 Computing
Sandesh                   Sewakoti                        510        303    800000      720000        205 Computing
Prabesh                   Bimali                          511        303    800000      720000        205 Computing
Parim                     Thapa                           512        303    800000      720000        205 Computing

8 rows selected.
```

Figure 97 Transaction query 1

II. Place the default Number 1234567890 if the list of phone numbers to the location of the address is empty and give the column name as ‘Contact details.

update phone set pho_no = 1234567890 where pho_no is null;



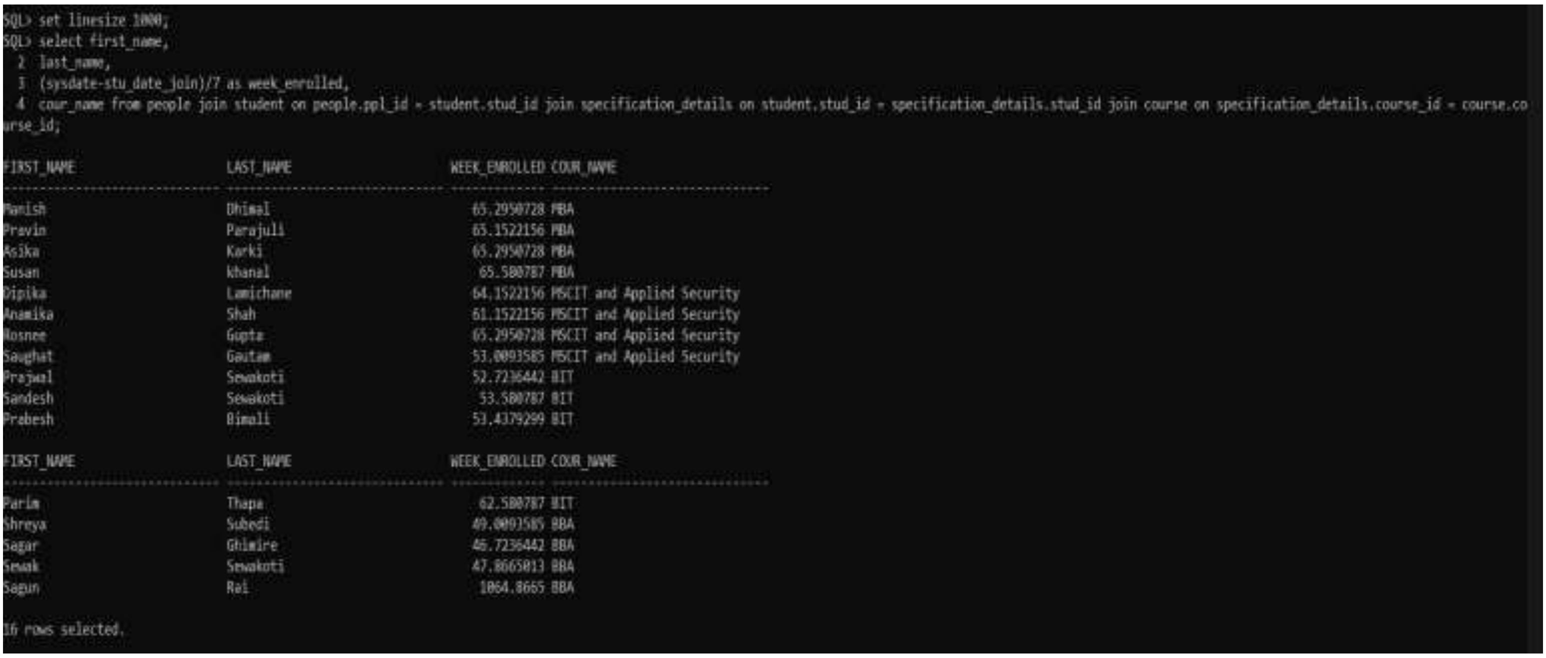
```
SQL>  update phone set  pho_no =  1234567890 where pho_no is null;

8 rows updated.

SQL> select * from phone;

    PHO_NO     ADD_ID
---------- ----------
9853682735          1
9874635645          2
9811223344          3
1234567890          4
9877676656          5
9877676236          6
9877676236          7
9877673142          8
1234567890          9
1234567890         10
9877878765         11

    PHO_NO     ADD_ID
---------- ----------
1234567890         12
9816735364         13
9867654444         14
9887876123         15
9867656543         16
9867654543         17
9887676565         18
9887676565         19
1234567890         20
1234567890         21
1234567890         22

    PHO_NO     ADD_ID
---------- ----------
9845432212         23
1234567890         24

24 rows selected.

SQL>
```

Figure 98 TQ 2

III. Show the name of all the students with the number of weeks since they have enrolled in the course.

select first_name,

last_name,
 (sysdate-stu_date_join)/7 as week_enrolled,
cour_name from people join student on people.ppl_id = student.stud_id join specification_details on student.stud_id = specification_details.stud_id join course on specification_details.course_id = course.course_id;

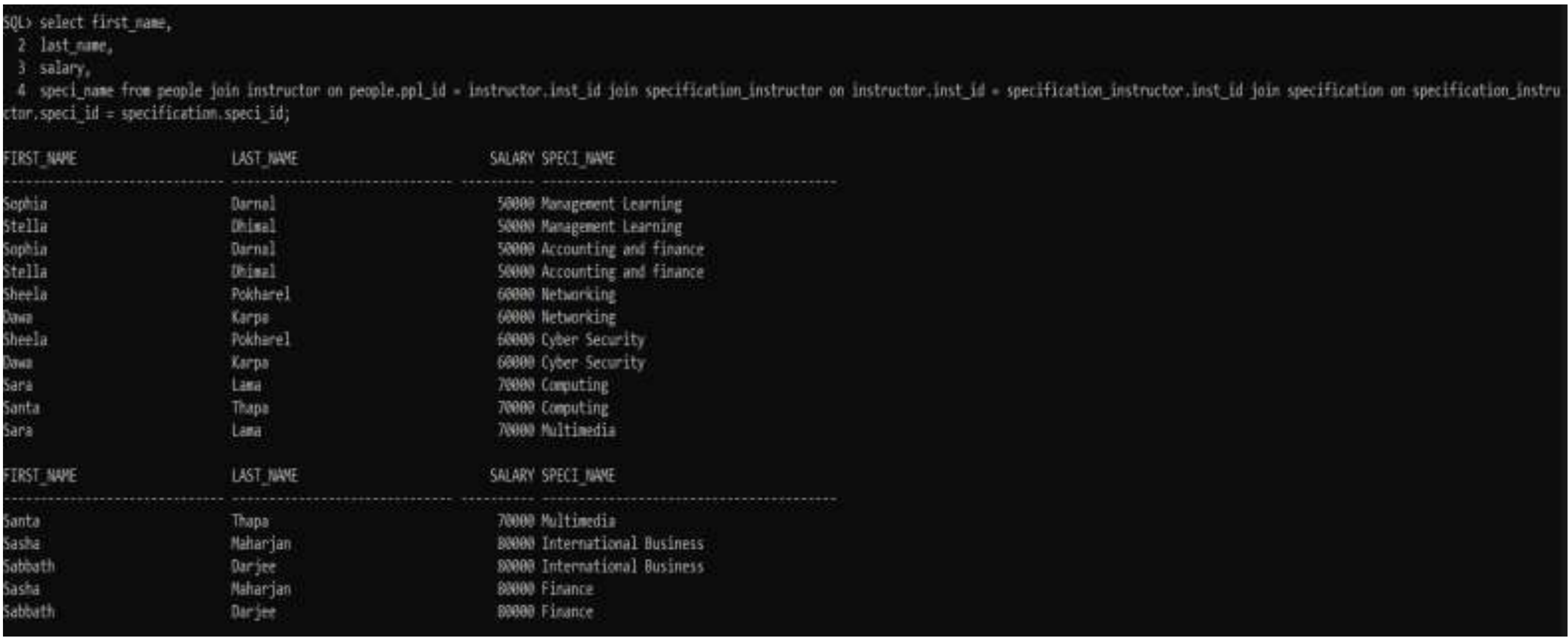


```
SQL> set linesize 1000;
SQL> select first_name,
  2  last_name,
  3  (sysdate-stu_date_join)/7 as week_enrolled,
  4  cour_name from people join student on people.ppl_id = student.stud_id join specification_details on student.stud_id = specification_details.stud_id join course on specification_details.course_id = course.co
urse_id;

FIRST_NAME                     LAST_NAME                      WEEK_ENROLLED COUR_NAME
------------------------------ ------------------------------ ------------- ------------------------------
Manish                         Dhimal                            65.2950728 MBA
Pravin                         Parajuli                          65.1522156 MBA
Asika                          Karki                             65.2950728 MBA
Susan                          khanal                             65.580787 MBA
Dipika                         Lamichane                         64.1522156 MSCIT and Applied Security
Anamika                        Shah                              61.1522156 MSCIT and Applied Security
Rosnee                         Gupta                             65.2950728 MSCIT and Applied Security
Saughat                        Gautam                            53.0093585 MSCIT and Applied Security
Prajwal                        Sewakoti                          52.7236442 BIT
Sandesh                        Sewakoti                           53.580787 BIT
Prabesh                        Bimali                            53.4379299 BIT

FIRST_NAME                     LAST_NAME                      WEEK_ENROLLED COUR_NAME
------------------------------ ------------------------------ ------------- ------------------------------
Parim                          Thapa                              62.580787 BIT
Shreya                         Subedi                            49.0093585 BBA
Sagar                          Ghimire                           46.7236442 BBA
Sewak                          Sewakoti                          47.8665013 BBA
Sagun                          Rai                                1064.8665 BBA

16 rows selected.
```

Figure 99 TQ 3

IV. Show the name of the instructors who got equal salary and work in the same specification.

 select first_name,
   last_name,
    salary,
    speci_name from people join instructor on people.ppl_id = instructor.inst_id join specification_instructor on instructor.inst_id = specification_instructor.inst_id join specification on specification_instructor.speci_id = specification.speci_id;

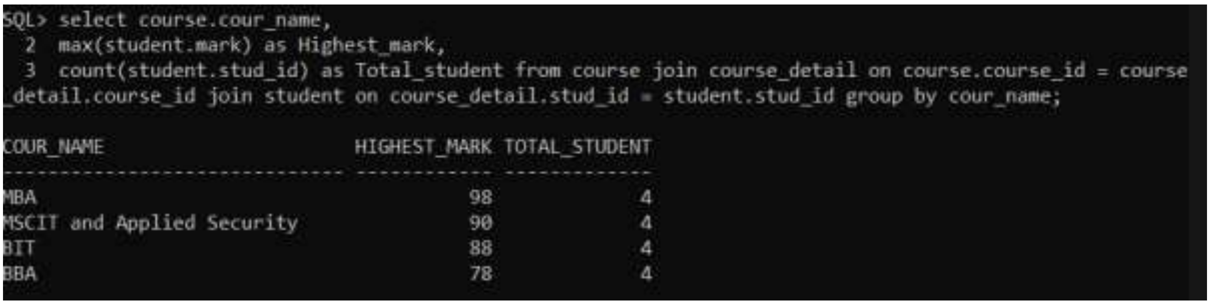


```
SQL> select first_name,
  2  last_name,
  3  salary,
  4  speci_name from people join instructor on people.ppl_id = instructor.inst_id join specification_instructor on instructor.inst_id = specification_instructor.inst_id join specification on specification_instru
ctor.speci_id = specification.speci_id;

FIRST_NAME                     LAST_NAME                          SALARY SPECI_NAME
------------------------------ ------------------------------ ---------- ----------------------------------------
Sophia                         Darnal                              50000 Management Learning
Stella                         Dhimal                              50000 Management Learning
Sophia                         Darnal                              50000 Accounting and finance
Stella                         Dhimal                              50000 Accounting and finance
Sheela                         Pokharel                            60000 Networking
Dawa                           Karpa                               60000 Networking
Sheela                         Pokharel                            60000 Cyber Security
Dawa                           Karpa                               60000 Cyber Security
Sara                           Lama                                70000 Computing
Santa                          Thapa                               70000 Computing
Sara                           Lama                                70000 Multimedia

FIRST_NAME                     LAST_NAME                          SALARY SPECI_NAME
------------------------------ ------------------------------ ---------- ----------------------------------------
Santa                          Thapa                               70000 Multimedia
Sasha                          Maharjan                            80000 International Business
Sabbath                        Darjee                              80000 International Business
Sasha                          Maharjan                            80000 Finance
Sabbath                        Darjee                              80000 Finance
```

Figure 100 TQ 4

V. List all the courses with the total number of students enrolled course name and the highest marks obtained.

select course.cour_name,
max(student.mark) as Highest_mark,
count(student.stud_id) as Total_student from course join course_detail on course.course_id = course_detail.course_id join student on course_detail.stud_id = student.stud_id group by cour_name;

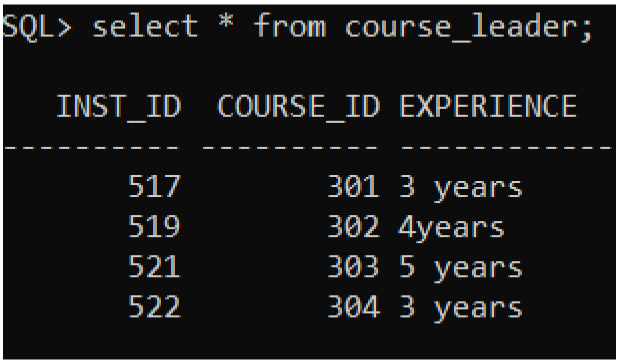


```
SQL> select course.cour_name,
  2  max(student.mark) as Highest_mark,
  3  count(student.stud_id) as Total_student from course join course_detail on course.course_id = course
_detail.course_id join student on course_detail.stud_id = student.stud_id group by cour_name;

COUR_NAME                      HIGHEST_MARK TOTAL_STUDENT
------------------------------ ------------ -------------
MBA                                      98             4
MSCIT and Applied Security               90             4
BIT                                      88             4
BBA                                      78             4
```

Figure 101 TQ 5

VI. List all the instructors who are also a course leader.

select * from course_leader;

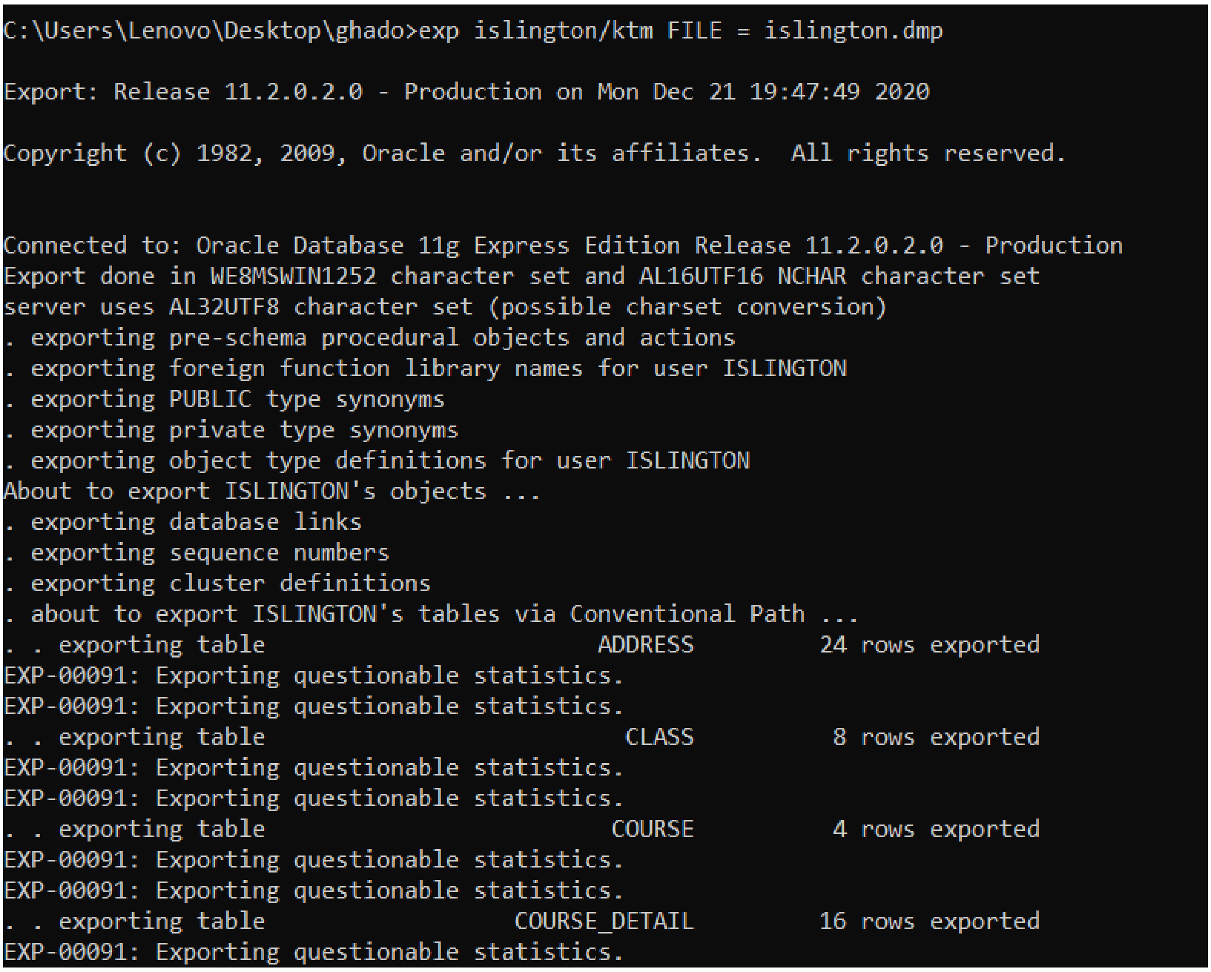


```
SQL> select * from course_leader;

   INST_ID  COURSE_ID EXPERIENCE
---------- ---------- ------------
       517        301 3 years
       519        302 4years
       521        303 5 years
       522        304 3 years
```

Figure 102 TQ 7

Creation of Dump File

Dump file Islington.dmp was created.



```
C:\Users\Lenovo\Desktop\ghado>exp islington/ktm FILE = islington.dmp

Export: Release 11.2.0.2.0 - Production on Mon Dec 21 19:47:49 2020

Copyright (c) 1982, 2009, Oracle and/or its affiliates.  All rights reserved.


Connected to: Oracle Database 11g Express Edition Release 11.2.0.2.0 - Production
Export done in WE8MSWIN1252 character set and AL16UTF16 NCHAR character set
server uses AL32UTF8 character set (possible charset conversion)
. exporting pre-schema procedural objects and actions
. exporting foreign function library names for user ISLINGTON
. exporting PUBLIC type synonyms
. exporting private type synonyms
. exporting object type definitions for user ISLINGTON
About to export ISLINGTON's objects ...
. exporting database links
. exporting sequence numbers
. exporting cluster definitions
. about to export ISLINGTON's tables via Conventional Path ...
. . exporting table                        ADDRESS         24 rows exported
EXP-00091: Exporting questionable statistics.
EXP-00091: Exporting questionable statistics.
. . exporting table                          CLASS          8 rows exported
EXP-00091: Exporting questionable statistics.
EXP-00091: Exporting questionable statistics.
. . exporting table                         COURSE          4 rows exported
EXP-00091: Exporting questionable statistics.
EXP-00091: Exporting questionable statistics.
. . exporting table                  COURSE_DETAIL         16 rows exported
EXP-00091: Exporting questionable statistics.
```

Figure 103 Creation of dump file.

Drop tables

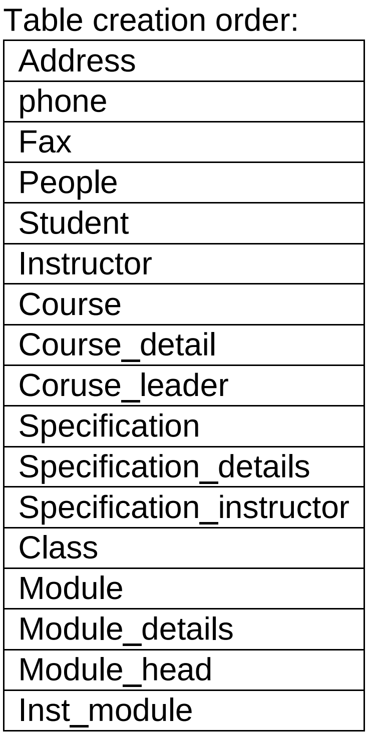
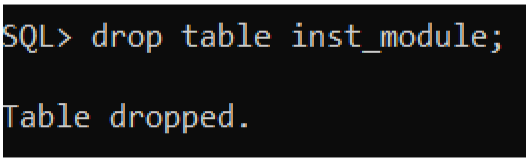


Table creation order:

Address
phone
Fax
People
Student
Instructor
Course
Course_detail
Coruse_leader
Specification
Specification_details
Specification_instructor
Class
Module
Module_details
Module_head
Inst_module

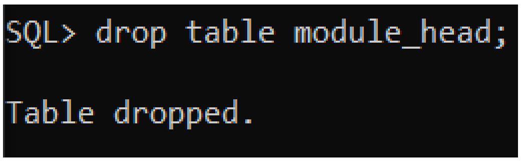
Figure 104 order of table creation

Dropping table in reverse of the above table of creation.



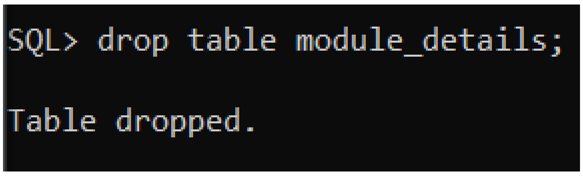
```
SQL> drop table inst_module;

Table dropped.
```

Figure 105 inst_module dropped.



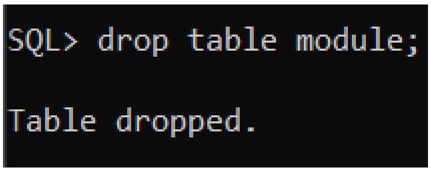
```
SQL> drop table module_head;

Table dropped.
```

Figure 106 module_head dropped.



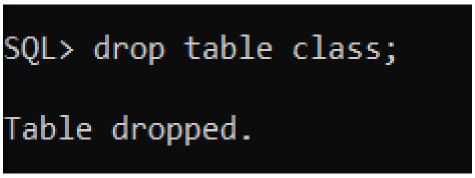
```
SQL> drop table module_details;

Table dropped.
```

Figure 107 module_details dropped.



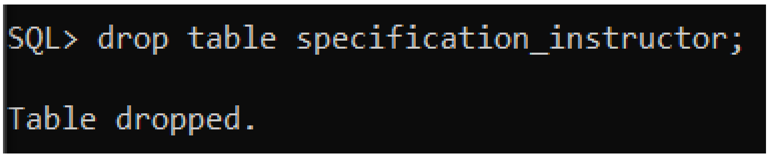
```
SQL> drop table module;

Table dropped.
```

Figure 108 Module dropped.



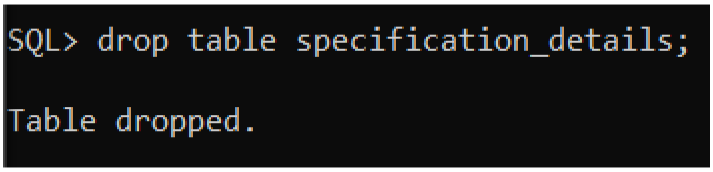
```
SQL> drop table class;

Table dropped.
```

Figure 109 Class dropped.



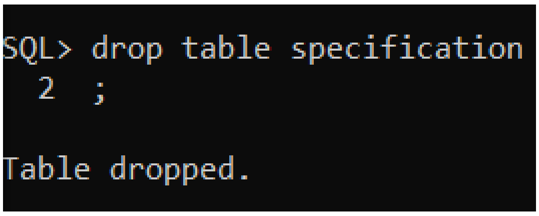
```
SQL> drop table specification_instructor;

Table dropped.
```

Figure 110 Specification_instructor dropped.



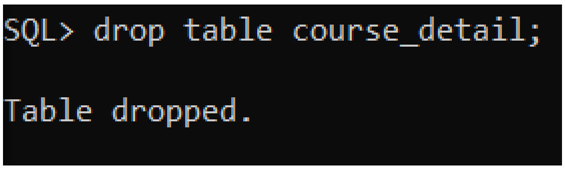
```
SQL> drop table specification_details;

Table dropped.
```

Figure 111Specification_details dropped.



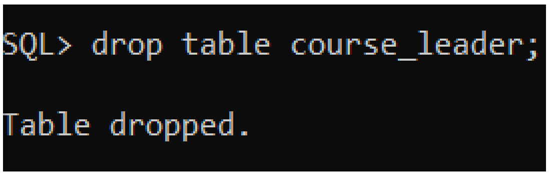
```
SQL> drop table specification
  2  ;

Table dropped.
```

Figure 112 Specification dropped.



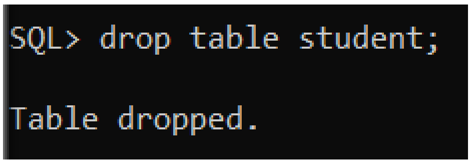
```
SQL> drop table course_detail;

Table dropped.
```

Figure 113 Course_detail dropped.



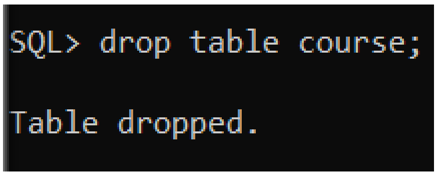
```
SQL> drop table course_leader;

Table dropped.
```

Figure 114course_leader dropped.



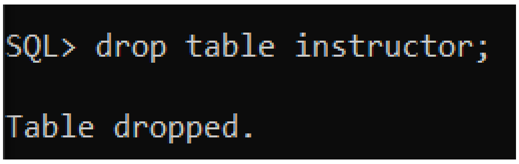
```
SQL> drop table student;

Table dropped.
```

Figure 115 Student dropped.



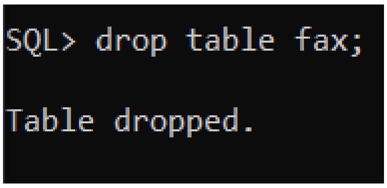
```
SQL> drop table course;

Table dropped.
```

Figure 116 course dropped.



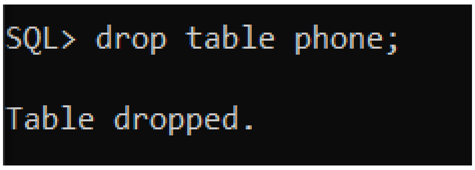
```
SQL> drop table instructor;

Table dropped.
```

Figure 117instructor dropped.



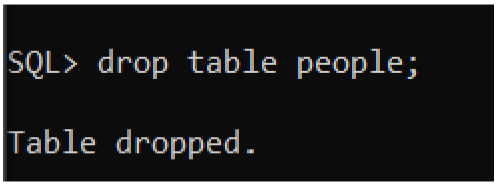
```
SQL> drop table fax;

Table dropped.
```

Figure 118 Fax dropped.



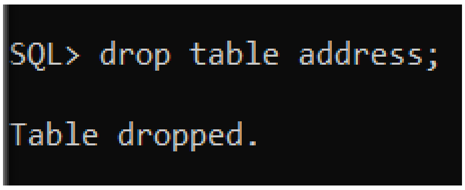
```
SQL> drop table phone;

Table dropped.
```

Figure 119 Phone dropped.



```
SQL> drop table people;

Table dropped.
```

Figure 120 People dropped.



```
SQL> drop table address;

Table dropped.
```

Figure 121 Address dropped.

Conclusion

Learning process never ends for a person till graveyard. I dreamed of working in terminal with black screen and white letters since I was kid watching it in televisions and hacking movies. When I heard of oracle and doing database stuff in terminal I was excited. Creating table, inserting data and doing queries were my best part of the coursework. I never thought those transaction queries will make be kneel down and wake for nights. At the end of the day it was worth it.

Normalization was a backbone of the coursework. I had to make sure that there was no any repeating group existing to avoid data inconsistencies and data anomalies. At first to start this coursework I had to search about Islington College and it's history, current business activities, college and business rules, their vision and the flow of data inside the college. After knowing much about the college I had to start point out entities and their attributes while keeping in mind that those attributes will full fill all the queries. After that, first erd must be build on which many faults will be known. To correct those flaws we have to do normalization and make final erd. On first phase, of normalization there is UNF where we have to define repeating group with curly braces, on 1 NF we have to separate those repeating groups with the proper naming of those attributes, on 2 NF we have to separate those entities by removing partial dependencies and finally on 3 NF we have to remove any transitive dependencies among those entities. This is how I did in this CW. There are many bitter and sweet experiences on doing this coursework. It was bitter at the times that I had to learn through rough and tough way like back pain, sleepless nights, cold hands and feets in those nights, sacrifice to games, lack of knowledge about oracle commands, nervousness and anxieties by comparing oneself to others who have done work already.

But at the same time it was sweet that I got to learn about islington college, many courses their specifications, modules, basics of oracle, what is normalization, what is sacrifice, uncontrolled happiness after getting one query correct and finally the pleasure of submitting all of my pain and sacrifices in one zip file.

At last I would like to thank my module teacher Mr.Lekhnath Katuwal for being there always , providing his precious time, making one on one meeting possible on google meet and hangout. I might forget what I learned, but never forget the memories and moments spent with Lekhnath sir and transaction queries because I will dig it down in the deepest corner of my heart. Peace.

Bibliography

https://study.com/academy/lesson/what-is-an-entity-in-a-database. (2020, 12 20). Retrieved from Study.com: https://study.com/academy/lesson/what-is-an-entity-in-a-database.html#:~:text=An%20entity%20is%20an%20object%20that%20exists.&text=In%20database%20administration%2C%20an%20entity,entity%20relationship%20diagram%20(ERD).

Islington College. (2020, 12 21). Retrieved from islington.edu.np: https://islington.edu.np/

visual diagram. (2020, 12 20). Retrieved from visual diagram: https://www.visual-paradigm.com/guide/data-modeling/what-is-entity-relationship-diagram/