

**Information System Management Lab
BCOM 307**

Assignment #6

Submitted by:

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Assignment No.6

Unit No:

Course/Subject Code: BCOM 307

Subject Title: Information System Management Lab

Issue Date:

Last Date of Submission:

Instructions for Students:

1. **All Questions are Compulsory.**
2. The student should attach proper cover page for each assignment clearly mentioning the Assignment No.
3. Each assignment should be prepared by the student individually with proper explanation and screenshots.
4. A4 size ruled sheets should be used for the assignment.
5. Assignment pages should be serially numbered at the bottom of page.

During online education mode, upload scanned copy of the complete assignment including cover page latest by due date.

QuestionNo.	Question	CO No.																															
1	<p>Create a table called ‘Person’ that contains four columns : PersonID, LastName, FirstName, and Age, and create another table ‘Orders’ with columns - OrderID, OrderNumber and PersonID.</p> <table><tr><th>Person ID (Primary Key)</th><th>LastName (Not Null)</th><th>FirstName (Not Null)</th><th>Age (Not Null)</th></tr><tr><td>1</td><td>Hansen</td><td>Ola</td><td>30</td></tr><tr><td>2</td><td>Svendson</td><td>Tove</td><td>23</td></tr><tr><td>3</td><td>Petterson</td><td>Karl</td><td>20</td></tr></table> <table><tr><th>Order ID (Primary Key)</th><th>Order Number (Not Null)</th><th>Person ID (Foreign Key)</th></tr><tr><td>1</td><td>77895</td><td>3</td></tr><tr><td>2</td><td>44678</td><td>3</td></tr><tr><td>3</td><td>22456</td><td>2</td></tr><tr><td>4</td><td>24562</td><td>1</td></tr></table>	Person ID (Primary Key)	LastName (Not Null)	FirstName (Not Null)	Age (Not Null)	1	Hansen	Ola	30	2	Svendson	Tove	23	3	Petterson	Karl	20	Order ID (Primary Key)	Order Number (Not Null)	Person ID (Foreign Key)	1	77895	3	2	44678	3	3	22456	2	4	24562	1	CO1
Person ID (Primary Key)	LastName (Not Null)	FirstName (Not Null)	Age (Not Null)																														
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2	44678	3																															
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4	24562	1																															

2	Insert values in 'Order' table with personID = 4.	CO 1
3	Delete from table 'Orders' where personID = 1;	
4	Delete from table 'Persons' where personID = 1;	

ASSIGNMENT 6 - FOREIGN KEY CONSTRAINT

Task 1 : Create a table called 'Person' that contains four columns : PersonID, LastName, FirstName, and Age, and create another table 'Orders' with columns - OrderID, OrderNumber and PersonID.

Person ID (Primary Key)	LastName (Not Null)	FirstName (Not Null)	Age (Not Null)
1	Hansen	Ola	30
2	Svendson	Tove	23
3	Petterson	Karl	20

Order ID (Primary Key)	Order Number (Not Null)	Person ID (Foreign Key)
1	77895	3
2	44678	3
3	22456	2
4	24562	1

The following task is completed using the 'create table' command, along with the 'primary key' constraint, the 'not null' constraint and the 'foreign key' constraint. The 'Not Null' constraint, when put on a column within a table definition, tells us that the values of that column cannot be left empty while inputting values. The syntax for not null constraint (to be used in table definition) is:

column_name datatype not null,

Foreign Key represents relationship between tables. A foreign key is a column (or a group of columns) whose values are derived from the primary key / unique key of some other table. The syntax for foreign key (to be used in creating table after all the columns are defined) is:

foreign key (column name from foreign table) references primary-table-name(primary key of primary table),

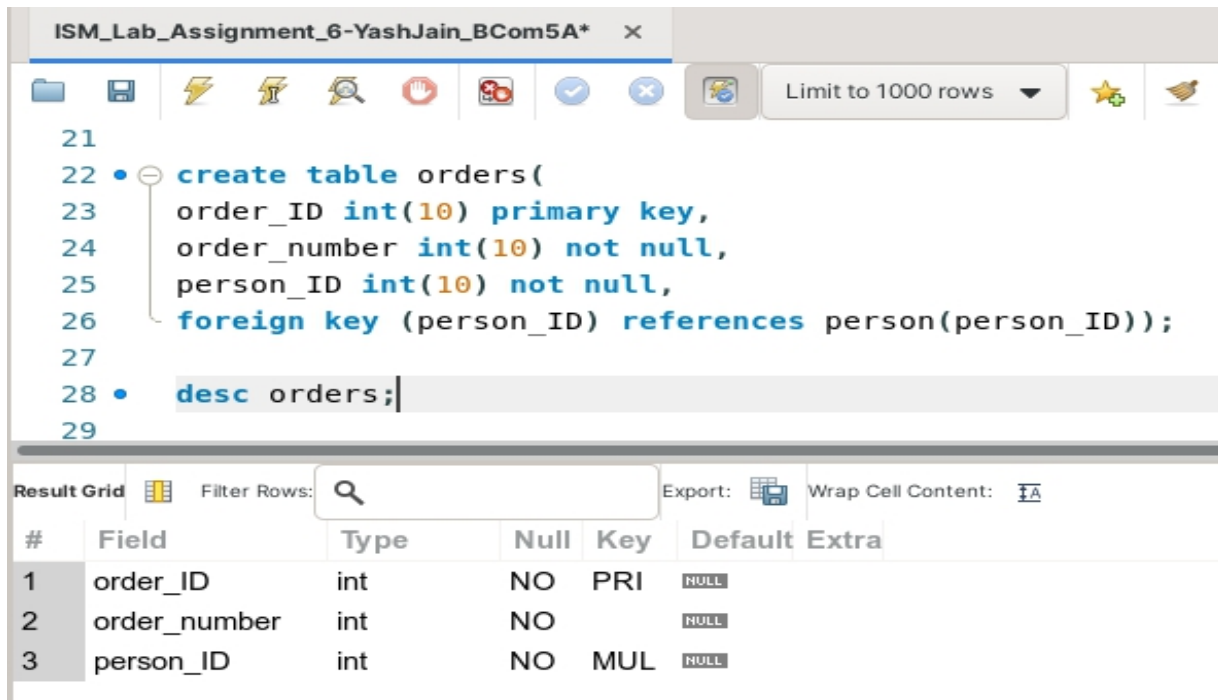
The screenshot shows a database management tool interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The main area displays SQL code for creating a 'person' table and describing it. Below the code is a 'Result Grid' showing the table's structure.

```

11
12 #creating table persons and order
13
14 • create table person(
15   person_ID int(10) primary key,
16   last_name varchar(25) not null,
17   first_name varchar(25) not null,
18   age int(2) not null);
19
20 • desc person;
21

```

#	Field	Type	Null	Key	Default	Extra
1	person_ID	int	NO	PRI	NULL	
2	last_name	varchar(25)	NO		NULL	
3	first_name	varchar(25)	NO		NULL	
4	age	int	NO		NULL	



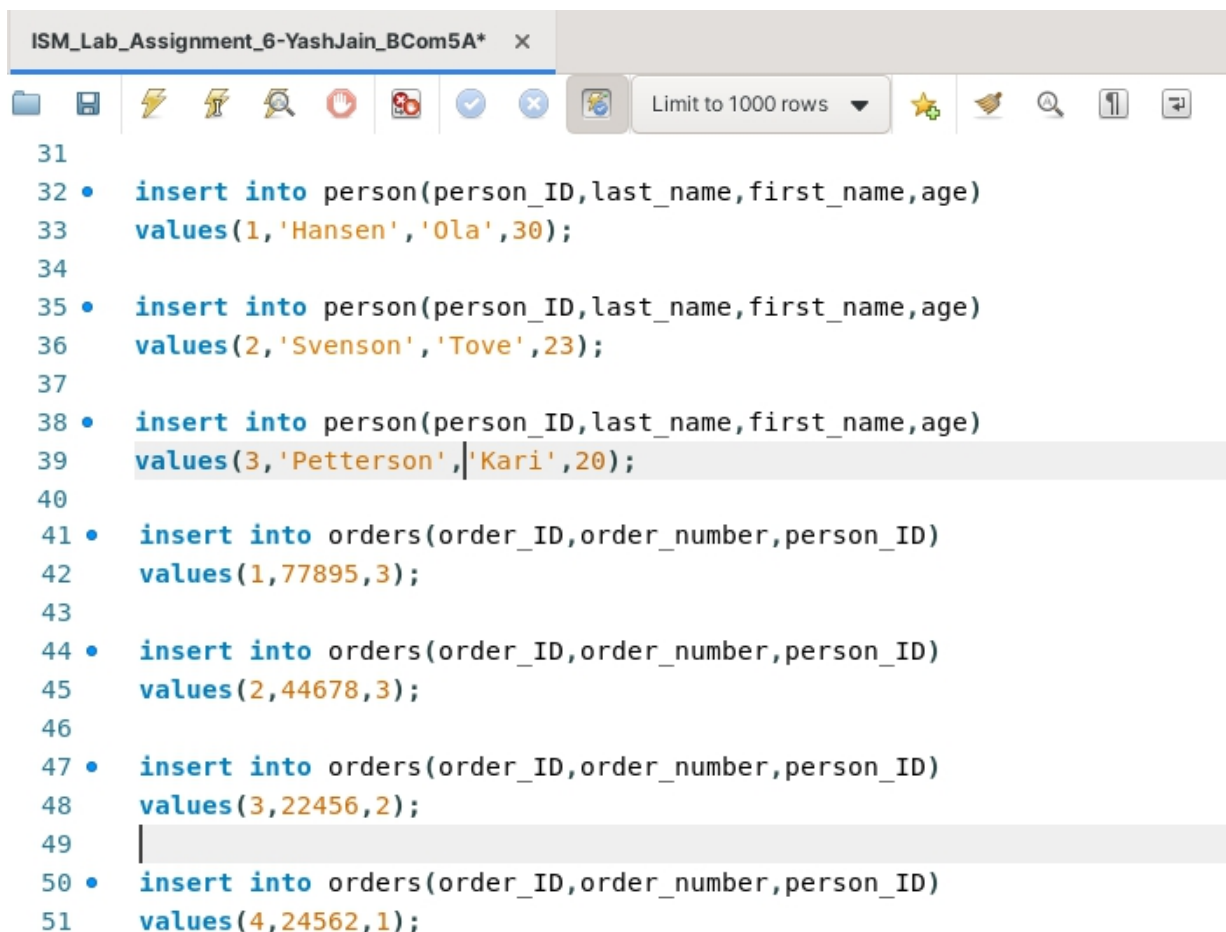
The screenshot shows a database IDE window titled "ISM_Lab_Assignment_6-YashJain_BCom5A*". The SQL editor contains the following code:

```
21
22 • create table orders(
23     order_ID int(10) primary key,
24     order_number int(10) not null,
25     person_ID int(10) not null,
26     foreign key (person_ID) references person(person_ID));
27
28 • desc orders;
29
```

Below the editor is the "Result Grid" showing the output of the DESCRIBE command:

#	Field	Type	Null	Key	Default	Extra
1	order_ID	int	NO	PRI	NULL	
2	order_number	int	NO		NULL	
3	person_ID	int	NO	MUL	NULL	

Now, to insert the given values in the tables, we will use the 'insert into' command.



The screenshot shows the same database IDE window with the following SQL code:

```
31
32 • insert into person(person_ID,last_name,first_name,age)
33 values(1,'Hansen','Ola',30);
34
35 • insert into person(person_ID,last_name,first_name,age)
36 values(2,'Svenson','Tove',23);
37
38 • insert into person(person_ID,last_name,first_name,age)
39 values(3,'Petterson','Kari',20);
40
41 • insert into orders(order_ID,order_number,person_ID)
42 values(1,77895,3);
43
44 • insert into orders(order_ID,order_number,person_ID)
45 values(2,44678,3);
46
47 • insert into orders(order_ID,order_number,person_ID)
48 values(3,22456,2);
49
50 • insert into orders(order_ID,order_number,person_ID)
51 values(4,24562,1);
```

ISM_Lab_Assignment_6-YashJain_BCom5A* x

Limit to 1000 rows ▼

```

52
53 • select * from person;
54 • select * from orders;
55
56

```

Result Grid

Filter Rows:

Edit: Export/I

#	person_ID	last_name	first_name	age
1	1	Hansen	Ola	30
2	2	Svenson	Tove	23
3	3	Petterson	Kari	20
*	NULL	NULL	NULL	NULL

ISM_Lab_Assignment_6-YashJain_BCom5A* x

Limit to 1000 rows ▼

```

52
53 • select * from person;
54 • select * from orders;
55
56

```

Result Grid

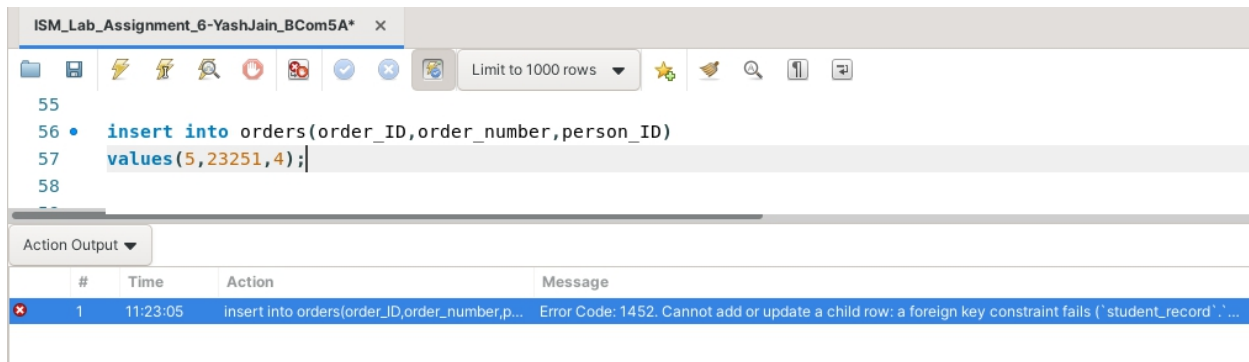
Filter Rows:

Edit: Export/I

#	order_ID	order_number	person_ID
1	1	77895	3
2	2	44678	3
3	3	22456	2
4	4	24562	1
*	NULL	NULL	NULL

Task 2: Insert values in 'Order' table with personID = 4.

The given task can be completed using the 'insert into' command. Note that when you will enter values, **it will show an error**, 'Foreign key constraint fails'. This is because the 'personID' column is a foreign key linked to the column with the same name in the table 'Person'. Hence, it will only accept the values present in the personID of the 'person' table.



The screenshot shows a database IDE window titled 'ISM_Lab_Assignment_6-YashJain_BCom5A*'. The SQL editor contains the following code:

```
55  
56 • insert into orders(order_ID,order_number,person_ID)  
57 values(5,23251,4);  
58
```

The 'Action Output' pane shows an error message:

#	Time	Action	Message
1	11:23:05	insert into orders(order_ID,order_number,p...	Error Code: 1452. Cannot add or update a child row: a foreign key constraint fails ('student_record', '...

Task 3: Delete from table 'Orders' where personID = 1;

This task can be completed by using the command 'delete'. However, if we try to delete the record from the table 'persons' first, then we won't be able to do it. It will show an error, 'Foreign key constraint fails'.



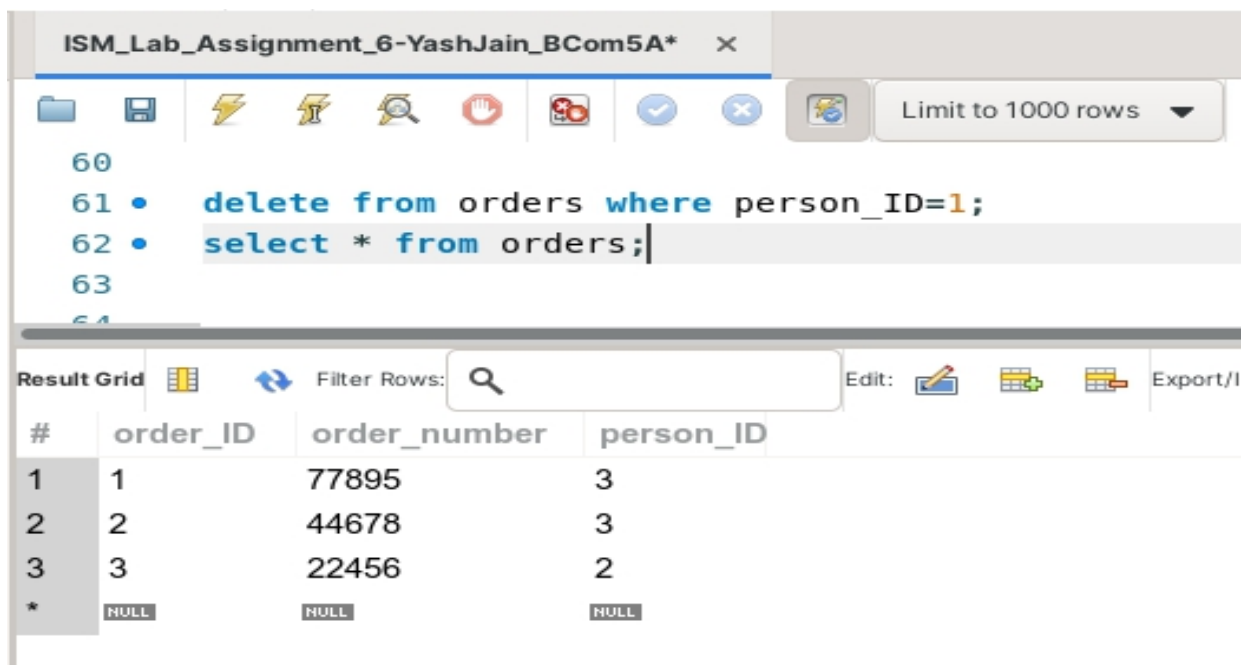
The screenshot shows a database IDE window titled 'ISM_Lab_Assignment_6-YashJain_BCom5A*'. The SQL editor contains the following code:

```
58  
59 #deleting record  
60 • delete from person where person_ID=1;  
61
```

The 'Action Output' pane shows an error message:

#	Time	Action	Message
1	11:34:13	delete from person where person_ID=1	Error Code: 1451. Cannot delete or update a parent row: a foreign key constraint fails ('student_recor...

This is because since both the tables are linked via the foreign key column, hence **first we have to delete that record from the foreign table, only then we will be able to delete it from the primary table.** This is depicted below.



The screenshot shows a database IDE window titled 'ISM_Lab_Assignment_6-YashJain_BCom5A*'. The SQL editor contains the following code:

```
60  
61 • delete from orders where person_ID=1;  
62 • select * from orders;  
63
```

The 'Result Grid' shows the following data:

#	order_ID	order_number	person_ID
1	1	77895	3
2	2	44678	3
3	3	22456	2
*	NULL	NULL	NULL

Task 4: Delete from table 'Persons' where personID = 1;

This task can be completed using the '**delete**' command. Now, since the record is already deleted from the foreign table, we will be able to delete it from the primary table as well.

The screenshot shows a database management tool interface. The top toolbar includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The SQL editor contains the following commands:

```
59 #deleting record
60
61 • delete from orders where person_ID=1;
62 • select * from orders;
63
64 • delete from person where person_ID=1;
65 • select * from person;
66
67
```

Below the editor is the 'Result Grid' section, which includes a search bar and icons for editing and exporting. The grid displays the following data:

#	person_ID	last_name	first_name	age
1	2	Svenson	Tove	23
2	3	Petterson	Kari	20
*	NULL	NULL	NULL	NULL