Task 1: Create relational database

```
create DATABASE victorTest
```

Figure 1: creating database

Create database victorTest

Task 2: Create table and insert data.

Table 1: students table

```
CREATE TABLE `victorTest`.`students` ( `studentID` VARCHAR(5) NOT NULL ,
`FirstName` VARCHAR(20) NOT NULL , `LastName` VARCHAR(20) NOT NULL , `DOB` DATE
NOT NULL , PRIMARY KEY (`studentID`)) ENGINE = InnoDB;
```

Figure 2: creating students table

```
INSERT INTO `students` (`studentID`, `FirstName`, `LastName`, `DOB`) VALUES
('S001', 'Victor', 'Allison', '1990-06-02'), ('S002', 'Fred', 'Nile',
'1940-03-03'), ('S003', 'Christine', 'Onu', '1970-09-01'), ('S004', 'James',
'Brown', '1976-03-02'), ('S005', 'Mark', 'Oliphant', '1958-10-3'), ('S006',
'George', 'Bush', '1951-11-28')
```

Figure 3: inserting studens data

Table 2: courses table

```
CREATE TABLE `victorTest`.`course` ( `CourseID` VARCHAR(5) NOT NULL ,
`CourseName` VARCHAR(100) NOT NULL , `HoursPerWeek` INT NOT NULL , `StartDate`
DATE NOT NULL , PRIMARY KEY (`CourseID`)) ENGINE = InnoDB;
```

Figure 4: creating courses table

```
INSERT INTO `courses` (`courseID`, `courseName`, `HoursPerWeek`, `StartDate`)
VALUES ('C001', 'Cert 1', '15', '2012-02-01'), ('C002', 'Cert 2', '20',
'2012-02-02'), ('C003', 'Cert 3', '16', '2012-02-03'), ('C004', 'Cert 4', '20',
'2012-02-13')
```

Figure 5: inserting data into courses

Table 3: Enrolment Table

```
create table enrollment(
StudentID varchar(5),
CourseID  varchar(5),
CONSTRAINT FOREIGN key fk_sID(StudentID) REFERENCES students(StudentID),
CONSTRAINT FOREIGN key fk_courses(CourseID) REFERENCES courses(CourseID));
```

Figure 6: creating enrolment table

```
INSERT INTO `enrollment` (`StudentID`, `CourseID`) VALUES ('S001', 'C001'),
('S002', 'C001'), ('S003', 'C002'), ('S004', 'C002'), ('S005', 'C004')
```

Figure 7: inserting enrollment data

Task 3: Select data from database

1. the select statement used is **select * from students**

```
SELECT * FROM `students`
```

Figure 8: students select statement

the results of execution

studentID	FirstName	LastName	DOB
S001	Victor	Allison	1990-06-02
S002	Fred	Nile	1940-03-03
S003	Christine	Onu	1970-09-01
S004	James	Brown	1976-03-02
S005	Mark	Oliphant	1958-10-03
S006	George	Bush	1951-11-28

Figure 9: results of execution

The results returned were the expected results

2. SQL statements : **SELECT FirstName ,LastName from students RIGHT JOIN enrollment on enrollment.StudentID=students.studentID where enrollment.CourseID='c001'**

```
SELECT FirstName ,LastName    from students RIGHT JOIN enrollment on enrollment.StudentID=students.studentID where enrollment.CourseID='c001'
```

executio results

FirstName	LastName
Victor	Allison
Fred	Nile

The results produced were the expected results

3. SQL statement: **select DISTINCT students.*, courses.* from students,courses RIGHT JOIN enrollment on enrollment.StudentID=studentID WHERE students.studentID='s001'**

```
select DISTINCT students.*, courses.* from students,courses
RIGHT JOIN enrollment on enrollment.StudentID=studentID
WHERE students.studentID='s001'
```

studentID	FirstName	LastName	DOB	courseID	courseName	HoursPerWeek	StartDate
S001	Victor	Allison	1990-06-02	C001	Cert 1	15	2012-02-01
S001	Victor	Allison	1990-06-02	C002	Cert 2	20	2012-02-02
S001	Victor	Allison	1990-06-02	C003	Cert 3	16	2012-02-03
S001	Victor	Allison	1990-06-02	C004	Cert 4	20	2012-02-13

The execution produced the desired results

4. SQL statement: **SELECT * from courses ORDER by StartDate ASC**

```
SELECT * from courses ORDER by StartDate ASC
```

	courseID	courseName	HoursPerWeek	StartDate ▲ 1
Edit Copy Delete	C001	Cert 1	15	2012-02-01
Edit Copy Delete	C002	Cert 2	20	2012-02-02
Edit Copy Delete	C003	Cert 3	16	2012-02-03
Edit Copy Delete	C004	Cert 4	20	2012-02-13

The execution produced the desired results

5. SQL STATEMENT: **SELECT COUNT(*) from enrollment RIGHT JOIN courses on enrollment.CourseID=courses.courseID WHERE courses.courseName='Cert 1'**

```
SELECT COUNT(* ) from enrollment RIGHT JOIN courses on enrollment.CourseID=courses.courseID WHERE courses.courseName='Cert 1'
```

COUNT(*)
2

The execution produced the desired results

6. SQL statement :**select max(HoursPerWeek) from courses**

```
select max(HoursPerWeek) from courses
```

max(HoursPerWeek)
20

Figure 10: execution results

The execution produced the desired results

7. SQL Statement: **select COUNT(*) from courses**

```
select COUNT(*) from courses
```

COUNT(*)
4

The execution produced the desired results

8.
9.

10. sql statement: **select * from students where FirstName LIKE 'Chris%'**

```
select * from students where FirstName LIKE 'Chris%'
```

studentID	FirstName	LastName	DOB
S003	Christine	Onu	1970-09-01

task 4: Modify table structure

sql statement: **alter TABLE courses add CourseEndDat date**

courseID	courseName	HoursPerWeek	StartDate	CourseEndDat
C001	Cert 1	15	2012-02-01	*NULL*
C002	Cert 2	20	2012-02-02	*NULL*
C003	Cert 3	16	2012-02-03	*NULL*
C004	Cert 4	20	2012-02-13	*NULL*

Task 5: Modify table data

1. sql statement: **UPDATE `students` SET `DOB` = '1940-06-06' WHERE `students`.`studentID` = 'S002'**

S002	Fred	Nile	1940-06-06

2.