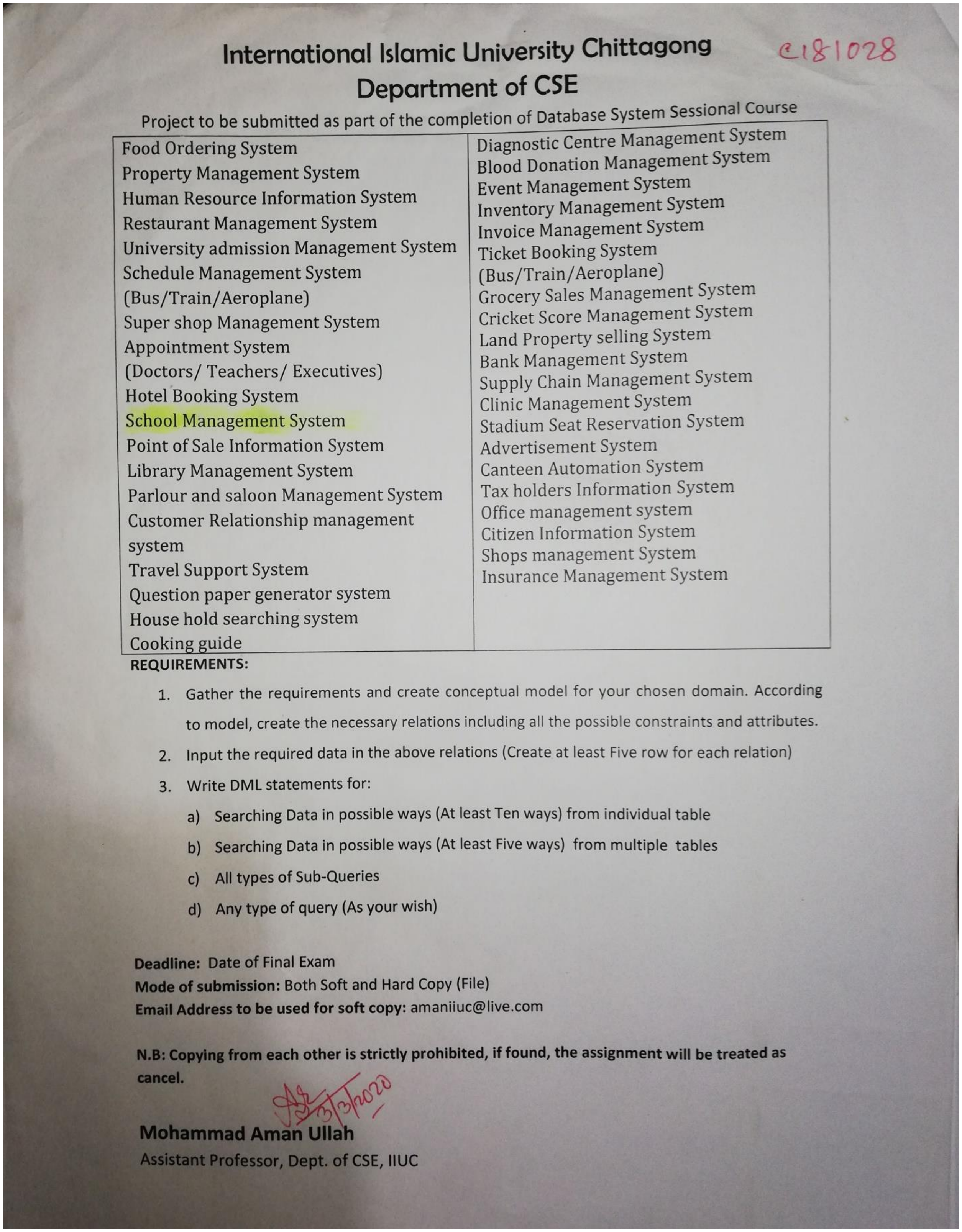


C181028

International Islamic University Chittagong
Department of CSE

Project to be submitted as part of the completion of Database System Sessional Course

Food Ordering System
Property Management System
Human Resource Information System
Restaurant Management System
University admission Management System
Schedule Management System
(Bus/Train/Aeroplane)
Super shop Management System
Appointment System
(Doctors/ Teachers/ Executives)
Hotel Booking System
School Management System
Point of Sale Information System
Library Management System
Parlour and saloon Management System
Customer Relationship management
system
Travel Support System
Question paper generator system
House hold searching system
Cooking guide

Diagnostic Centre Management System
Blood Donation Management System
Event Management System
Inventory Management System
Invoice Management System
Ticket Booking System
(Bus/Train/Aeroplane)
Grocery Sales Management System
Cricket Score Management System
Land Property selling System
Bank Management System
Supply Chain Management System
Clinic Management System
Stadium Seat Reservation System
Advertisement System
Canteen Automation System
Tax holders Information System
Office management system
Citizen Information System
Shops management System
Insurance Management System

REQUIREMENTS:

1. Gather the requirements and create conceptual model for your chosen domain. According to model, create the necessary relations including all the possible constraints and attributes.
2. Input the required data in the above relations (Create at least Five row for each relation)
3. Write DML statements for:
   a) Searching Data in possible ways (At least Ten ways) from individual table
   b) Searching Data in possible ways (At least Five ways) from multiple tables
   c) All types of Sub-Queries
   d) Any type of query (As your wish)

Deadline: Date of Final Exam
Mode of submission: Both Soft and Hard Copy (File)
Email Address to be used for soft copy: amaniiuc@live.com

N.B: Copying from each other is strictly prohibited, if found, the assignment will be treated as cancel.

3/3/2020

Mohammad Aman Ullah
Assistant Professor, Dept. of CSE, IIUC

Lab Assignment

Course Code : CSE-2424

Course Title : Database System Sessional

Submitted by:

Name : Iftehaz Newaz
ID : *********
Section : 4AM
Semester : 4th

Submitted to :

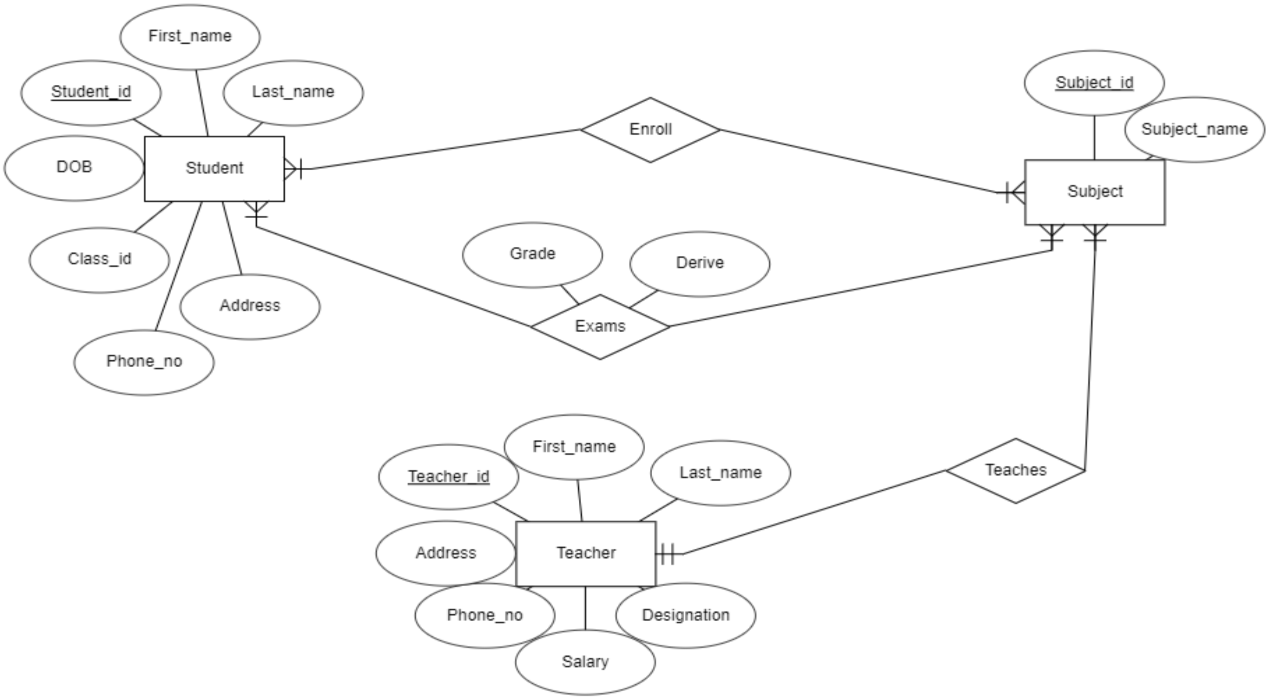
Mohammad Aman Ullah
Assistant Professor
CSE, IIUC

School Management System

School Management System consists of three vital parts:

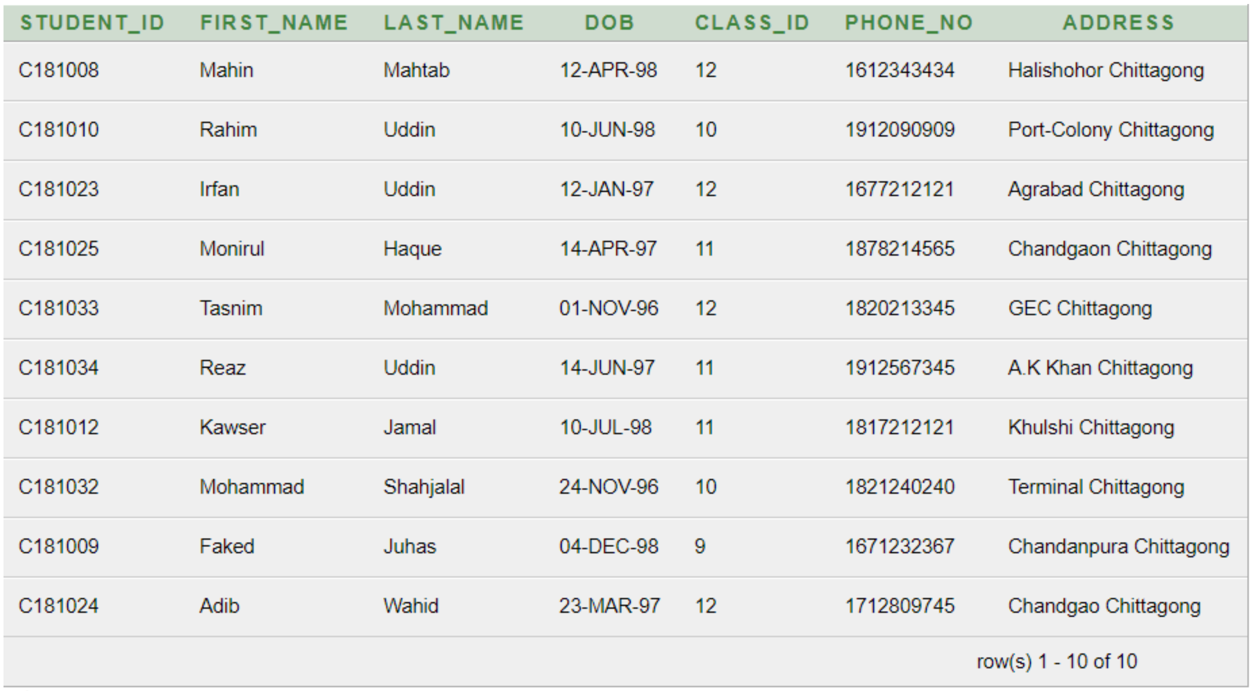
1. Students
2. Subjects
3. Teachers

And these parts are known as entity in Database Management System.
A Student can enroll as many Subjects as he wants and a Subject can be enrolled by many Students so there has to be many to many relationship between Students entity and Subjects entity under the relationship name Enroll.
A Teacher can teach multiple Subjects but same subject can't be taught by multiple teachers so there has to be one to many relationship as well between Teachers entity and Subjects entity. Finally a student can give multiple exams on multiple subjects and same subject can have multiple students giving exam so there has to be many to many relationship between Students entity and Subjects entity under the relationship name Exams with two Important Attribute Grade of Exam and Exam Date.
Including these vital parts a simple and efficient school management system can be built. To give a better understanding the **ERD** is given below:



SQL & Data of Tables:

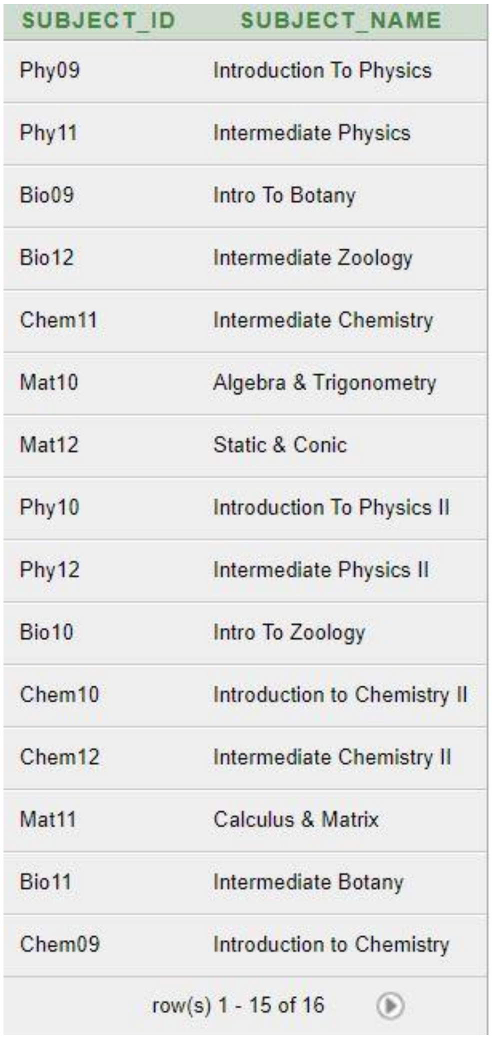
```
CREATE TABLE  "STUDENT"
   (  "STUDENT_ID" VARCHAR2(12),
      "FIRST_NAME" VARCHAR2(10) NOT NULL ENABLE,
      "LAST_NAME" VARCHAR2(10) NOT NULL ENABLE,
      "DOB" DATE NOT NULL ENABLE,
      "CLASS_ID" NUMBER NOT NULL ENABLE,
      "PHONE_NO" NUMBER(11,0) NOT NULL ENABLE,
      "ADDRESS" VARCHAR2(100),
       CONSTRAINT "STUDENT_PK" PRIMARY KEY
     ("STUDENT_ID") ENABLE
   )
```



STUDENT_ID	FIRST_NAME	LAST_NAME	DOB	CLASS_ID	PHONE_NO	ADDRESS
C181008	Mahin	Mahtab	12-APR-98	12	1612343434	Halishohor Chittagong
C181010	Rahim	Uddin	10-JUN-98	10	1912090909	Port-Colony Chittagong
C181023	Irfan	Uddin	12-JAN-97	12	1677212121	Agrabad Chittagong
C181025	Monirul	Haque	14-APR-97	11	1878214565	Chandgaon Chittagong
C181033	Tasnim	Mohammad	01-NOV-96	12	1820213345	GEC Chittagong
C181034	Reaz	Uddin	14-JUN-97	11	1912567345	A.K Khan Chittagong
C181012	Kawser	Jamal	10-JUL-98	11	1817212121	Khulshi Chittagong
C181032	Mohammad	Shahjalal	24-NOV-96	10	1821240240	Terminal Chittagong
C181009	Faked	Juhas	04-DEC-98	9	1671232367	Chandanpura Chittagong
C181024	Adib	Wahid	23-MAR-97	12	1712809745	Chandgao Chittagong

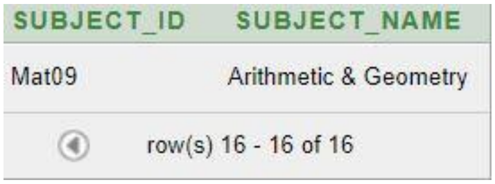
row(s) 1 - 10 of 10

```
CREATE TABLE  "SUBJECT"
   (  "SUBJECT_ID" VARCHAR2(10),
      "SUBJECT_NAME" VARCHAR2(30) NOT NULL ENABLE,
       CONSTRAINT "SUBJECT_PK" PRIMARY KEY
     ("SUBJECT_ID") ENABLE
   )
```



SUBJECT_ID	SUBJECT_NAME
Phy09	Introduction To Physics
Phy11	Intermediate Physics
Bio09	Intro To Botany
Bio12	Intermediate Zoology
Chem11	Intermediate Chemistry
Mat10	Algebra & Trigonometry
Mat12	Static & Conic
Phy10	Introduction To Physics II
Phy12	Intermediate Physics II
Bio10	Intro To Zoology
Chem10	Introduction to Chemistry II
Chem12	Intermediate Chemistry II
Mat11	Calculus & Matrix
Bio11	Intermediate Botany
Chem09	Introduction to Chemistry

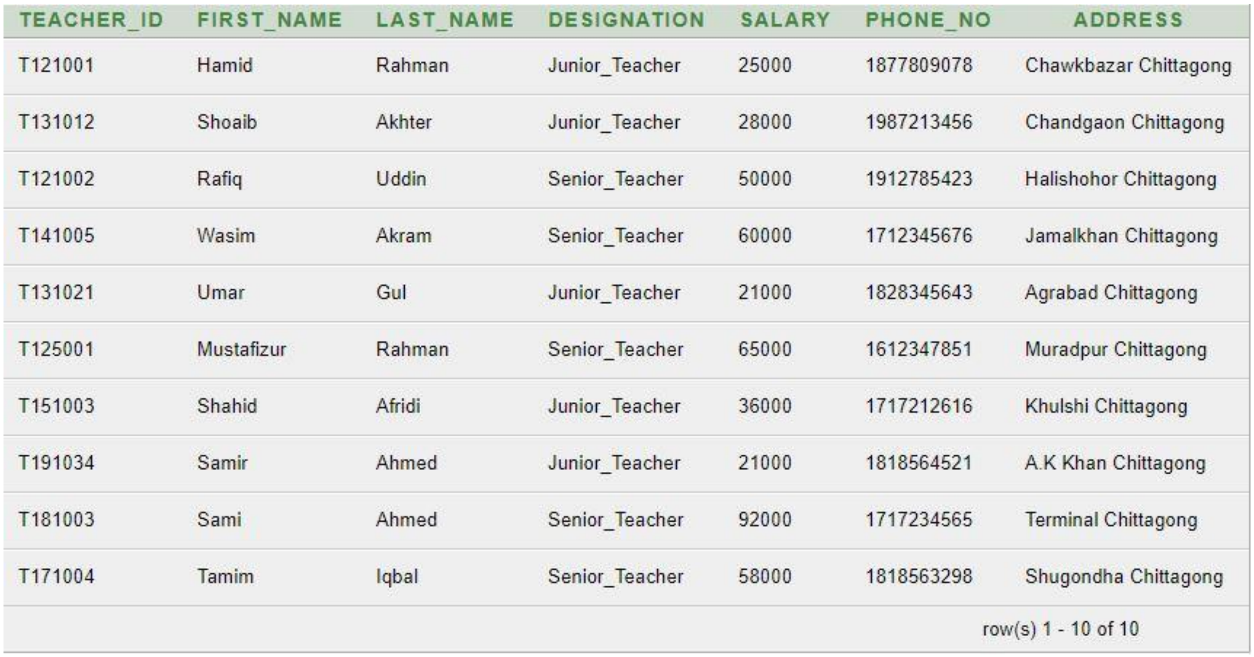
row(s) 1 - 15 of 16



SUBJECT_ID	SUBJECT_NAME
Mat09	Arithmetic & Geometry

row(s) 16 - 16 of 16

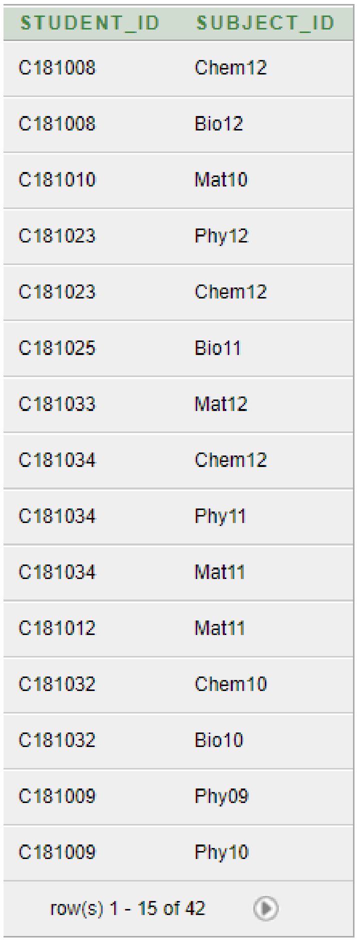
```
CREATE TABLE  "TEACHER"
   (  "TEACHER_ID" VARCHAR2(12),
      "FIRST_NAME" VARCHAR2(10) NOT NULL ENABLE,
      "LAST_NAME" VARCHAR2(10) NOT NULL ENABLE,
      "DESIGNATION" VARCHAR2(15),
      "SALARY" NUMBER(7,0),
      "PHONE_NO" NUMBER(11,0) NOT NULL ENABLE,
      "ADDRESS" VARCHAR2(100),
       CONSTRAINT "TEACHER_PK" PRIMARY KEY
     ("TEACHER_ID") ENABLE,
      CONSTRAINT "TEACHER_CK1" CHECK (salary>0) ENABLE
   )
```



TEACHER_ID	FIRST_NAME	LAST_NAME	DESIGNATION	SALARY	PHONE_NO	ADDRESS
T121001	Hamid	Rahman	Junior_Teacher	25000	1877809078	Chawkbazar Chittagong
T131012	Shoaib	Akhter	Junior_Teacher	28000	1987213456	Chandgaon Chittagong
T121002	Rafiq	Uddin	Senior_Teacher	50000	1912785423	Halishohor Chittagong
T141005	Wasim	Akram	Senior_Teacher	60000	1712345676	Jamalkhan Chittagong
T131021	Umar	Gul	Junior_Teacher	21000	1828345643	Agrabad Chittagong
T125001	Mustafizur	Rahman	Senior_Teacher	65000	1612347851	Muradpur Chittagong
T151003	Shahid	Afridi	Junior_Teacher	36000	1717212616	Khulshi Chittagong
T191034	Samir	Ahmed	Junior_Teacher	21000	1818564521	A.K Khan Chittagong
T181003	Sami	Ahmed	Senior_Teacher	92000	1717234565	Terminal Chittagong
T171004	Tamim	Iqbal	Senior_Teacher	58000	1818563298	Shugondha Chittagong

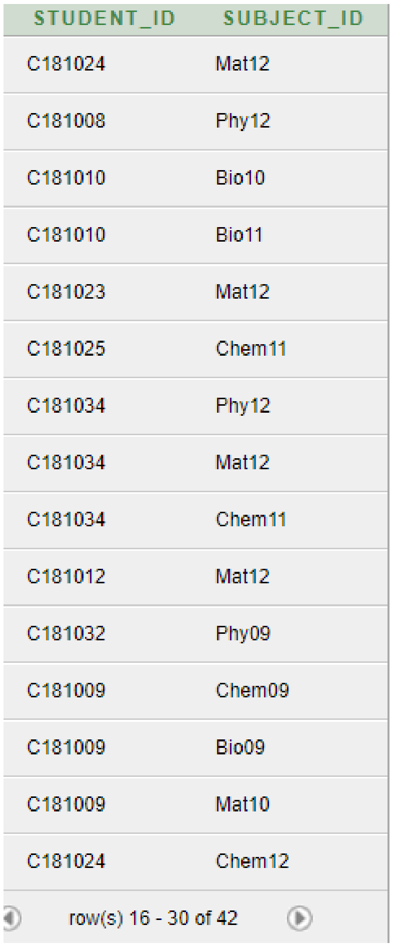
row(s) 1 - 10 of 10

```
CREATE TABLE  "TEACHES"
   (  "TEACHER_ID" VARCHAR2(12) NOT NULL ENABLE,
      "SUBJECT_ID" VARCHAR2(10) NOT NULL ENABLE,
       CONSTRAINT "TEACHES_FK" FOREIGN KEY
     ("TEACHER_ID")
        REFERENCES  "TEACHER" ("TEACHER_ID") ENABLE,
       CONSTRAINT "TEACHES_FK2" FOREIGN KEY
     ("SUBJECT_ID")
        REFERENCES  "SUBJECT" ("SUBJECT_ID") ENABLE
   )
```



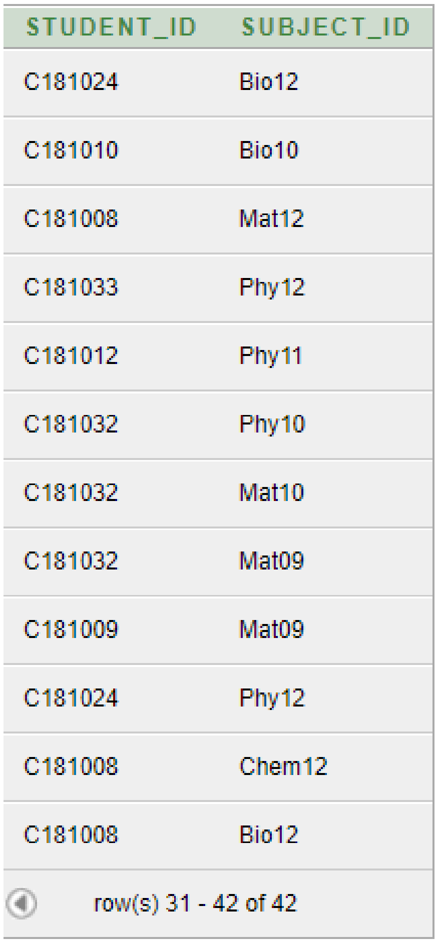
STUDENT_ID	SUBJECT_ID
C181008	Chem12
C181008	Bio12
C181010	Mat10
C181023	Phy12
C181023	Chem12
C181025	Bio11
C181033	Mat12
C181034	Chem12
C181034	Phy11
C181034	Mat11
C181012	Mat11
C181032	Chem10
C181032	Bio10
C181009	Phy09
C181009	Phy10

row(s) 1 - 15 of 42



STUDENT_ID	SUBJECT_ID
C181024	Mat12
C181008	Phy12
C181010	Bio10
C181010	Bio11
C181023	Mat12
C181025	Chem11
C181034	Phy12
C181034	Mat12
C181034	Chem11
C181012	Mat12
C181032	Phy09
C181009	Chem09
C181009	Bio09
C181009	Mat10
C181024	Chem12

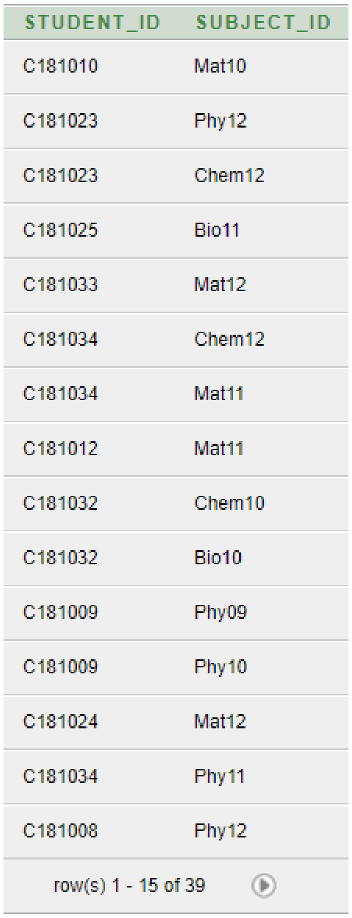
row(s) 16 - 30 of 42



STUDENT_ID	SUBJECT_ID
C181024	Bio12
C181010	Bio10
C181008	Mat12
C181033	Phy12
C181012	Phy11
C181032	Phy10
C181032	Mat10
C181032	Mat09
C181009	Mat09
C181024	Phy12
C181008	Chem12
C181008	Bio12

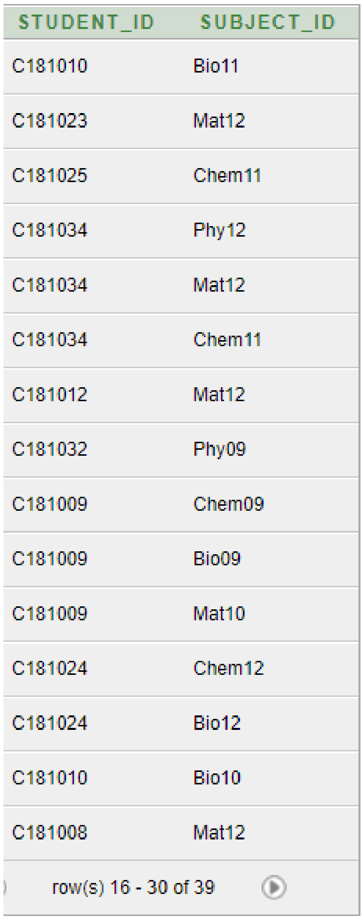
row(s) 31 - 42 of 42

```
CREATE TABLE  "ENROLL"
   (  "STUDENT_ID" VARCHAR2(12) NOT NULL ENABLE,
      "SUBJECT_ID" VARCHAR2(10) NOT NULL ENABLE,
       CONSTRAINT "ENROLL_FK" FOREIGN KEY ("STUDENT_ID")
        REFERENCES  "STUDENT" ("STUDENT_ID") ENABLE,
       CONSTRAINT "ENROLL_FK2" FOREIGN KEY
     ("SUBJECT_ID")
        REFERENCES  "SUBJECT" ("SUBJECT_ID") ENABLE
   )
```



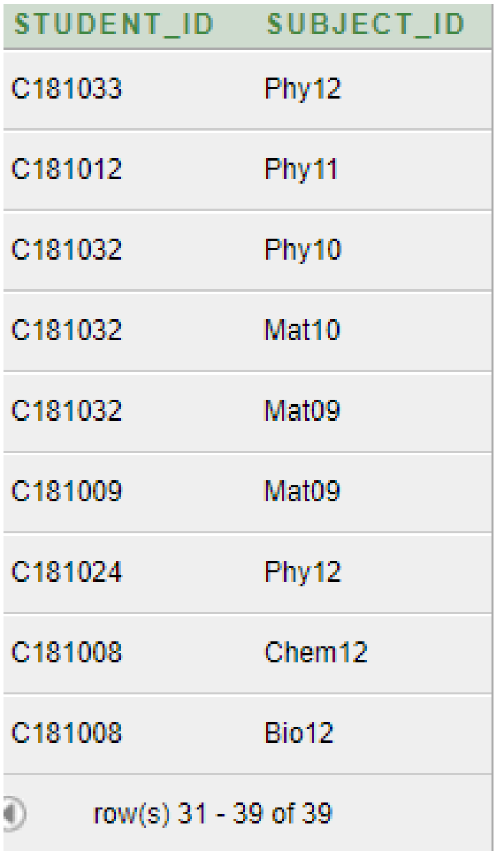
STUDENT_ID	SUBJECT_ID
C181010	Mat10
C181023	Phy12
C181023	Chem12
C181025	Bio11
C181033	Mat12
C181034	Chem12
C181034	Mat11
C181012	Mat11
C181032	Chem10
C181032	Bio10
C181009	Phy09
C181009	Phy10
C181024	Mat12
C181034	Phy11
C181008	Phy12

row(s) 1 - 15 of 39



STUDENT_ID	SUBJECT_ID
C181010	Bio11
C181023	Mat12
C181025	Chem11
C181034	Phy12
C181034	Mat12
C181034	Chem11
C181012	Mat12
C181032	Phy09
C181009	Chem09
C181009	Bio09
C181009	Mat10
C181024	Chem12
C181024	Bio12
C181010	Bio10
C181008	Mat12

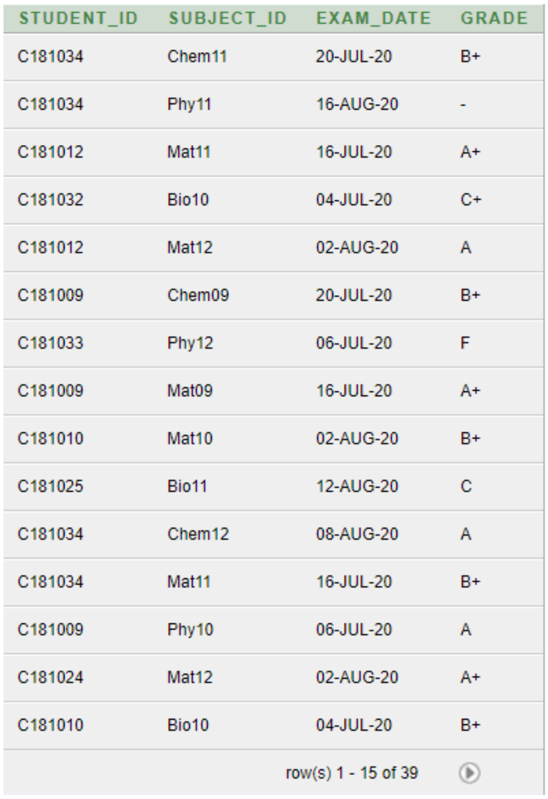
row(s) 16 - 30 of 39



STUDENT_ID	SUBJECT_ID
C181033	Phy12
C181012	Phy11
C181032	Phy10
C181032	Mat10
C181032	Mat09
C181009	Mat09
C181024	Phy12
C181008	Chem12
C181008	Bio12

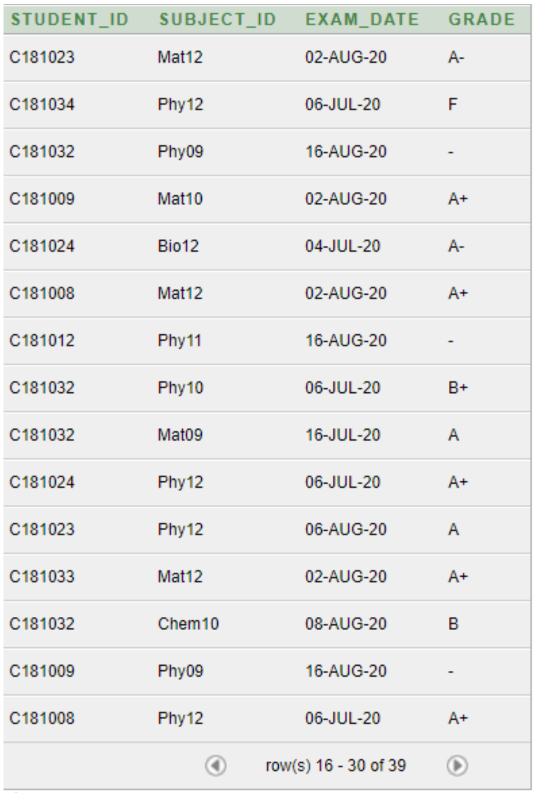
row(s) 31 - 39 of 39

```
CREATE TABLE  "EXAMS"
   (  "STUDENT_ID" VARCHAR2(12) NOT NULL ENABLE,
      "SUBJECT_ID" VARCHAR2(10) NOT NULL ENABLE,
      "EXAM_DATE" DATE NOT NULL ENABLE,
      "GRADE" VARCHAR2(2),
       CONSTRAINT "EXAMS_FK" FOREIGN KEY ("STUDENT_ID")
        REFERENCES  "STUDENT" ("STUDENT_ID") ENABLE,
       CONSTRAINT "EXAMS_FK2" FOREIGN KEY ("SUBJECT_ID")
        REFERENCES  "SUBJECT" ("SUBJECT_ID") ENABLE
   )
```



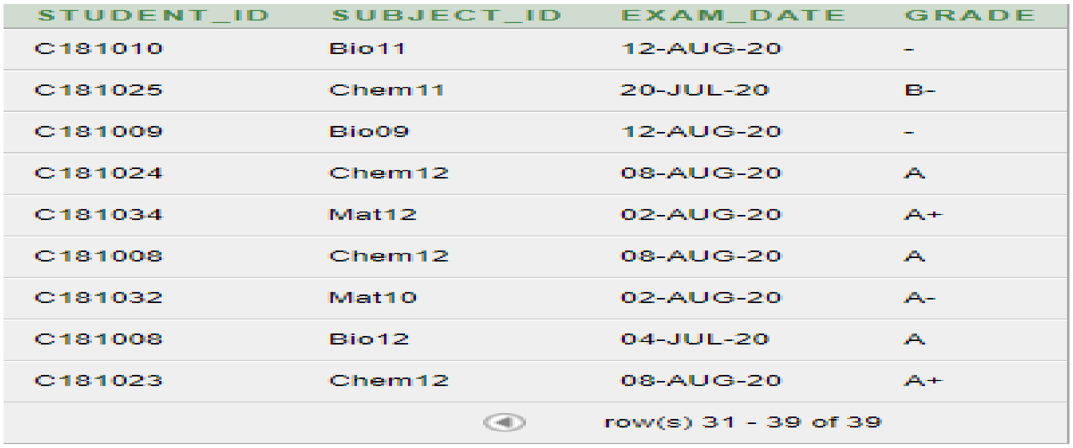
STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181034	Chem11	20-JUL-20	B+
C181034	Phy11	16-AUG-20	-
C181012	Mat11	16-JUL-20	A+
C181032	Bio10	04-JUL-20	C+
C181012	Mat12	02-AUG-20	A
C181009	Chem09	20-JUL-20	B+
C181033	Phy12	06-JUL-20	F
C181009	Mat09	16-JUL-20	A+
C181010	Mat10	02-AUG-20	B+
C181025	Bio11	12-AUG-20	C
C181034	Chem12	08-AUG-20	A
C181034	Mat11	16-JUL-20	B+
C181009	Phy10	06-JUL-20	A
C181024	Mat12	02-AUG-20	A+
C181010	Bio10	04-JUL-20	B+

row(s) 1 - 15 of 39



STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181023	Mat12	02-AUG-20	A-
C181034	Phy12	06-JUL-20	F
C181032	Phy09	16-AUG-20	-
C181009	Mat10	02-AUG-20	A+
C181024	Bio12	04-JUL-20	A-
C181008	Mat12	02-AUG-20	A+
C181012	Phy11	16-AUG-20	-
C181032	Phy10	06-JUL-20	B+
C181032	Mat09	16-JUL-20	A
C181024	Phy12	06-JUL-20	A+
C181023	Phy12	06-AUG-20	A
C181033	Mat12	02-AUG-20	A+
C181032	Chem10	08-AUG-20	B
C181009	Phy09	16-AUG-20	-
C181008	Phy12	06-JUL-20	A+

row(s) 16 - 30 of 39



STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181010	Bio11	12-AUG-20	-
C181025	Chem11	20-JUL-20	B-
C181009	Bio09	12-AUG-20	-
C181024	Chem12	08-AUG-20	A
C181034	Mat12	02-AUG-20	A+
C181008	Chem12	08-AUG-20	A
C181032	Mat10	02-AUG-20	A-
C181008	Bio12	04-JUL-20	A
C181023	Chem12	08-AUG-20	A+

row(s) 31 - 39 of 39

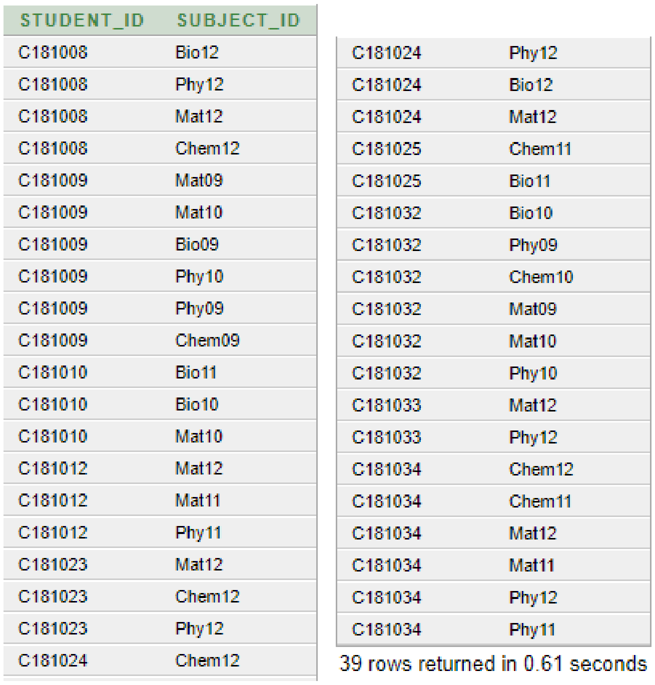
DML Statements searching query:

1. Ten ways from individual table:

Enroll Table

i) Find all the students who have enrolled any subjects:

```
Select *
from enroll
order by student_id ASC
```

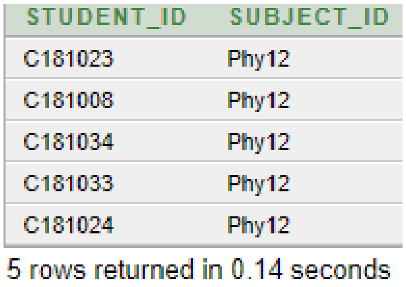


STUDENT_ID	SUBJECT_ID
C181008	Bio12
C181008	Phy12
C181008	Mat12
C181008	Chem12
C181009	Mat09
C181009	Mat10
C181009	Bio09
C181009	Phy10
C181009	Phy09
C181009	Chem09
C181010	Bio11
C181010	Bio10
C181010	Mat10
C181012	Mat12
C181012	Mat11
C181012	Phy11
C181023	Mat12
C181023	Chem12
C181023	Phy12
C181024	Chem12
C181024	Phy12
C181024	Bio12
C181024	Mat12
C181025	Chem11
C181025	Bio11
C181032	Bio10
C181032	Phy09
C181032	Chem10
C181032	Mat09
C181032	Mat10
C181032	Phy10
C181033	Mat12
C181033	Phy12
C181034	Chem12
C181034	Chem11
C181034	Mat12
C181034	Mat11
C181034	Phy12
C181034	Phy11

39 rows returned in 0.61 seconds

ii) Find all the students who enrolled phy12:

```
SELECT *
FROM ENROLL
WHERE SUBJECT_ID='Phy12'
```

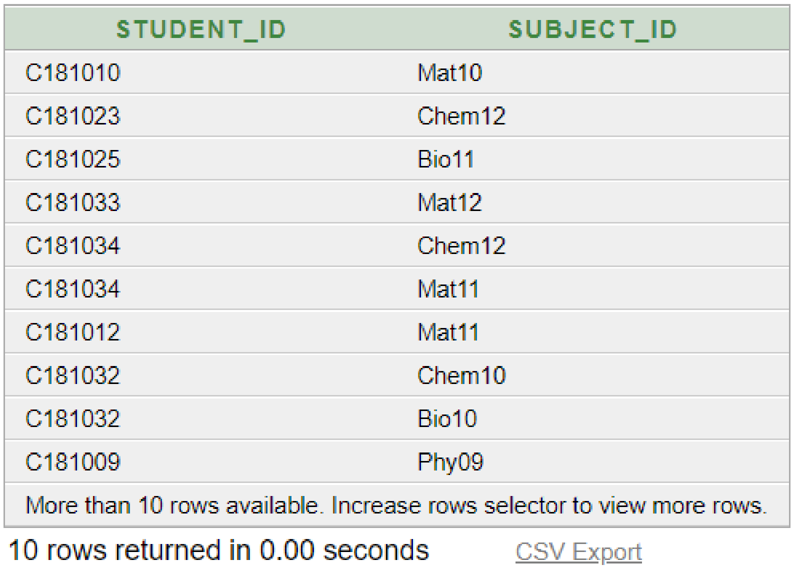


STUDENT_ID	SUBJECT_ID
C181023	Phy12
C181008	Phy12
C181034	Phy12
C181033	Phy12
C181024	Phy12

5 rows returned in 0.14 seconds

iii) Find all the students who didn't enroll phy12:

```
select *
from enroll
where subject_id <>'Phy12'
```



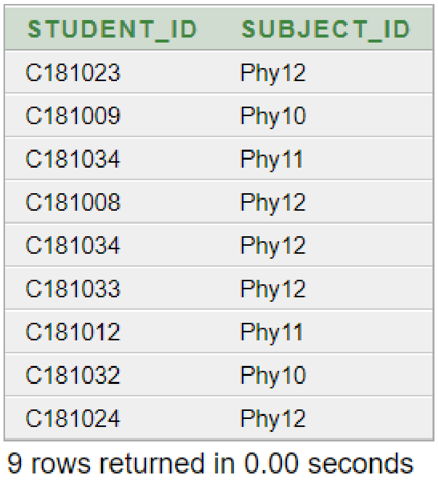
STUDENT_ID	SUBJECT_ID
C181010	Mat10
C181023	Chem12
C181025	Bio11
C181033	Mat12
C181034	Chem12
C181034	Mat11
C181012	Mat11
C181032	Chem10
C181032	Bio10
C181009	Phy09

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds

iv)Find all the students who enroll Phy12,phy11,phy10:

```
select *
from enroll
where subject_id In('Phy12','Phy11','Phy10')
```

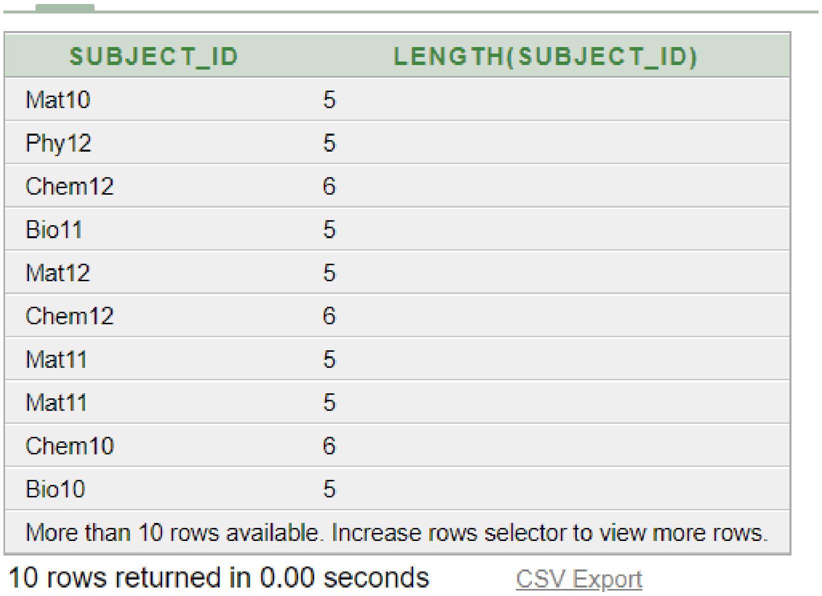


STUDENT_ID	SUBJECT_ID
C181023	Phy12
C181009	Phy10
C181034	Phy11
C181008	Phy12
C181034	Phy12
C181033	Phy12
C181012	Phy11
C181032	Phy10
C181024	Phy12

9 rows returned in 0.00 seconds

v)Show the length of each subject id:

```
select subject_id,length(subject_id)
from enroll
```



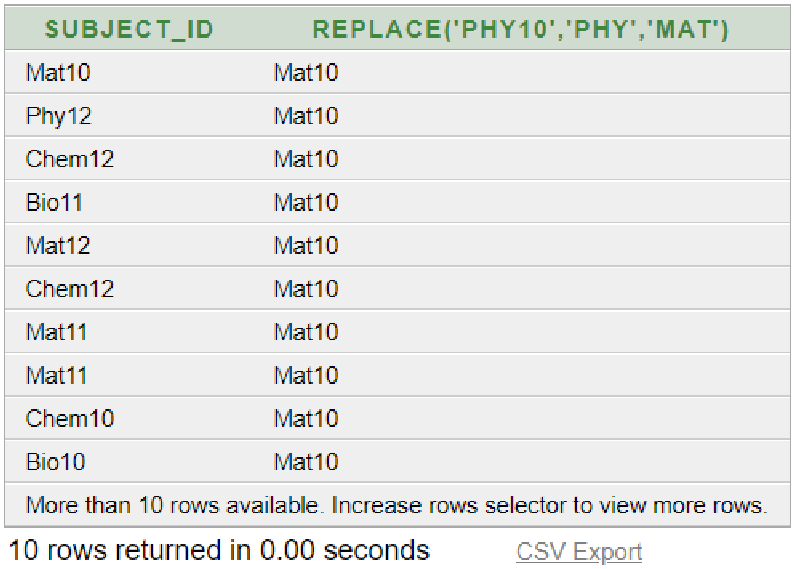
SUBJECT_ID	LENGTH(SUBJECT_ID)
Mat10	5
Phy12	5
Chem12	6
Bio11	5
Mat12	5
Chem12	6
Mat11	5
Mat11	5
Chem10	6
Bio10	5

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

vi)Replace the subject id “Phy10” with ‘Mat10’:

```
select subject_id,replace('Phy10','Phy','Mat')
from enroll
```



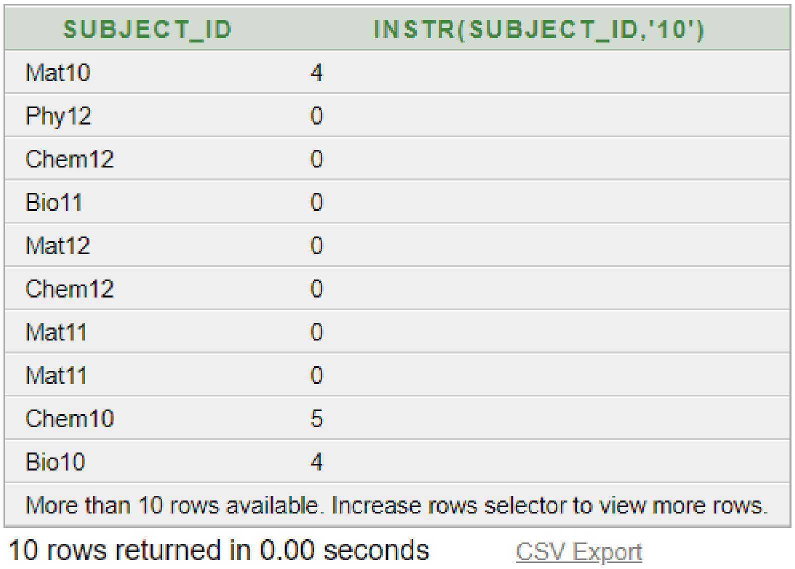
SUBJECT_ID	REPLACE('PHY10','PHY','MAT')
Mat10	Mat10
Phy12	Mat10
Chem12	Mat10
Bio11	Mat10
Mat12	Mat10
Chem12	Mat10
Mat11	Mat10
Mat11	Mat10
Chem10	Mat10
Bio10	Mat10

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

vii) Find the placement of 10 in a subject id:

```
select subject_id,Instr(subject_id,'10')
from enroll
```



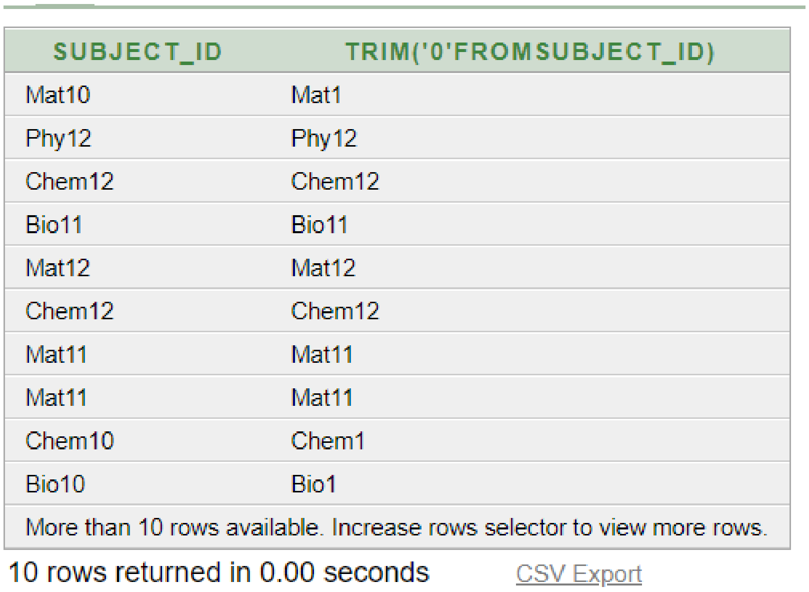
SUBJECT_ID	INSTR(SUBJECT_ID,'10')
Mat10	4
Phy12	0
Chem12	0
Bio11	0
Mat12	0
Chem12	0
Mat11	0
Mat11	0
Chem10	5
Bio10	4

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

viii)remove the last code 0 from subject id:

```
select subject_id,TRIM('0' FROM SUBJECT_ID)
from enroll
```

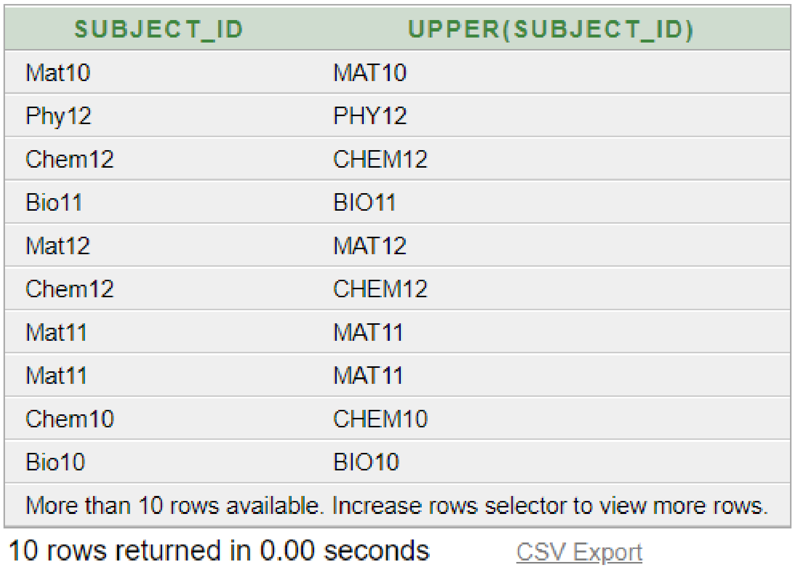


SUBJECT_ID	TRIM('0'FROMSUBJECT_ID)
Mat10	Mat1
Phy12	Phy12
Chem12	Chem12
Bio11	Bio11
Mat12	Mat12
Chem12	Chem12
Mat11	Mat11
Mat11	Mat11
Chem10	Chem1
Bio10	Bio1

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

ix) Show all the subject id in Upper case:
select subject_id, UPPER(SUBJECT_ID)
from enroll

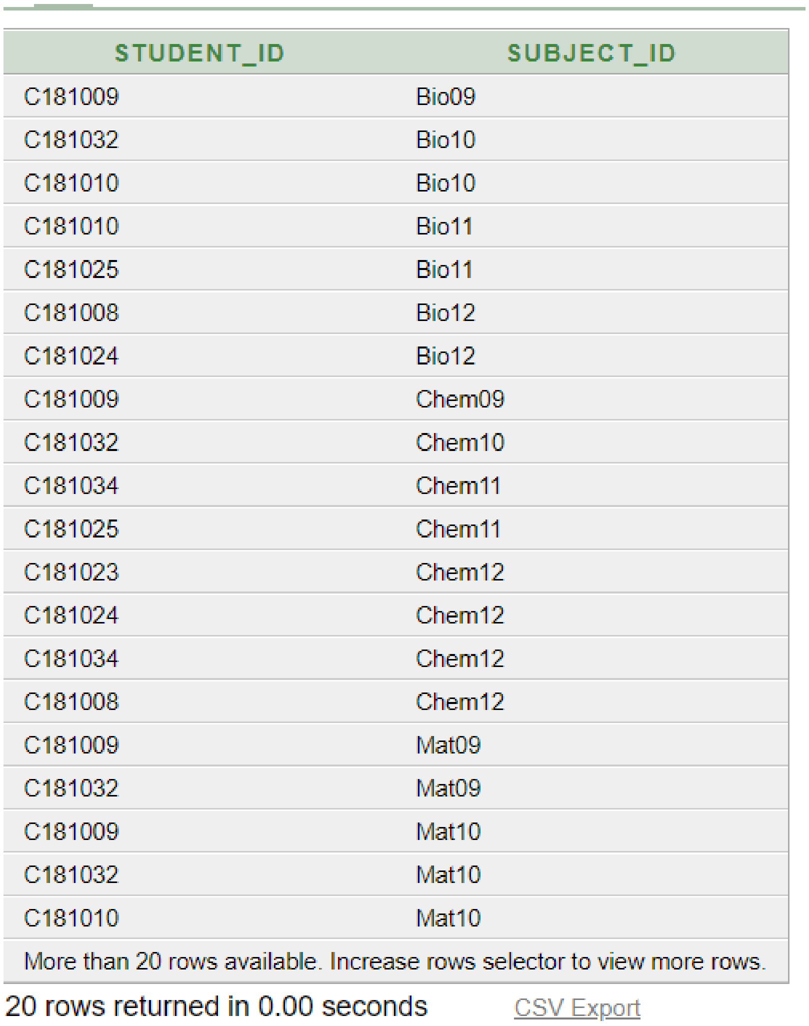


SUBJECT_ID	UPPER(SUBJECT_ID)
Mat10	MAT10
Phy12	PHY12
Chem12	CHEM12
Bio11	BIO11
Mat12	MAT12
Chem12	CHEM12
Mat11	MAT11
Mat11	MAT11
Chem10	CHEM10
Bio10	BIO10

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

x) Show the subject id in a group:
select student_id,subject_id
from enroll
order by subject_id



STUDENT_ID	SUBJECT_ID
C181009	Bio09
C181032	Bio10
C181010	Bio10
C181010	Bio11
C181025	Bio11
C181008	Bio12
C181024	Bio12
C181009	Chem09
C181032	Chem10
C181034	Chem11
C181025	Chem11
C181023	Chem12
C181024	Chem12
C181034	Chem12
C181008	Chem12
C181009	Mat09
C181032	Mat09
C181009	Mat10
C181032	Mat10
C181010	Mat10

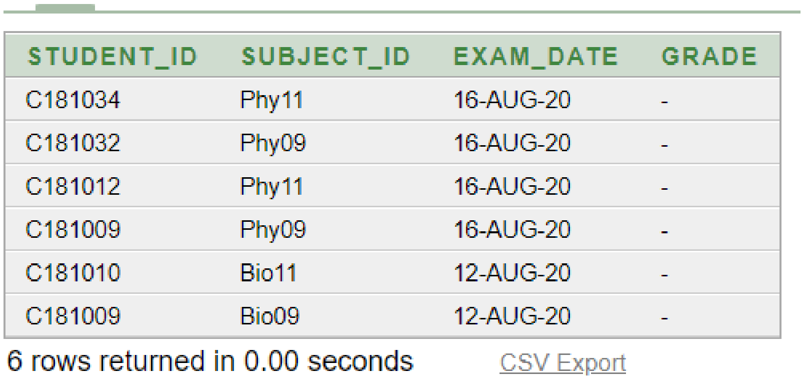
More than 20 rows available. Increase rows selector to view more rows.

20 rows returned in 0.00 seconds

EXAMS TABLE

i)Find all the students who have not got their grade yet:

```
select *
from exams
where grade is null
```

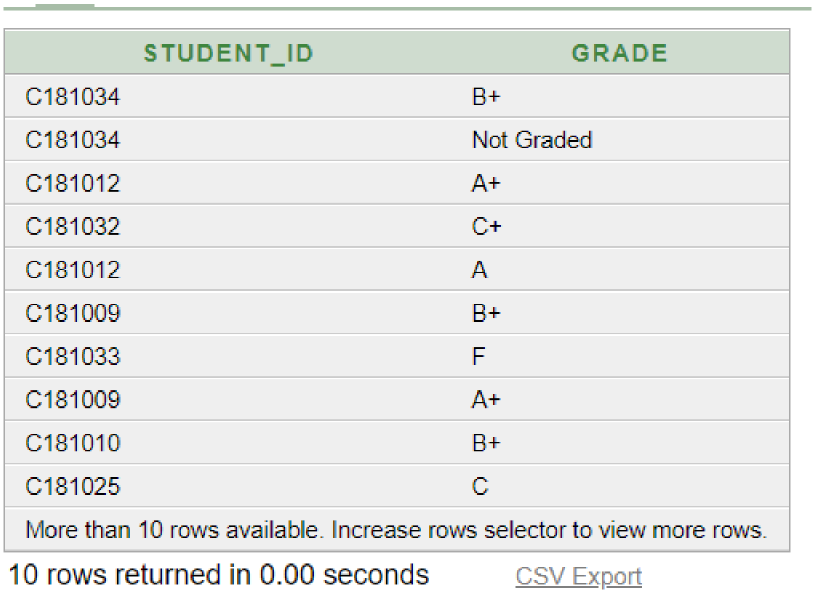


STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181034	Phy11	16-AUG-20	-
C181032	Phy09	16-AUG-20	-
C181012	Phy11	16-AUG-20	-
C181009	Phy09	16-AUG-20	-
C181010	Bio11	12-AUG-20	-
C181009	Bio09	12-AUG-20	-

6 rows returned in 0.00 seconds CSV Export

ii)Show all the non graded result as not graded:

```
select student_id,NVL(Grade,'Not Graded')GRADE
from exams
```



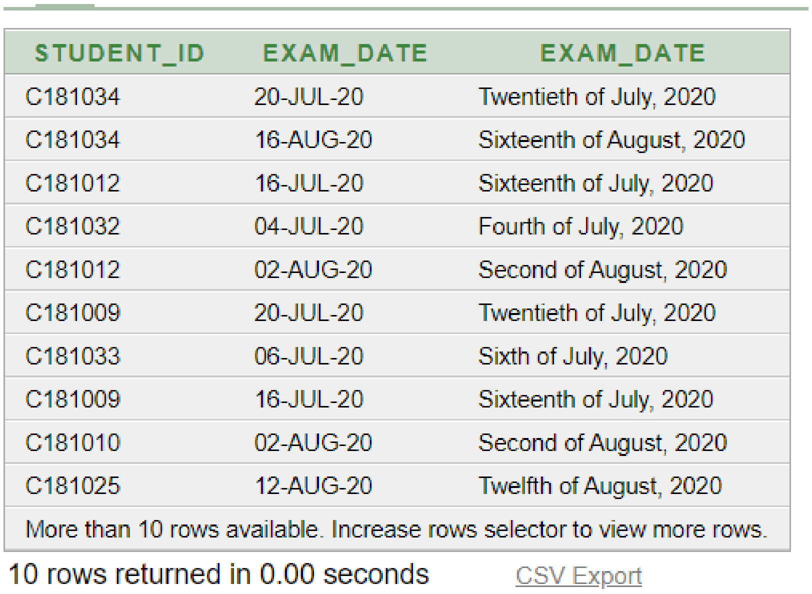
STUDENT_ID	GRADE
C181034	B+
C181034	Not Graded
C181012	A+
C181032	C+
C181012	A
C181009	B+
C181033	F
C181009	A+
C181010	B+
C181025	C

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

iii)Show the exam date as Twenntieth of June,2020:

```
select student_id,exam_date,to_char(exam_date,'fmDdspth "of" Month,
YYYY')EXAM_DATE
from exams
```



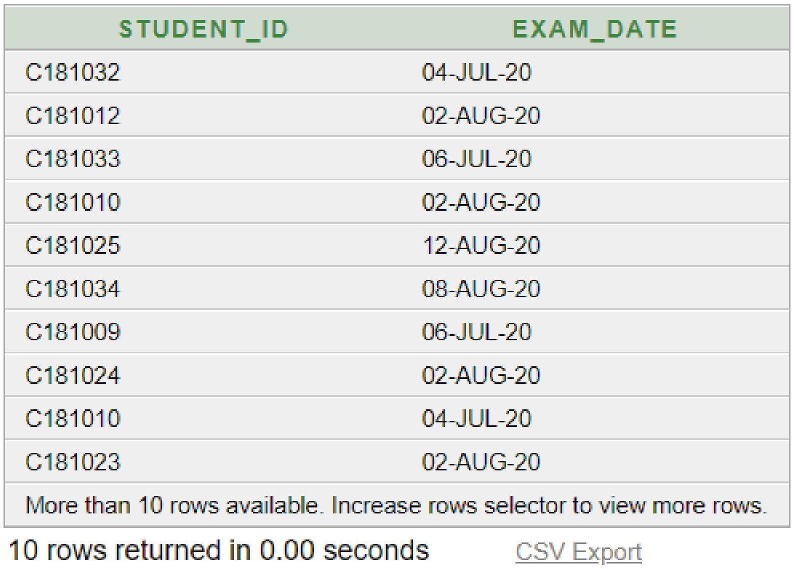
STUDENT_ID	EXAM_DATE	EXAM_DATE
C181034	20-JUL-20	Twentieth of July, 2020
C181034	16-AUG-20	Sixteenth of August, 2020
C181012	16-JUL-20	Sixteenth of July, 2020
C181032	04-JUL-20	Fourth of July, 2020
C181012	02-AUG-20	Second of August, 2020
C181009	20-JUL-20	Twentieth of July, 2020
C181033	06-JUL-20	Sixth of July, 2020
C181009	16-JUL-20	Sixteenth of July, 2020
C181010	02-AUG-20	Second of August, 2020
C181025	12-AUG-20	Twelfth of August, 2020

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds

iv) show the exams that's before 16th august 2020:

```
select student_id,exam_date
from exams
where to_char(exam_date,'DD-Mon-YYYY')<'16-Aug-2020'
```



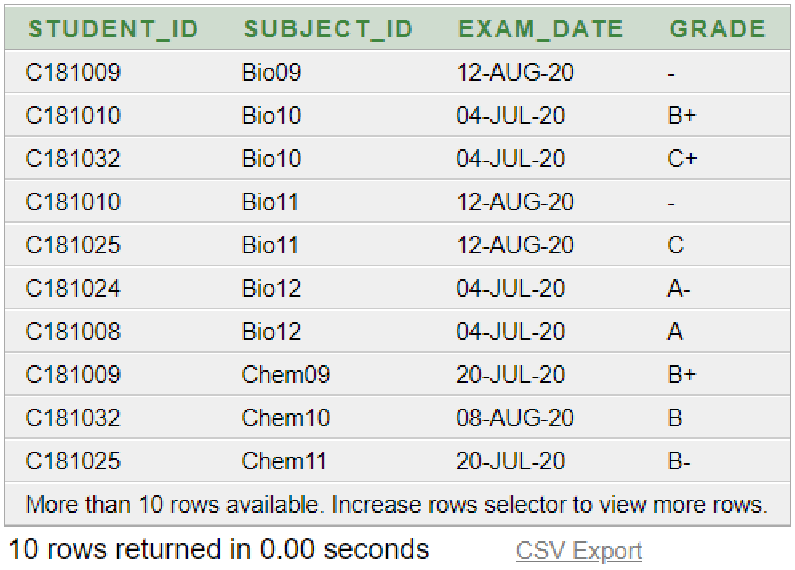
STUDENT_ID	EXAM_DATE
C181032	04-JUL-20
C181012	02-AUG-20
C181033	06-JUL-20
C181010	02-AUG-20
C181025	12-AUG-20
C181034	08-AUG-20
C181009	06-JUL-20
C181024	02-AUG-20
C181010	04-JUL-20
C181023	02-AUG-20

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds

v)Show the grade order by subject id:

```
select student_id,subject_id,exam_date,grade
from exams
order by subject_id
```



STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181009	Bio09	12-AUG-20	-
C181010	Bio10	04-JUL-20	B+
C181032	Bio10	04-JUL-20	C+
C181010	Bio11	12-AUG-20	-
C181025	Bio11	12-AUG-20	C
C181024	Bio12	04-JUL-20	A-
C181008	Bio12	04-JUL-20	A
C181009	Chem09	20-JUL-20	B+
C181032	Chem10	08-AUG-20	B
C181025	Chem11	20-JUL-20	B-
More than 10 rows available. Increase rows selector to view more rows.			

10 rows returned in 0.00 seconds CSV Export

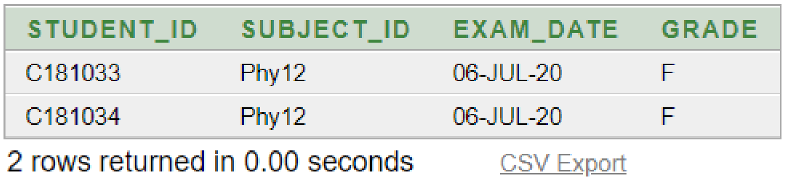
vi)Find the student information who failed and the grade is not null:

select *

from exams

where grade='F'

AND grade IS NOT NULL



STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181033	Phy12	06-JUL-20	F
C181034	Phy12	06-JUL-20	F

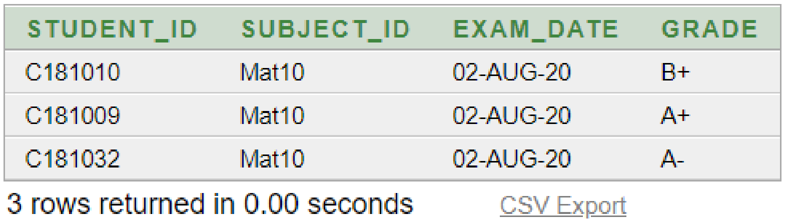
2 rows returned in 0.00 seconds CSV Export

viii) Find the exam details of subject is MAT10:

select *

from exams

where subject_id='Mat10'

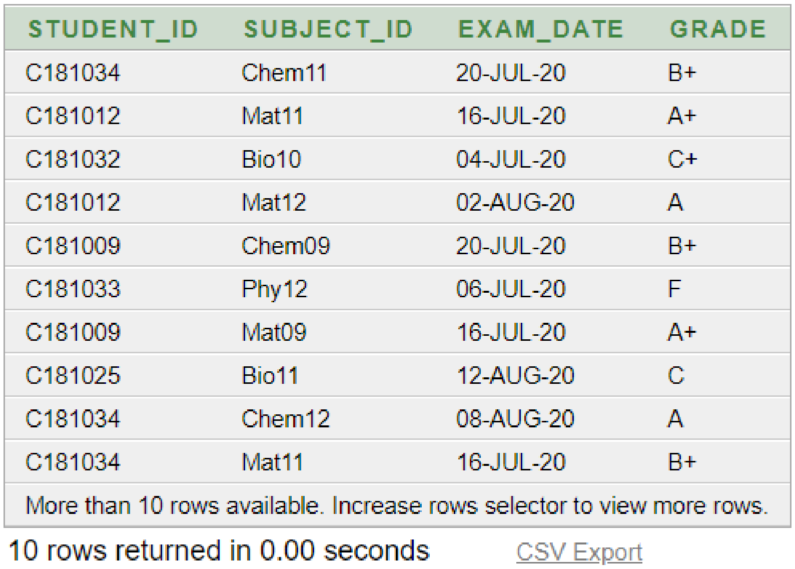


STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181010	Mat10	02-AUG-20	B+
C181009	Mat10	02-AUG-20	A+
C181032	Mat10	02-AUG-20	A-

3 rows returned in 0.00 seconds CSV Export

ix) Find the exam details of subject id which is not MAT10 and the grade is not null:

```
select *
from exams
where subject_id<>'Mat10'
and grade is not null
```



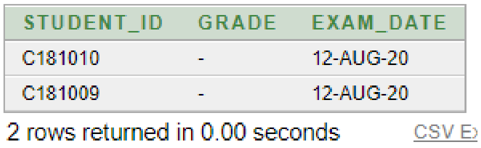
STUDENT_ID	SUBJECT_ID	EXAM_DATE	GRADE
C181034	Chem11	20-JUL-20	B+
C181012	Mat11	16-JUL-20	A+
C181032	Bio10	04-JUL-20	C+
C181012	Mat12	02-AUG-20	A
C181009	Chem09	20-JUL-20	B+
C181033	Phy12	06-JUL-20	F
C181009	Mat09	16-JUL-20	A+
C181025	Bio11	12-AUG-20	C
C181034	Chem12	08-AUG-20	A
C181034	Mat11	16-JUL-20	B+

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds

X) Find students who haven't got their grade yet and exam was before 16-Aug-20 :

```
select student_id,grade,exam_date
from exams
where grade IS NULL
and
exam_date<'16-Aug-20'
```



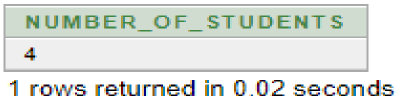
STUDENT_ID	GRADE	EXAM_DATE
C181010	-	12-AUG-20
C181009	-	12-AUG-20

2 rows returned in 0.00 seconds

Student Table

i) Find the number of students who are in class 12:

SELECT COUNT(student_id) AS number_of_students
from student
where class_id=12

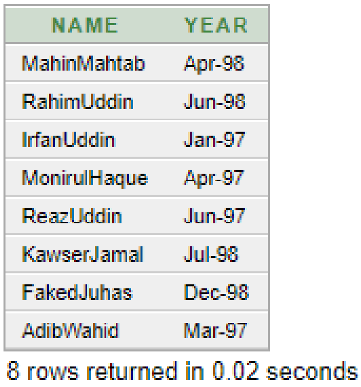


NUMBER_OF_STUDENTS
4

1 rows returned in 0.02 seconds

ii) show the names of students who were born after 01-Jan-1997:

SELECT CONCAT(first_name,last_name)Name,to_char(DOB,'Mon-YY')YEAR
from student
where DOB>'01-Jan-97'

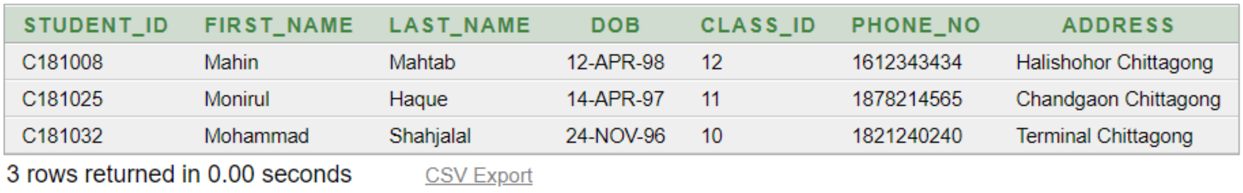


NAME	YEAR
MahinMahtab	Apr-98
RahimUddin	Jun-98
IrfanUddin	Jan-97
MonirulHaque	Apr-97
ReazUddin	Jun-97
KawserJamal	Jul-98
FakedJuhas	Dec-98
AdibWahid	Mar-97

8 rows returned in 0.02 seconds

iii)Find the student whose name begins with M:

select *
from student
where First_name like 'M%'

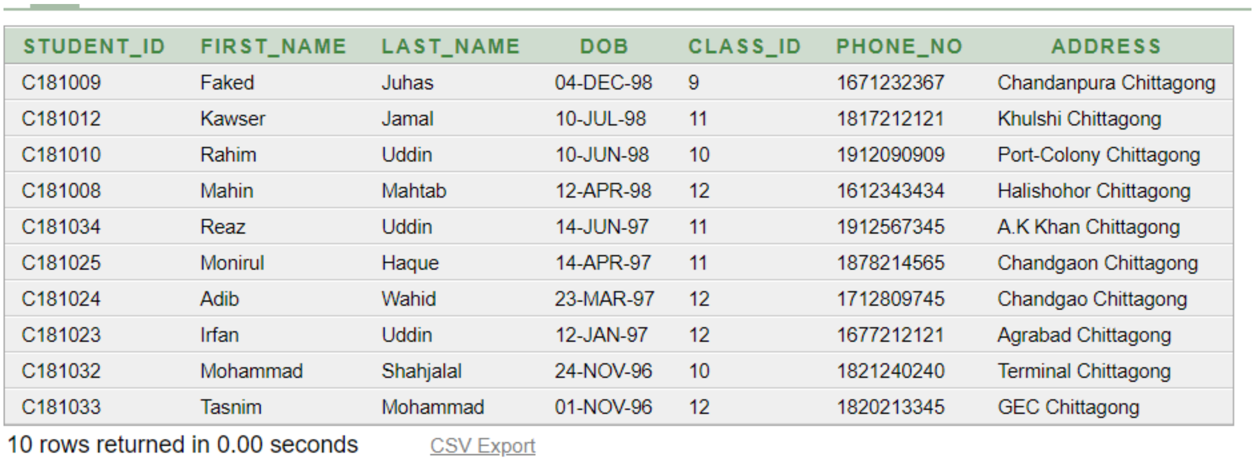


STUDENT_ID	FIRST_NAME	LAST_NAME	DOB	CLASS_ID	PHONE_NO	ADDRESS
C181008	Mahin	Mahtab	12-APR-98	12	1612343434	Halishohor Chittagong
C181025	Monirul	Haque	14-APR-97	11	1878214565	Chandgaon Chittagong
C181032	Mohammad	Shahjalal	24-NOV-96	10	1821240240	Terminal Chittagong

3 rows returned in 0.00 seconds

iv)Find the students details where DOB is in DESC oder:

```
select *
from student
order by DOB DESC
```

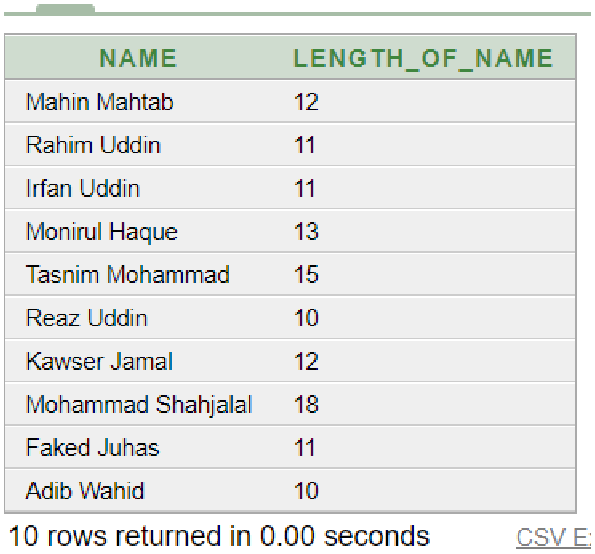


STUDENT_ID	FIRST_NAME	LAST_NAME	DOB	CLASS_ID	PHONE_NO	ADDRESS
C181009	Faked	Juhas	04-DEC-98	9	1671232367	Chandanpura Chittagong
C181012	Kawser	Jamal	10-JUL-98	11	1817212121	Khulshi Chittagong
C181010	Rahim	Uddin	10-JUN-98	10	1912090909	Port-Colony Chittagong
C181008	Mahin	Mahtab	12-APR-98	12	1612343434	Halishohor Chittagong
C181034	Reaz	Uddin	14-JUN-97	11	1912567345	A.K Khan Chittagong
C181025	Monirul	Haque	14-APR-97	11	1878214565	Chandgaon Chittagong
C181024	Adib	Wahid	23-MAR-97	12	1712809745	Chandgao Chittagong
C181023	Irfan	Uddin	12-JAN-97	12	1677212121	Agrabad Chittagong
C181032	Mohammad	Shahjalal	24-NOV-96	10	1821240240	Terminal Chittagong
C181033	Tasnim	Mohammad	01-NOV-96	12	1820213345	GEC Chittagong

10 rows returned in 0.00 seconds

v) Show the students names length:

```
select first_name||' '||last_name as Name,Length(first_name||'
'||last_name)Length_of_name
from student
```

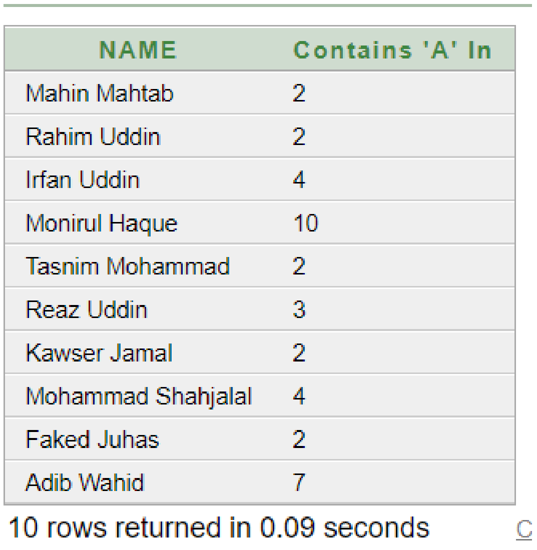


NAME	LENGTH_OF_NAME
Mahin Mahtab	12
Rahim Uddin	11
Irfan Uddin	11
Monirul Haque	13
Tasnim Mohammad	15
Reaz Uddin	10
Kawser Jamal	12
Mohammad Shahjalal	18
Faked Juhas	11
Adib Wahid	10

10 rows returned in 0.00 seconds

vi)Find the placement in a name where ‘a’ contains:

```
select first_name||' '||last_name as Name, Instr(first_name||'
'||last_name,'a')AS "Contains 'a' in"
from student
```

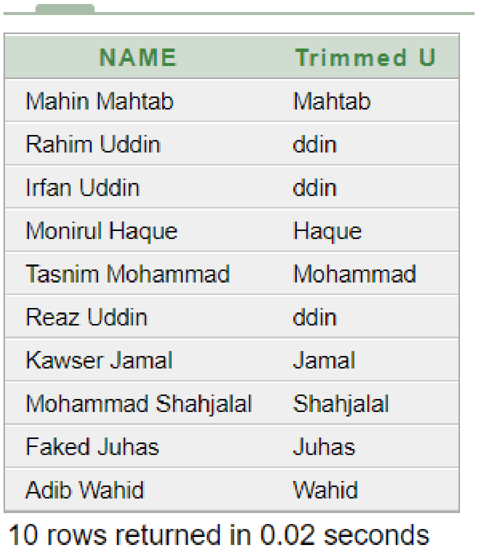


NAME	Contains 'A' In
Mahin Mahtab	2
Rahim Uddin	2
Irfan Uddin	4
Monirul Haque	10
Tasnim Mohammad	2
Reaz Uddin	3
Kawser Jamal	2
Mohammad Shahjalal	4
Faked Juhas	2
Adib Wahid	7

10 rows returned in 0.09 seconds

vii) Trim ‘U’ from the last name of students:

```
select first_name||' '||last_name as Name, TRIM('U' from last_name)AS
"Trimmed U"
from student
```



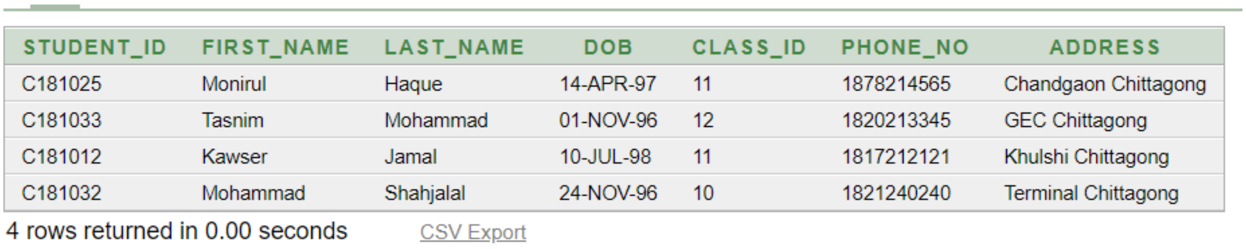
NAME	Trimmed U
Mahin Mahtab	Mahtab
Rahim Uddin	ddin
Irfan Uddin	ddin
Monirul Haque	Haque
Tasnim Mohammad	Mohammad
Reaz Uddin	ddin
Kawser Jamal	Jamal
Mohammad Shahjalal	Shahjalal
Faked Juhas	Juhas
Adib Wahid	Wahid

10 rows returned in 0.02 seconds

viii) Find all the phone number that begins with 18:

```
select *
```

```
from student
where phone_no like '18%'
```

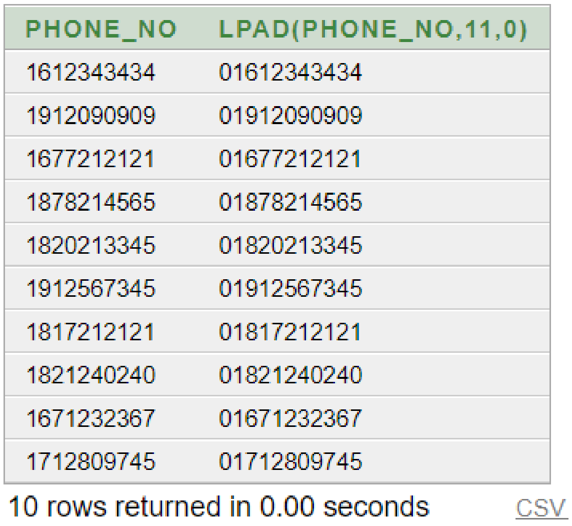


STUDENT_ID	FIRST_NAME	LAST_NAME	DOB	CLASS_ID	PHONE_NO	ADDRESS
C181025	Monirul	Haque	14-APR-97	11	1878214565	Chandgaon Chittagong
C181033	Tasnim	Mohammad	01-NOV-96	12	1820213345	GEC Chittagong
C181012	Kawser	Jamal	10-JUL-98	11	1817212121	Khulshi Chittagong
C181032	Mohammad	Shahjalal	24-NOV-96	10	1821240240	Terminal Chittagong

4 rows returned in 0.00 seconds CSV Export

ix)show all the numbers as it starts with 0:

```
select phone_no,LPAD(phone_no,11,0)
from student
```

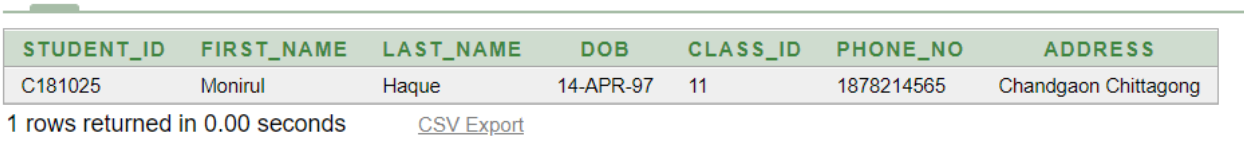


PHONE_NO	LPAD(PHONE_NO,11,0)
1612343434	01612343434
1912090909	01912090909
1677212121	01677212121
1878214565	01878214565
1820213345	01820213345
1912567345	01912567345
1817212121	01817212121
1821240240	01821240240
1671232367	01671232367
1712809745	01712809745

10 rows returned in 0.00 seconds CSV

X) Find the student who are in chandgao and in class 11:

```
select *
from student
where address like 'Chandgao%'
and class_id=11
```



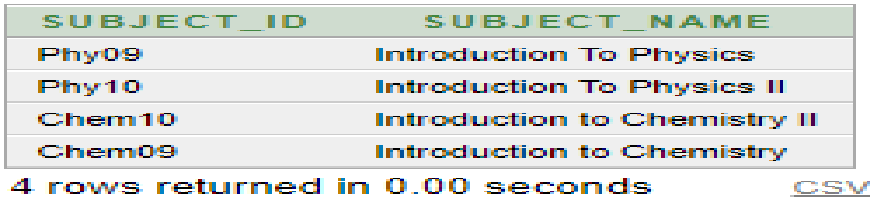
STUDENT_ID	FIRST_NAME	LAST_NAME	DOB	CLASS_ID	PHONE_NO	ADDRESS
C181025	Monirul	Haque	14-APR-97	11	1878214565	Chandgaon Chittagong

1 rows returned in 0.00 seconds CSV Export

Subject Table

i) Find the subject name which starts with the word "Introduction":

```
select subject_id,subject_name
from subject
where subject_name like 'Introduction%'
```

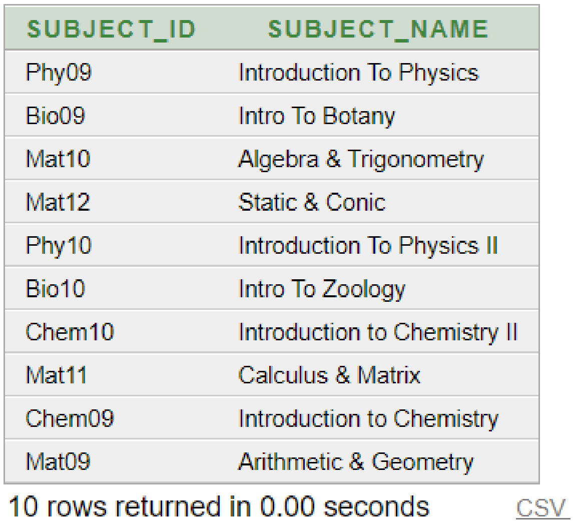


SUBJECT_ID	SUBJECT_NAME
Phy09	Introduction To Physics
Phy10	Introduction To Physics II
Chem10	Introduction to Chemistry II
Chem09	Introduction to Chemistry

4 rows returned in 0.00 seconds CSV

ii) Find the subject name that doesn’t start with “intermediate”:

```
select *
from subject
where INITCAP(subject_name) NOT like 'Intermediate%'
```

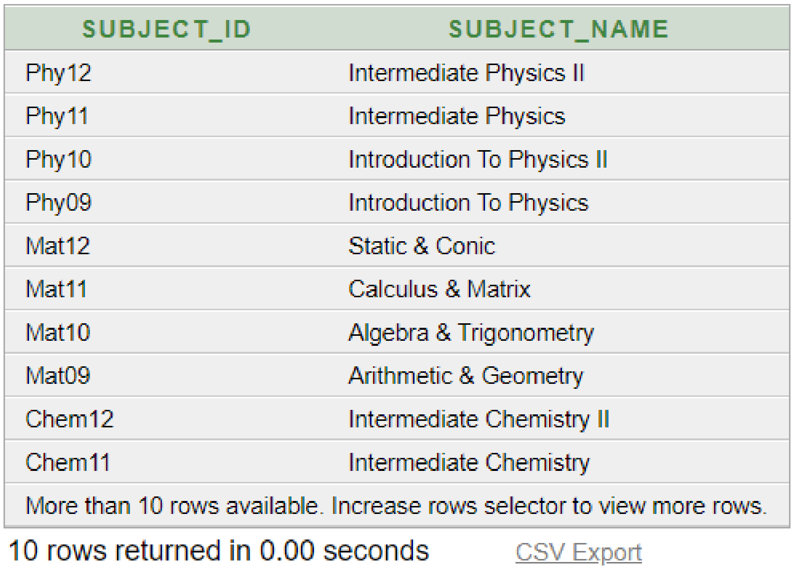


SUBJECT_ID	SUBJECT_NAME
Phy09	Introduction To Physics
Bio09	Intro To Botany
Mat10	Algebra & Trigonometry
Mat12	Static & Conic
Phy10	Introduction To Physics II
Bio10	Intro To Zoology
Chem10	Introduction to Chemistry II
Mat11	Calculus & Matrix
Chem09	Introduction to Chemistry
Mat09	Arithmetic & Geometry

10 rows returned in 0.00 seconds CSV

iii)Show the subjects in descending order in a group:

```
select *
from subject
order by subject_id DESC
```

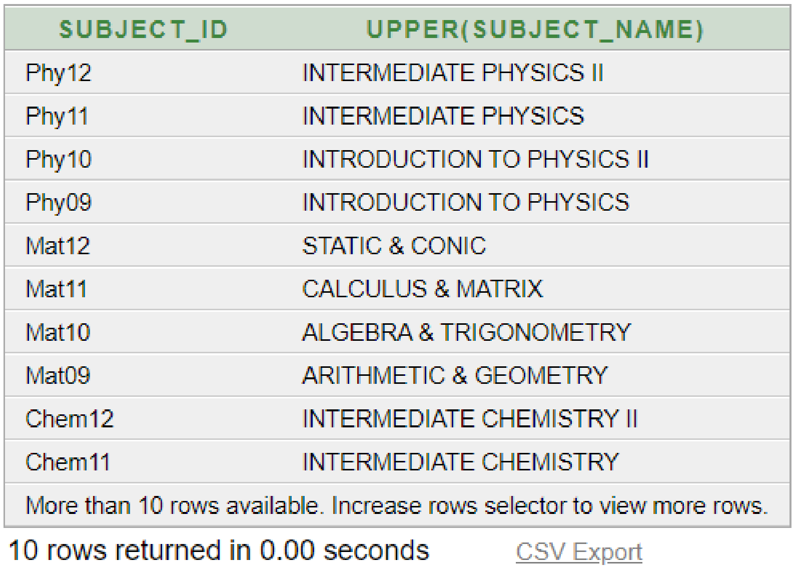


SUBJECT_ID	SUBJECT_NAME
Phy12	Intermediate Physics II
Phy11	Intermediate Physics
Phy10	Introduction To Physics II
Phy09	Introduction To Physics
Mat12	Static & Conic
Mat11	Calculus & Matrix
Mat10	Algebra & Trigonometry
Mat09	Arithmetic & Geometry
Chem12	Intermediate Chemistry II
Chem11	Intermediate Chemistry
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds

iv)Show the subject name in capital form:

```
select subject_id,Upper(Subject_name)
from subject
order by subject_id DESC
```



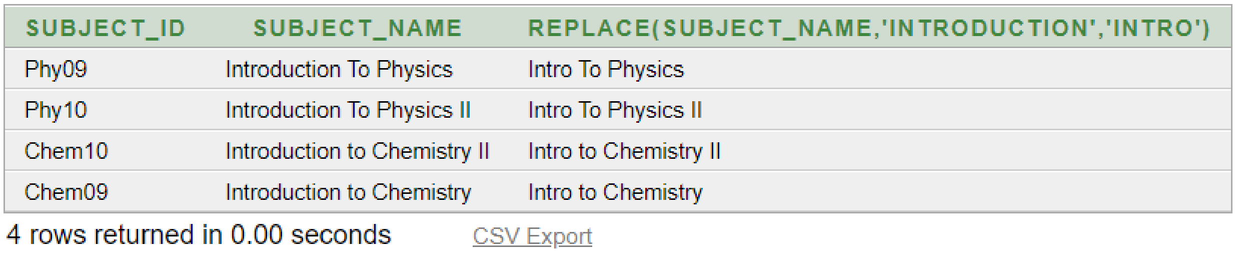
SUBJECT_ID	UPPER(SUBJECT_NAME)
Phy12	INTERMEDIATE PHYSICS II
Phy11	INTERMEDIATE PHYSICS
Phy10	INTRODUCTION TO PHYSICS II
Phy09	INTRODUCTION TO PHYSICS
Mat12	STATIC & CONIC
Mat11	CALCULUS & MATRIX
Mat10	ALGEBRA & TRIGONOMETRY
Mat09	ARITHMETIC & GEOMETRY
Chem12	INTERMEDIATE CHEMISTRY II
Chem11	INTERMEDIATE CHEMISTRY
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds

v)Replace all the subject name that starts with ‘Introduction’ to ‘Intro’:

```
select subject_id,subject_name,Replace(Subject_name,'Introduction','Intro')
from subject
```

where subject_name like 'Introduction%'

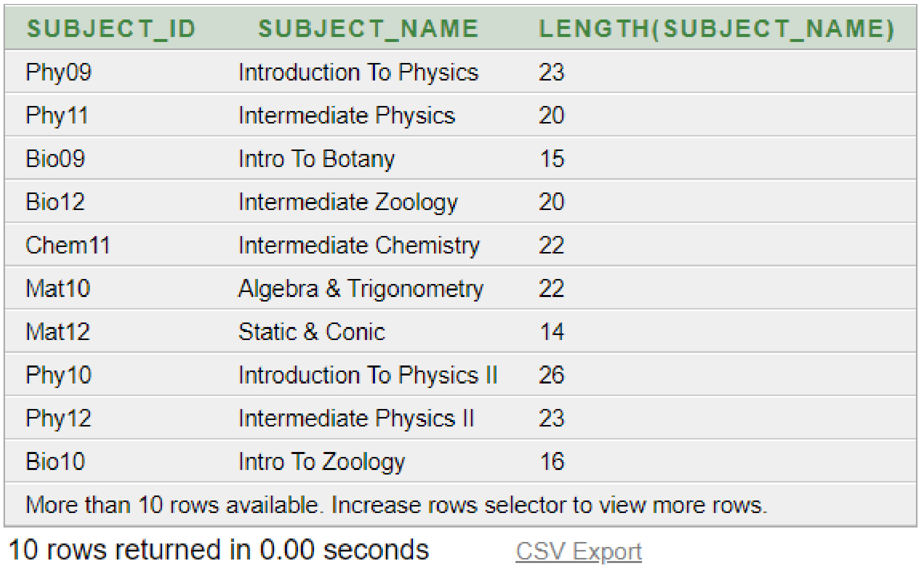


SUBJECT_ID	SUBJECT_NAME	REPLACE(SUBJECT_NAME,'INTRODUCTION','INTRO')
Phy09	Introduction To Physics	Intro To Physics
Phy10	Introduction To Physics II	Intro To Physics II
Chem10	Introduction to Chemistry II	Intro to Chemistry II
Chem09	Introduction to Chemistry	Intro to Chemistry

4 rows returned in 0.00 seconds CSV Export

vi)Find the length of subjects name:

select subject_id,subject_name,length(Subject_name)
from subject



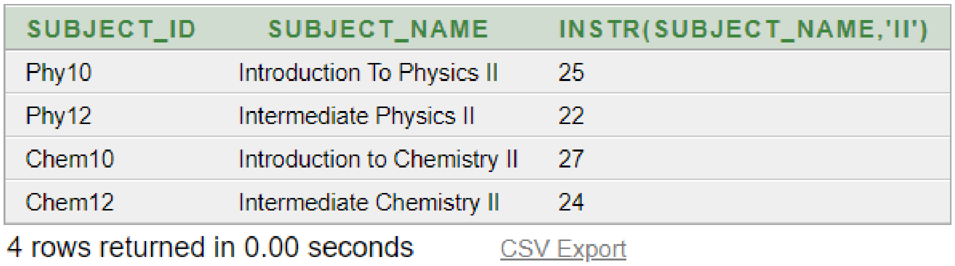
SUBJECT_ID	SUBJECT_NAME	LENGTH(SUBJECT_NAME)
Phy09	Introduction To Physics	23
Phy11	Intermediate Physics	20
Bio09	Intro To Botany	15
Bio12	Intermediate Zoology	20
Chem11	Intermediate Chemistry	22
Mat10	Algebra & Trigonometry	22
Mat12	Static & Conic	14
Phy10	Introduction To Physics II	26
Phy12	Intermediate Physics II	23
Bio10	Intro To Zoology	16

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

vii)Find the placement of 'II' in a subject name:

select subject_id,subject_name,Instr(Subject_name,'II')
from subject
where Instr(Subject_name,'II')<>0

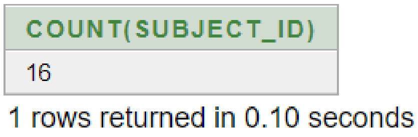


SUBJECT_ID	SUBJECT_NAME	INSTR(SUBJECT_NAME,'II')
Phy10	Introduction To Physics II	25
Phy12	Intermediate Physics II	22
Chem10	Introduction to Chemistry II	27
Chem12	Intermediate Chemistry II	24

4 rows returned in 0.00 seconds CSV Export

viii) find how many subject is there:

```
select count(subject_id)
from subject
```

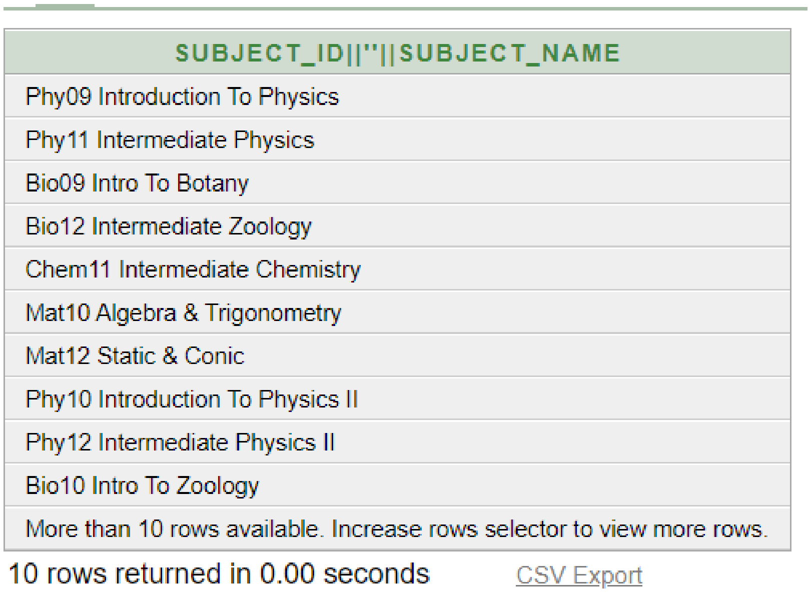


COUNT(SUBJECT_ID)
16

1 rows returned in 0.10 seconds

ix) Show the subject id and subject name in a single column:

```
select subject_id||' '||subject_name
from subject
```

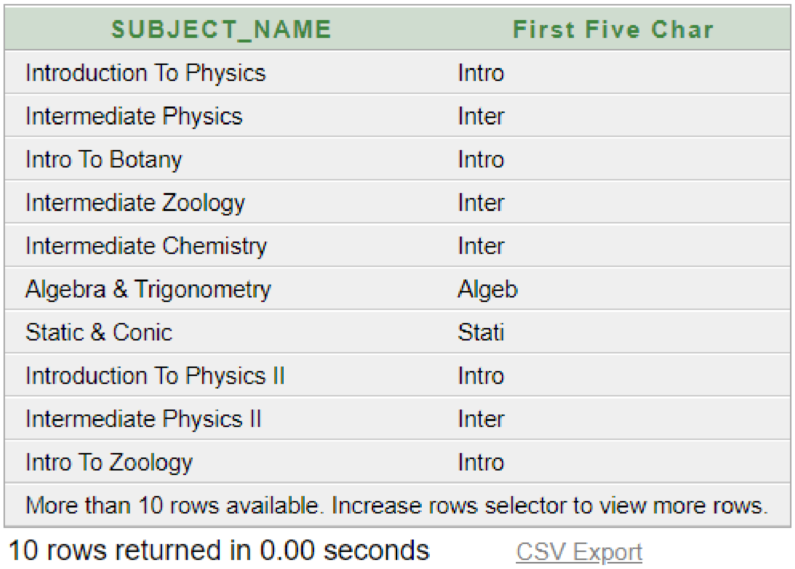


SUBJECT_ID||''||SUBJECT_NAME
Phy09 Introduction To Physics
Phy11 Intermediate Physics
Bio09 Intro To Botany
Bio12 Intermediate Zoology
Chem11 Intermediate Chemistry
Mat10 Algebra & Trigonometry
Mat12 Static & Conic
Phy10 Introduction To Physics II
Phy12 Intermediate Physics II
Bio10 Intro To Zoology
More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

X)Find the first five character of subject name:

```
select subject_name,substr(subject_name,1,5)As "First Five char"
from subject
```



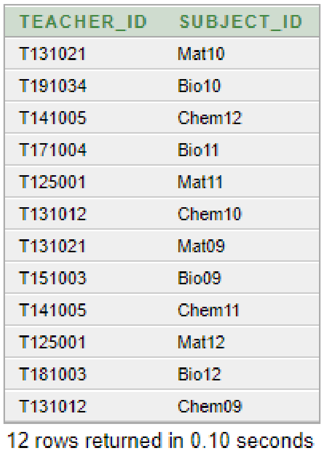
SUBJECT_NAME	First Five Char
Introduction To Physics	Intro
Intermediate Physics	Inter
Intro To Botany	Intro
Intermediate Zoology	Inter
Intermediate Chemistry	Inter
Algebra & Trigonometry	Algeb
Static & Conic	Stati
Introduction To Physics II	Intro
Intermediate Physics II	Inter
Intro To Zoology	Intro
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds CSV Export

TEACHES TABLE

i) Find the teachers who doesn't teach physics:

```
select teacher_id,subject_id
from teaches
where subject_id not like 'Phy%'
```

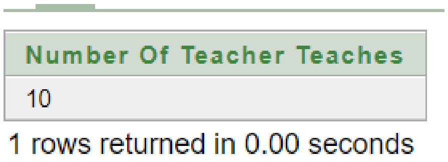


TEACHER_ID	SUBJECT_ID
T131021	Mat10
T191034	Bio10
T141005	Chem12
T171004	Bio11
T125001	Mat11
T131012	Chem10
T131021	Mat09
T151003	Bio09
T141005	Chem11
T125001	Mat12
T181003	Bio12
T131012	Chem09

12 rows returned in 0.10 seconds

ii)Find the number of teacher that teaches:

```
select count(distinct(teacher_id))AS "Number of teacher Teaches"
from teaches
```

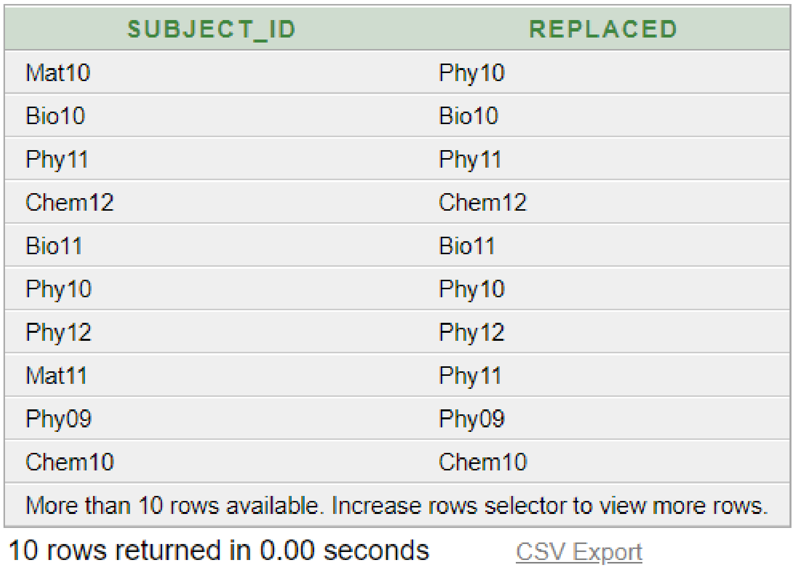


Number Of Teacher Teaches
10

1 rows returned in 0.00 seconds

iii)Replace the subject id Mat with Phy:

```
select subject_id,replace(subject_id,'Mat','Phy')Replaced
from teaches
```

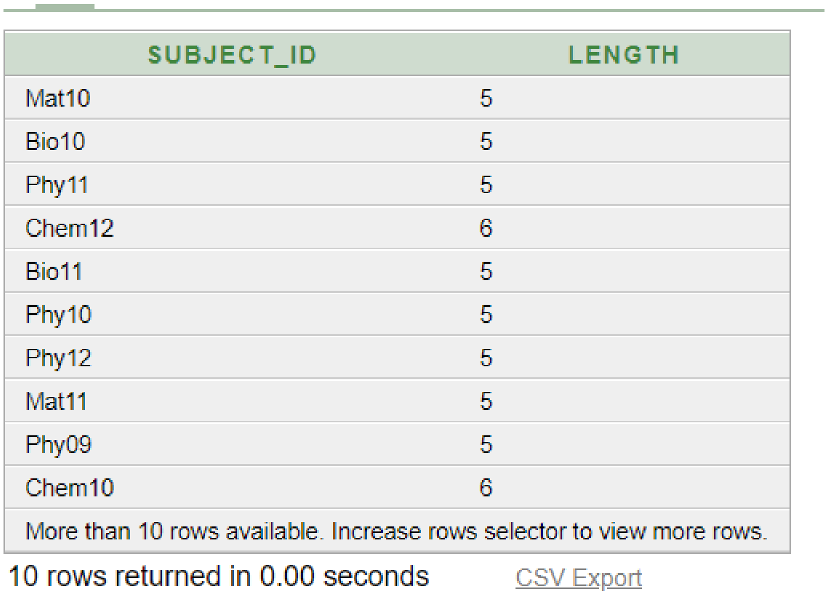


SUBJECT_ID	REPLACED
Mat10	Phy10
Bio10	Bio10
Phy11	Phy11
Chem12	Chem12
Bio11	Bio11
Phy10	Phy10
Phy12	Phy12
Mat11	Phy11
Phy09	Phy09
Chem10	Chem10
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds CSV Export

iv) Find the length of subject id:

```
select subject_id,length(subject_id)length
from teaches
```

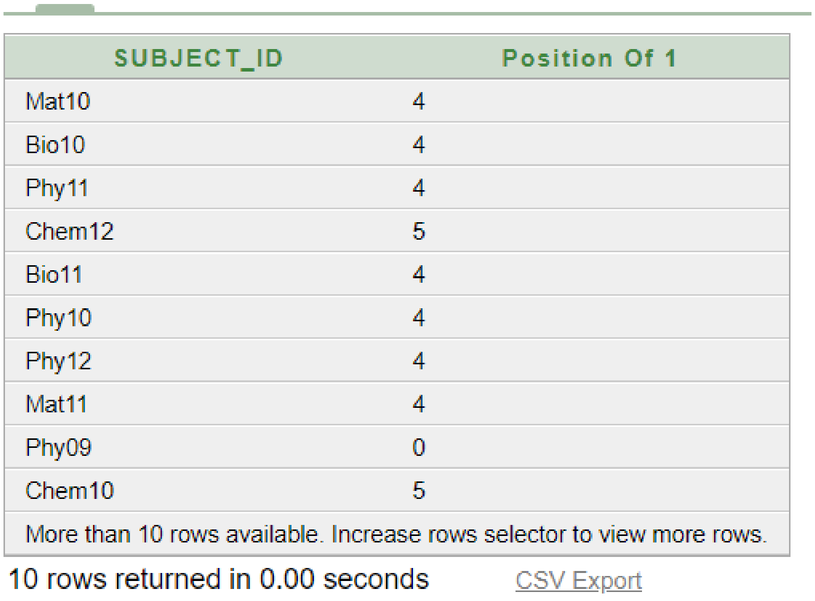


SUBJECT_ID	LENGTH
Mat10	5
Bio10	5
Phy11	5
Chem12	6
Bio11	5
Phy10	5
Phy12	5
Mat11	5
Phy09	5
Chem10	6
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds

v)find the position of 1 in subject id:

select subject_id,instr(subject_id,'1')as "Position of 1" from teaches

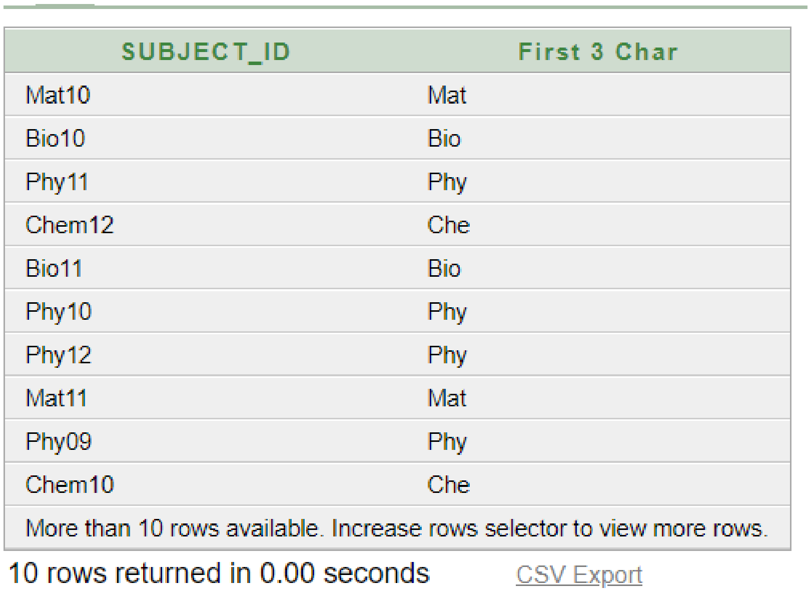


SUBJECT_ID	Position Of 1
Mat10	4
Bio10	4
Phy11	4
Chem12	5
Bio11	4
Phy10	4
Phy12	4
Mat11	4
Phy09	0
Chem10	5
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds

vi)Show the First 3 char of subject id:

select subject_id,substr(subject_id,1,3)as "first 3 char" from teaches



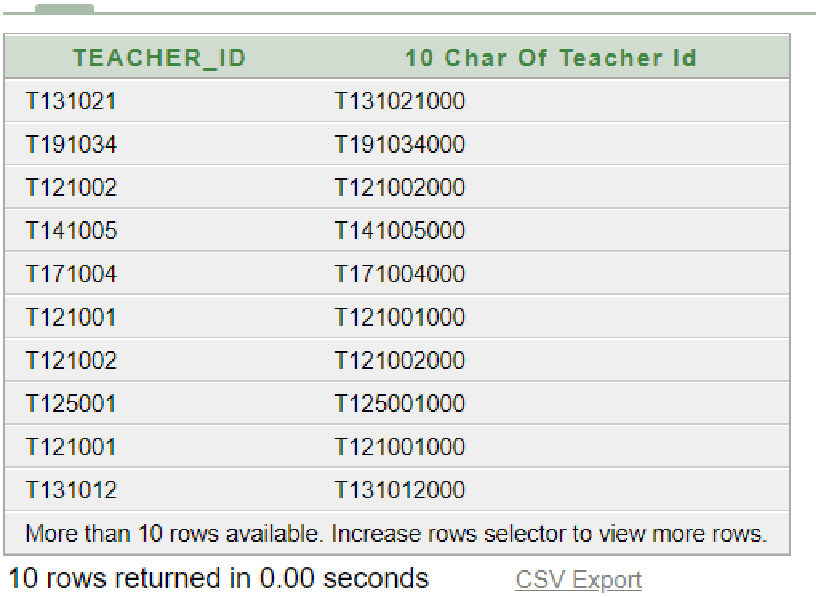
SUBJECT_ID	First 3 Char
Mat10	Mat
Bio10	Bio
Phy11	Phy
Chem12	Che
Bio11	Bio
Phy10	Phy
Phy12	Phy
Mat11	Mat
Phy09	Phy
Chem10	Che

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

vii)Show the teacher id 10 characters long and ends with 0’s:

```
select teacher_id,RPAD(teacher_id,10,0) AS "10 Char of teacher id"
from teaches
```



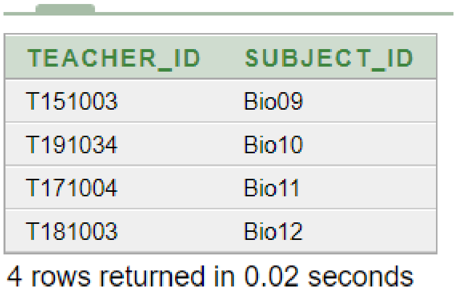
TEACHER_ID	10 Char Of Teacher Id
T131021	T131021000
T191034	T191034000
T121002	T121002000
T141005	T141005000
T171004	T171004000
T121001	T121001000
T121002	T121002000
T125001	T125001000
T121001	T121001000
T131012	T131012000

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

viii) find the teacher who teaches the subject that has subject id “Bio”:

```
select *
from teaches
where subject_id like 'Bio%'
order by subject_id
```

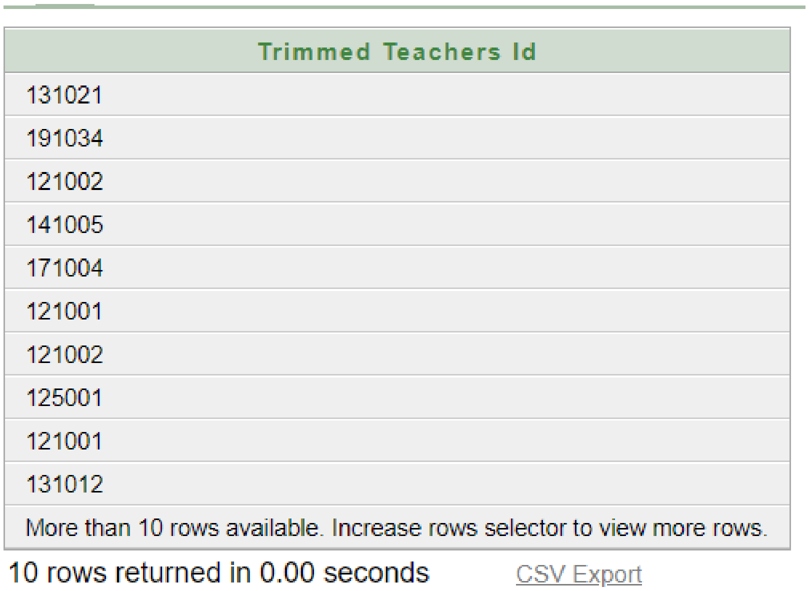


TEACHER_ID	SUBJECT_ID
T151003	Bio09
T191034	Bio10
T171004	Bio11
T181003	Bio12

4 rows returned in 0.02 seconds

ix) remove the first character of teacher’s id:

```
select TRIM(substr(teacher_id,1,1) from teacher_id)As "Trimmed Teachers id"
from teaches
```



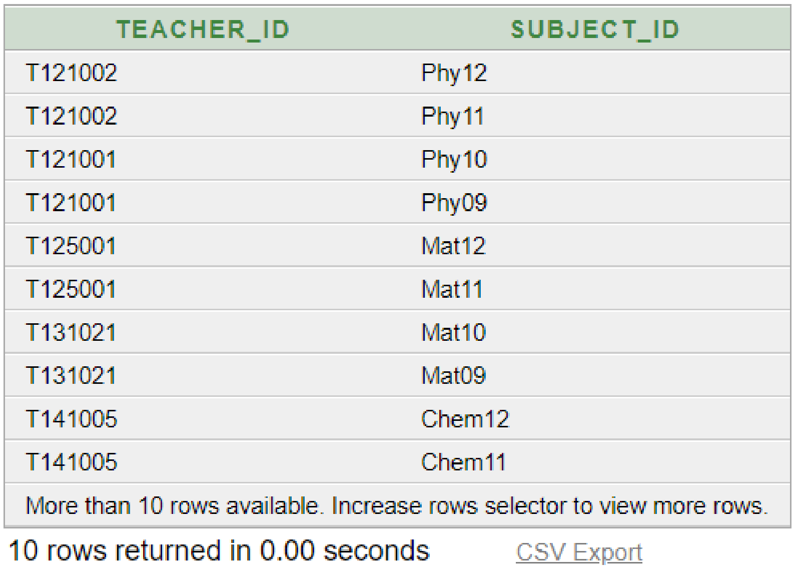
Trimmed Teachers Id
131021
191034
121002
141005
171004
121001
121002
125001
121001
131012
More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

X)Show the subjects that teacher teaches in Descending order:

```
select *
from teaches
```

order by subject_id DESC



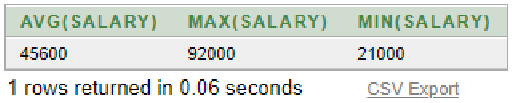
TEACHER_ID	SUBJECT_ID
T121002	Phy12
T121002	Phy11
T121001	Phy10
T121001	Phy09
T125001	Mat12
T125001	Mat11
T131021	Mat10
T131021	Mat09
T141005	Chem12
T141005	Chem11
More than 10 rows available. Increase rows selector to view more rows.	

10 rows returned in 0.00 seconds CSV Export

Teacher table

i) Find the average,minimum and max salary of teachers:

select AVG(SALARY),MAX(SALARY),MIN(SALARY)
from teacher

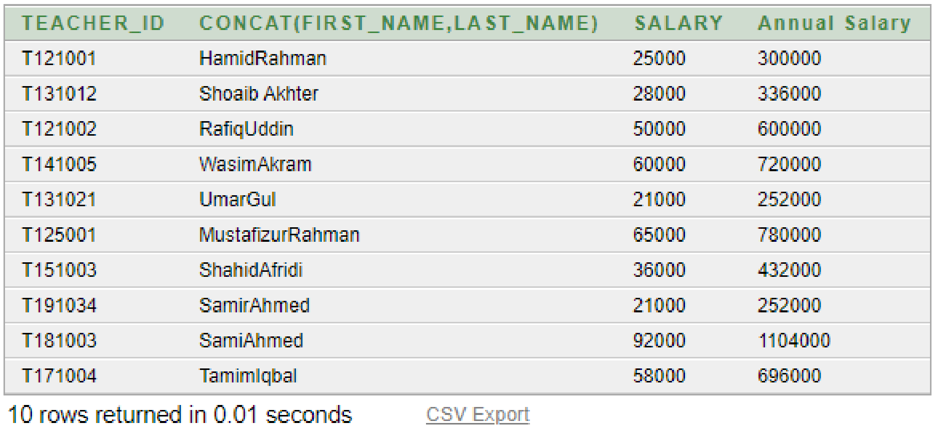


AVG(SALARY)	MAX(SALARY)	MIN(SALARY)
45600	92000	21000

1 rows returned in 0.06 seconds CSV Export

ii) Find the annual salary of teachers:

```
select teacher_id,CONCAT(first_name,last_name),salary,salary*12 "Annual
Salary"
from teacher
```

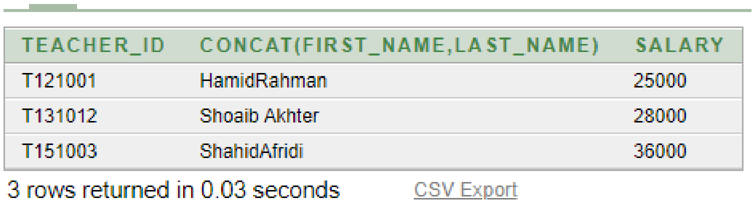


TEACHER_ID	CONCAT(FIRST_NAME,LAST_NAME)	SALARY	Annual Salary
T121001	HamidRahman	25000	300000
T131012	Shoaib Akhter	28000	336000
T121002	RafiqUddin	50000	600000
T141005	WasimAkram	60000	720000
T131021	UmarGul	21000	252000
T125001	MustafizurRahman	65000	780000
T151003	ShahidAfridi	36000	432000
T191034	SamirAhmed	21000	252000
T181003	SamiAhmed	92000	1104000
T171004	TamimIqbal	58000	696000

10 rows returned in 0.01 seconds   CSV Export

iii) Find the salaries of teacher which is between 25000 and 60000 and has designation Junior Teacher:

```
select teacher_id,CONCAT(first_name,last_name),salary
from teacher
where salary between 25000 and 60000
and
designation like 'Jun%'
```

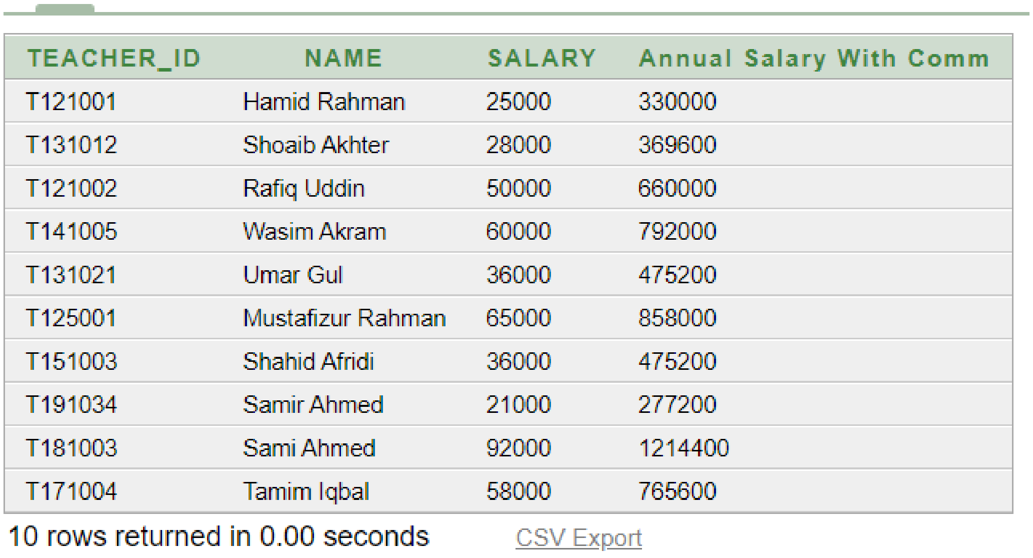


TEACHER_ID	CONCAT(FIRST_NAME,LAST_NAME)	SALARY
T121001	HamidRahman	25000
T131012	Shoaib Akhter	28000
T151003	ShahidAfridi	36000

3 rows returned in 0.03 seconds   CSV Export

iv)Show their names in a single column with their annual salary and commission:

```
select teacher_id,CONCAT(CONCAT(first_name,'
'),last_name)NAME,salary,salary*12*1.1 "Annual Salary with comm"
from teacher
```

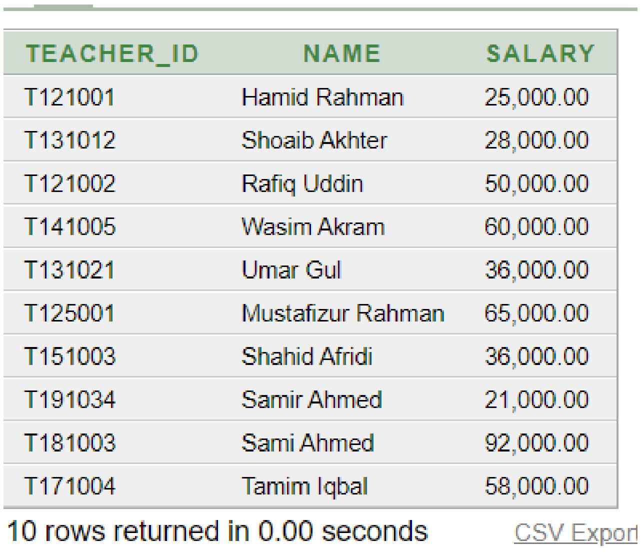


TEACHER_ID	NAME	SALARY	Annual Salary With Comm
T121001	Hamid Rahman	25000	330000
T131012	Shoaib Akhter	28000	369600
T121002	Rafiq Uddin	50000	660000
T141005	Wasim Akram	60000	792000
T131021	Umar Gul	36000	475200
T125001	Mustafizur Rahman	65000	858000
T151003	Shahid Afridi	36000	475200
T191034	Samir Ahmed	21000	277200
T181003	Sami Ahmed	92000	1214400
T171004	Tamim Iqbal	58000	765600

10 rows returned in 0.00 seconds CSV Export

v)Show the salary like 50,000.00:

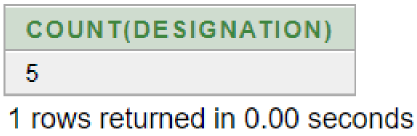
select teacher_id,CONCAT(CONCAT(first_name,'
'),last_name)NAME,To_char(salary,'99,999.00')Salary
from teacher



TEACHER_ID	NAME	SALARY
T121001	Hamid Rahman	25,000.00
T131012	Shoaib Akhter	28,000.00
T121002	Rafiq Uddin	50,000.00
T141005	Wasim Akram	60,000.00
T131021	Umar Gul	36,000.00
T125001	Mustafizur Rahman	65,000.00
T151003	Shahid Afridi	36,000.00
T191034	Samir Ahmed	21,000.00
T181003	Sami Ahmed	92,000.00
T171004	Tamim Iqbal	58,000.00

10 rows returned in 0.00 seconds CSV Export

vi)Show how many Junior Teacher is there:
select count(designation)
from teacher
where designation like 'Junior_Teacher'

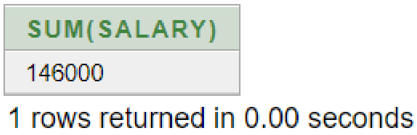


COUNT(DESIGNATION)
5

1 rows returned in 0.00 seconds

vii) Find the Sum of salary of Junior Teacher:

```
select sum(salary)
from teacher
where designation like 'Junior_Teacher'
```

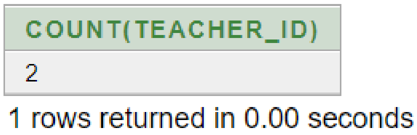


SUM(SALARY)
146000

1 rows returned in 0.00 seconds

viii)Find how many teacher earns more than 60000:

```
select count(teacher_id)
from teacher
where salary>60000
```

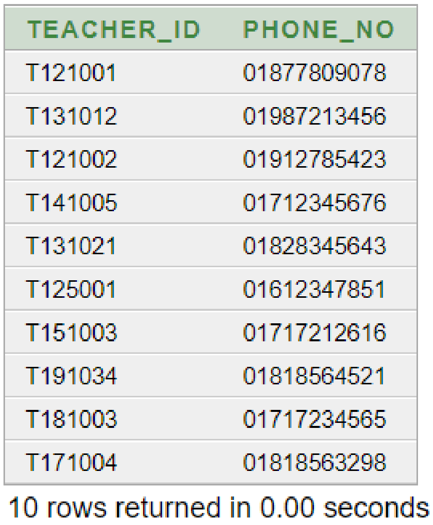


COUNT(TEACHER_ID)
2

1 rows returned in 0.00 seconds

ix) Show the teachers phone number starting with 0:

```
select teacher_id,LPAD(phone_no,11,0)Phone_no
from teacher
```

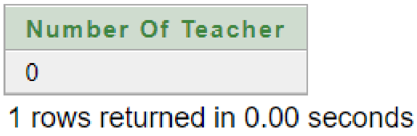


TEACHER_ID	PHONE_NO
T121001	01877809078
T131012	01987213456
T121002	01912785423
T141005	01712345676
T131021	01828345643
T125001	01612347851
T151003	01717212616
T191034	01818564521
T181003	01717234565
T171004	01818563298

10 rows returned in 0.00 seconds

x)Find the number of teacher who doesn't have any designation:

```
select count(teacher_id)as "Number of Teacher"
from teacher
where designation is Null
```



Number Of Teacher
0

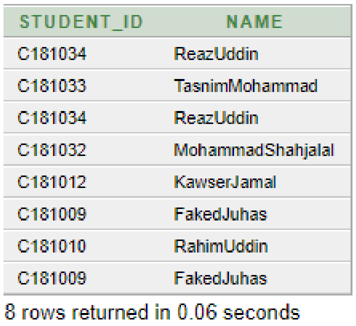
1 rows returned in 0.00 seconds

2. Five ways from multiple table:

i) Find the Students who didn't get their results yet also who got F in any subject:

```
SELECT student_id,CONCAT(frist_name,last_name)Name
```

```
from exams natural join student
where Grade IS NULL Or Grade='F'
```

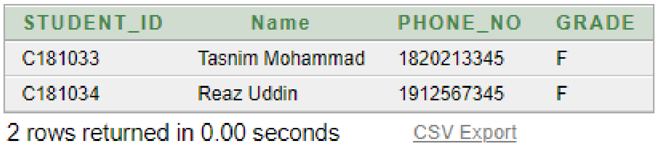


STUDENT_ID	NAME
C181034	ReazUddin
C181033	TasnimMohammad
C181034	ReazUddin
C181032	MohammadShahjalal
C181012	KawserJamal
C181009	FakedJuhas
C181010	RahimUddin
C181009	FakedJuhas

8 rows returned in 0.06 seconds

ii) Find the phone number of students who failed in any subject:

```
select student_id,frist_name ||' '||last_name AS "Name",phone_no,grade
from student natural join exams
where grade='F'
```

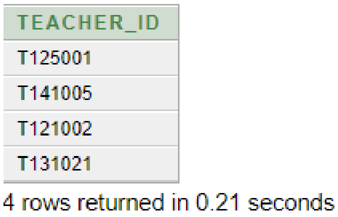


STUDENT_ID	Name	PHONE_NO	GRADE
C181033	Tasnim Mohammad	1820213345	F
C181034	Reaz Uddin	1912567345	F

2 rows returned in 0.00 seconds

iii) Find the teacher’s id whose student got A+:

```
select Distinct(teacher_id)
from teaches natural join exams
where grade='A+'
```



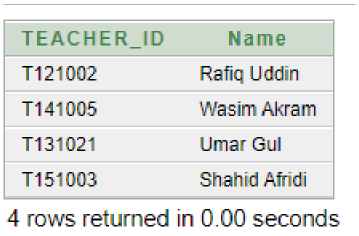
TEACHER_ID
T125001
T141005
T121002
T131021

4 rows returned in 0.21 seconds

iv) Find the teachers name who teach Phy11 , Mat10, Bio09, Chem11:

```
select teacher_id,first_name||' '||last_name As "Name"
```

```
from teacher natural join teaches
where subject_id IN('Phy11','Mat10','Bio09','Chem11')
```

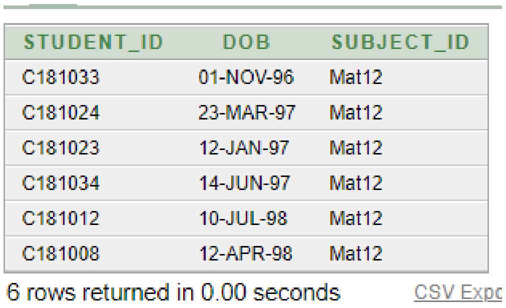


TEACHER_ID	Name
T121002	Rafiq Uddin
T141005	Wasim Akram
T131021	Umar Gul
T151003	Shahid Afridi

4 rows returned in 0.00 seconds

v) Find the DOB of students who enrolled Math 12:

```
Select student_id,DOB,subject_id
from student natural join enroll
where subject_id='Mat12'
```



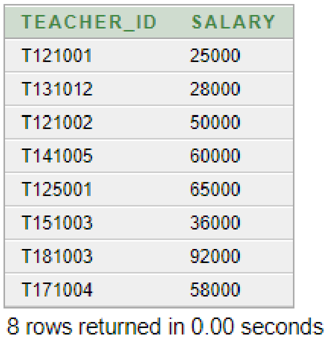
STUDENT_ID	DOB	SUBJECT_ID
C181033	01-NOV-96	Mat12
C181024	23-MAR-97	Mat12
C181023	12-JAN-97	Mat12
C181034	14-JUN-97	Mat12
C181012	10-JUL-98	Mat12
C181008	12-APR-98	Mat12

6 rows returned in 0.00 seconds CSV Expo

3. Any type of sub-query:

i)Find the teacher’s salary which is greater than Gul’s salary:

```
select teacher_id,salary
from teacher
where salary>(select salary
          from teacher
          where last_name='Gul')
```

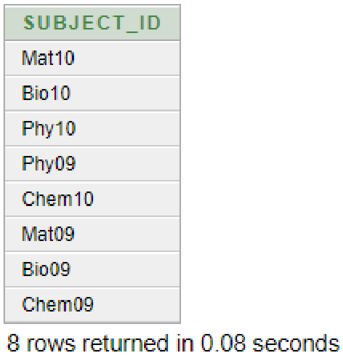


TEACHER_ID	SALARY
T121001	25000
T131012	28000
T121002	50000
T141005	60000
T125001	65000
T151003	36000
T181003	92000
T171004	58000

8 rows returned in 0.00 seconds

ii) Find the subjects which are taught by junior Teacher:

```
select subject_id
from teaches
where teacher_id IN (select teacher_id
            from teacher
            where designation like 'Junior%')
```

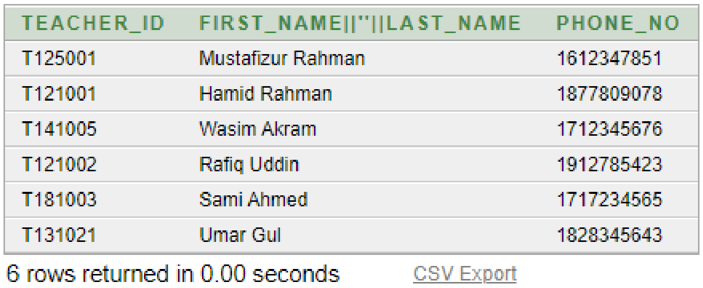


SUBJECT_ID
Mat10
Bio10
Phy10
Phy09
Chem10
Mat09
Bio09
Chem09

8 rows returned in 0.08 seconds

iii) Find the teachers and their phone number whose student got A,A- or A+ :

```
select teacher_id,first_name||' '||last_name,phone_no
from teacher
where teacher_id IN( select teacher_id
from teaches
where subject_id IN(select subject_id
                   from exams
                  where grade IN('A','A+','A-')
                  )
    )
```

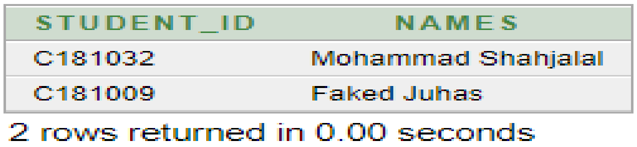


TEACHER_ID	FIRST_NAME||''||LAST_NAME	PHONE_NO
T125001	Mustafizur Rahman	1612347851
T121001	Hamid Rahman	1877809078
T141005	Wasim Akram	1712345676
T121002	Rafiq Uddin	1912785423
T181003	Sami Ahmed	1717234565
T131021	Umar Gul	1828345643

6 rows returned in 0.00 seconds   CSV Export

iv) Find the students who have enrolled subjects under Hamid Sir:

```
select distinct(student_id),frist_name||' '||last_name As Names
from student natural join enroll
where subject_id IN (select subject_id
                from teacher natural join teaches
                   where first_name like 'Hamid')
```

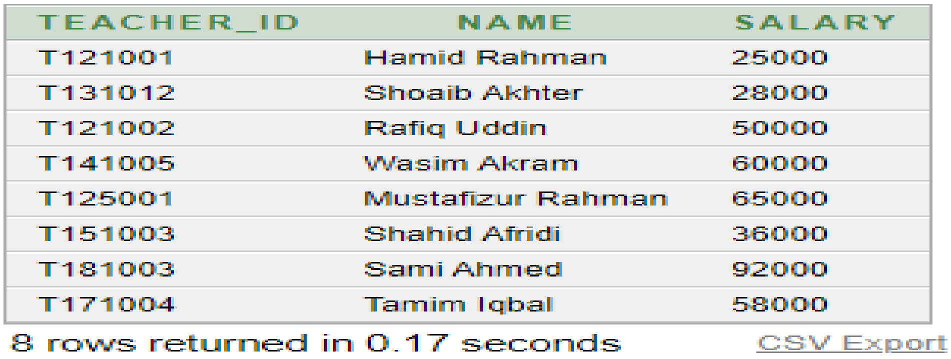


STUDENT_ID	NAMES
C181032	Mohammad Shahjalal
C181009	Faked Juhas

2 rows returned in 0.00 seconds

v) Find the teachers salary who earn more than the teacher who teaches the subject “Algebra & Trigonometry”

```
select teacher_id,first_name||' '||last_name as Name, Salary
from teacher
where salary>(select salary
            from teacher
            where teacher_id=( select teacher_id
                            from teaches natural join subject
                            where subject_name='Algebra & Trigonometry'
                           )
             )
```



TEACHER_ID	NAME	SALARY
T121001	Hamid Rahman	25000
T131012	Shoaib Akhter	28000
T121002	Rafiq Uddin	50000
T141005	Wasim Akram	60000
T125001	Mustafizur Rahman	65000
T151003	Shahid Afridi	36000
T181003	Sami Ahmed	92000
T171004	Tamim Iqbal	58000

8 rows returned in 0.17 seconds

4.Any Query:

PL/SQL:

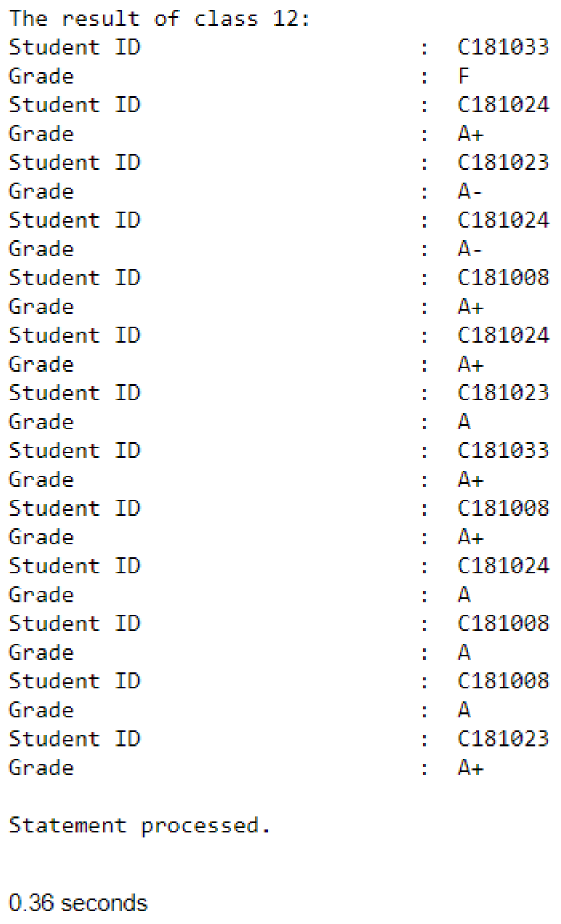
i)Show the result of Class 12 :

```
DECLARE
 std_record exams%ROWTYPE;
 CURSOR std IS
 SELECT *
 FROM exams
 where student_id IN(select student_id
                     from student
                     where class_id='12');

BEGIN
 open std;
 dbms_output.put_line('The result of class 12: ');
 LOOP
   FETCH std INTO std_record;
   exit WHEN std%NOTFOUND;

   dbms_output.put_line('Student ID                    :  '|| std_record.student_id);
   dbms_output.put_line('Grade                            :  '|| std_record.grade);
 END LOOP;
CLOSE std;


END;
```



```
The result of class 12:
Student ID                     :  C181033
Grade                          :  F
Student ID                     :  C181024
Grade                          :  A+
Student ID                     :  C181023
Grade                          :  A-
Student ID                     :  C181024
Grade                          :  A-
Student ID                     :  C181008
Grade                          :  A+
Student ID                     :  C181024
Grade                          :  A+
Student ID                     :  C181023
Grade                          :  A
Student ID                     :  C181033
Grade                          :  A+
Student ID                     :  C181008
Grade                          :  A+
Student ID                     :  C181024
Grade                          :  A
Student ID                     :  C181008
Grade                          :  A
Student ID                     :  C181008
Grade                          :  A
Student ID                     :  C181023
Grade                          :  A+

Statement processed.
```

0.36 seconds

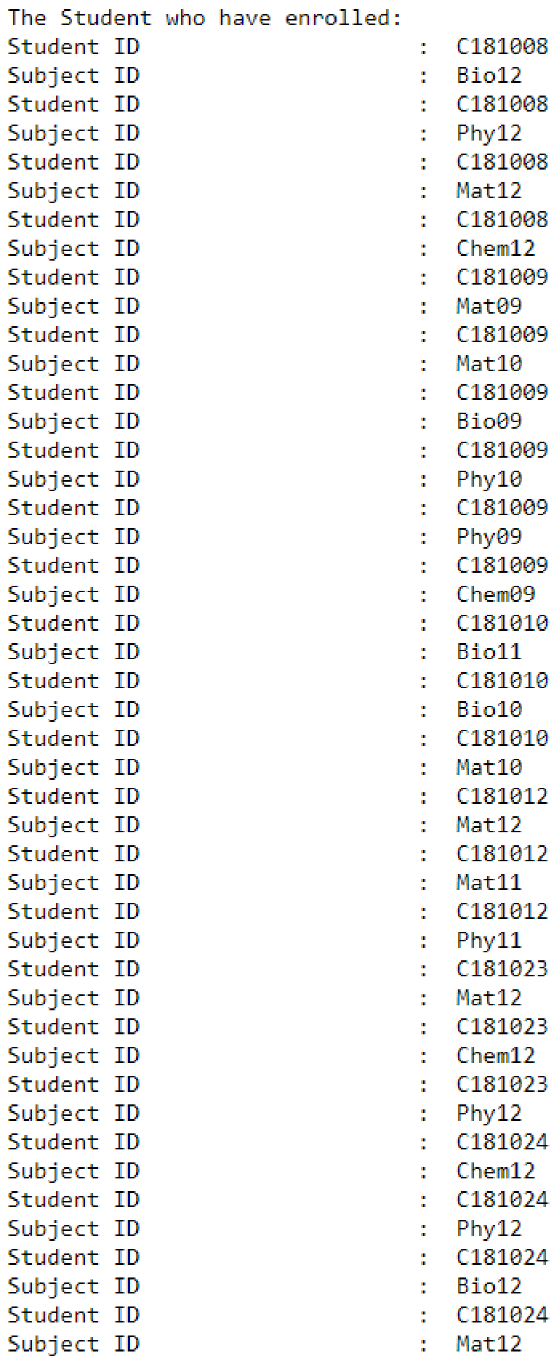
ii) Show the Student who have enrolled any subject:

```
DECLARE
 std_record enroll%ROWTYPE;
 CURSOR std IS
 SELECT *
 FROM enroll
 order by student_id;

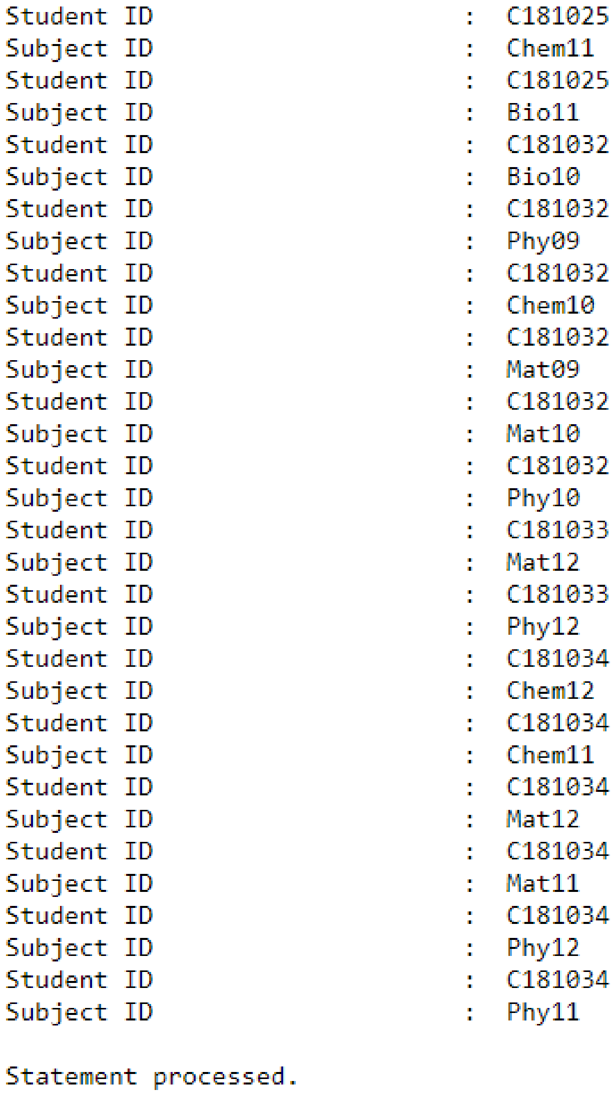
BEGIN
 open std;
 dbms_output.put_line('The Student who have enrolled: ');
 LOOP
   FETCH std INTO std_record;
   exit WHEN std%NOTFOUND;

   dbms_output.put_line('Student ID           :  '|| std_record.student_id);
   dbms_output.put_line('Subject ID          :  '|| std_record.subject_id);
 END LOOP;
CLOSE std;


END;
```



```
The Student who have enrolled:
Student ID                    :  C181008
Subject ID                    :  Bio12
Student ID                    :  C181008
Subject ID                    :  Phy12
Student ID                    :  C181008
Subject ID                    :  Mat12
Student ID                    :  C181008
Subject ID                    :  Chem12
Student ID                    :  C181009
Subject ID                    :  Mat09
Student ID                    :  C181009
Subject ID                    :  Mat10
Student ID                    :  C181009
Subject ID                    :  Bio09
Student ID                    :  C181009
Subject ID                    :  Phy10
Student ID                    :  C181009
Subject ID                    :  Phy09
Student ID                    :  C181009
Subject ID                    :  Chem09
Student ID                    :  C181010
Subject ID                    :  Bio11
Student ID                    :  C181010
Subject ID                    :  Bio10
Student ID                    :  C181010
Subject ID                    :  Mat10
Student ID                    :  C181012
Subject ID                    :  Mat12
Student ID                    :  C181012
Subject ID                    :  Mat11
Student ID                    :  C181012
Subject ID                    :  Phy11
Student ID                    :  C181023
Subject ID                    :  Mat12
Student ID                    :  C181023
Subject ID                    :  Chem12
Student ID                    :  C181023
Subject ID                    :  Phy12
Student ID                    :  C181024
Subject ID                    :  Chem12
Student ID                    :  C181024
Subject ID                    :  Phy12
Student ID                    :  C181024
Subject ID                    :  Bio12
Student ID                    :  C181024
Subject ID                    :  Mat12
```



```
Student ID                    :  C181025
Subject ID                    :  Chem11
Student ID                    :  C181025
Subject ID                    :  Bio11
Student ID                    :  C181032
Subject ID                    :  Bio10
Student ID                    :  C181032
Subject ID                    :  Phy09
Student ID                    :  C181032
Subject ID                    :  Chem10
Student ID                    :  C181032
Subject ID                    :  Mat09
Student ID                    :  C181032
Subject ID                    :  Mat10
Student ID                    :  C181032
Subject ID                    :  Phy10
Student ID                    :  C181033
Subject ID                    :  Mat12
Student ID                    :  C181033
Subject ID                    :  Phy12
Student ID                    :  C181034
Subject ID                    :  Chem12
Student ID                    :  C181034
Subject ID                    :  Chem11
Student ID                    :  C181034
Subject ID                    :  Mat12
Student ID                    :  C181034
Subject ID                    :  Mat11
Student ID                    :  C181034
Subject ID                    :  Phy12
Student ID                    :  C181034
Subject ID                    :  Phy11

Statement processed.
```

iii) Show the GPA of students who are in class 12:

```
DECLARE
 std_record exams%ROWTYPE;
 CURSOR std IS
 SELECT *
 FROM exams
 where student_id IN(select student_id
                     from student
                     where class_id='12');

BEGIN
 open std;
 dbms_output.put_line('The result of class 12: ');
 LOOP
   FETCH std INTO std_record;
   exit WHEN std%NOTFOUND;


   dbms_output.put_line('Student ID                    :'|| std_record.student_id);

   if(std_record.grade='A+') then
   dbms_output.put_line('Grade                         :'|| std_record.grade || '     GPA :
4.00');


   elsif(std_record.grade='A') then
   dbms_output.put_line('Grade                         :'|| std_record.grade || '     GPA :
3.75');


   elsif(std_record.grade='A-') then
   dbms_output.put_line('Grade                         :'|| std_record.grade || '     GPA :
3.50');
```

```
  elsif(std_record.grade='B+') then
  dbms_output.put_line('Grade                    :'|| std_record.grade || '     GPA :
3.25');


  elsif(std_record.grade='B') then
  dbms_output.put_line('Grade                    :'|| std_record.grade || '     GPA :
3.00');

  elsif(std_record.grade='B-') then
  dbms_output.put_line('Grade                    :'|| std_record.grade || '     GPA :
2.75');

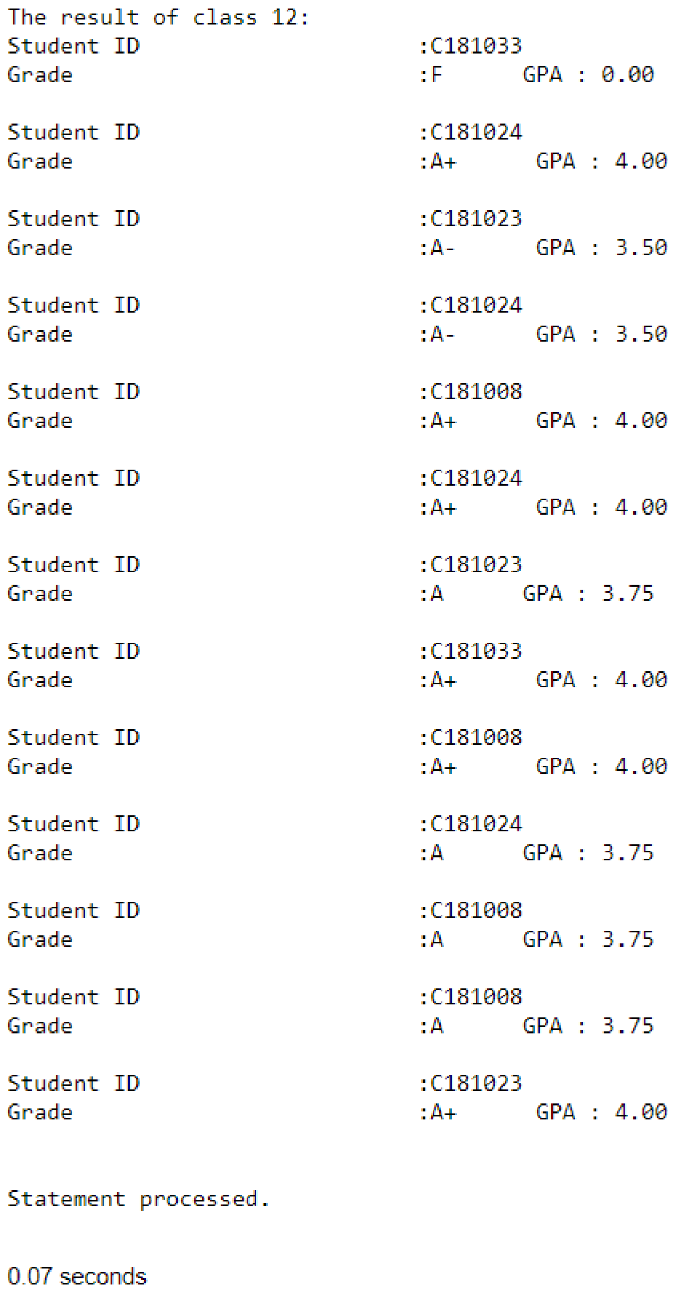

  elsif(std_record.grade='C+') then
  dbms_output.put_line('Grade                    :'|| std_record.grade || '     GPA :
2.50');


  elsif(std_record.grade='C') then
  dbms_output.put_line('Grade                    :'|| std_record.grade || '     GPA :
2.00');


  elsif(std_record.grade='F') then
  dbms_output.put_line('Grade                    :'|| std_record.grade || '     GPA :
0.00');
  end if;
 dbms_output.put_line('               ');


 END LOOP;
CLOSE std;


END;
```



```
The result of class 12:
Student ID                     :C181033
Grade                          :F      GPA : 0.00

Student ID                     :C181024
Grade                          :A+      GPA : 4.00

Student ID                     :C181023
Grade                          :A-      GPA : 3.50

Student ID                     :C181024
Grade                          :A-      GPA : 3.50

Student ID                     :C181008
Grade                          :A+      GPA : 4.00

Student ID                     :C181024
Grade                          :A+      GPA : 4.00

Student ID                     :C181023
Grade                          :A      GPA : 3.75

Student ID                     :C181033
Grade                          :A+      GPA : 4.00

Student ID                     :C181008
Grade                          :A+      GPA : 4.00

Student ID                     :C181024
Grade                          :A      GPA : 3.75

Student ID                     :C181008
Grade                          :A      GPA : 3.75

Student ID                     :C181008
Grade                          :A      GPA : 3.75

Student ID                     :C181023
Grade                          :A+      GPA : 4.00


Statement processed.
```

0.07 seconds

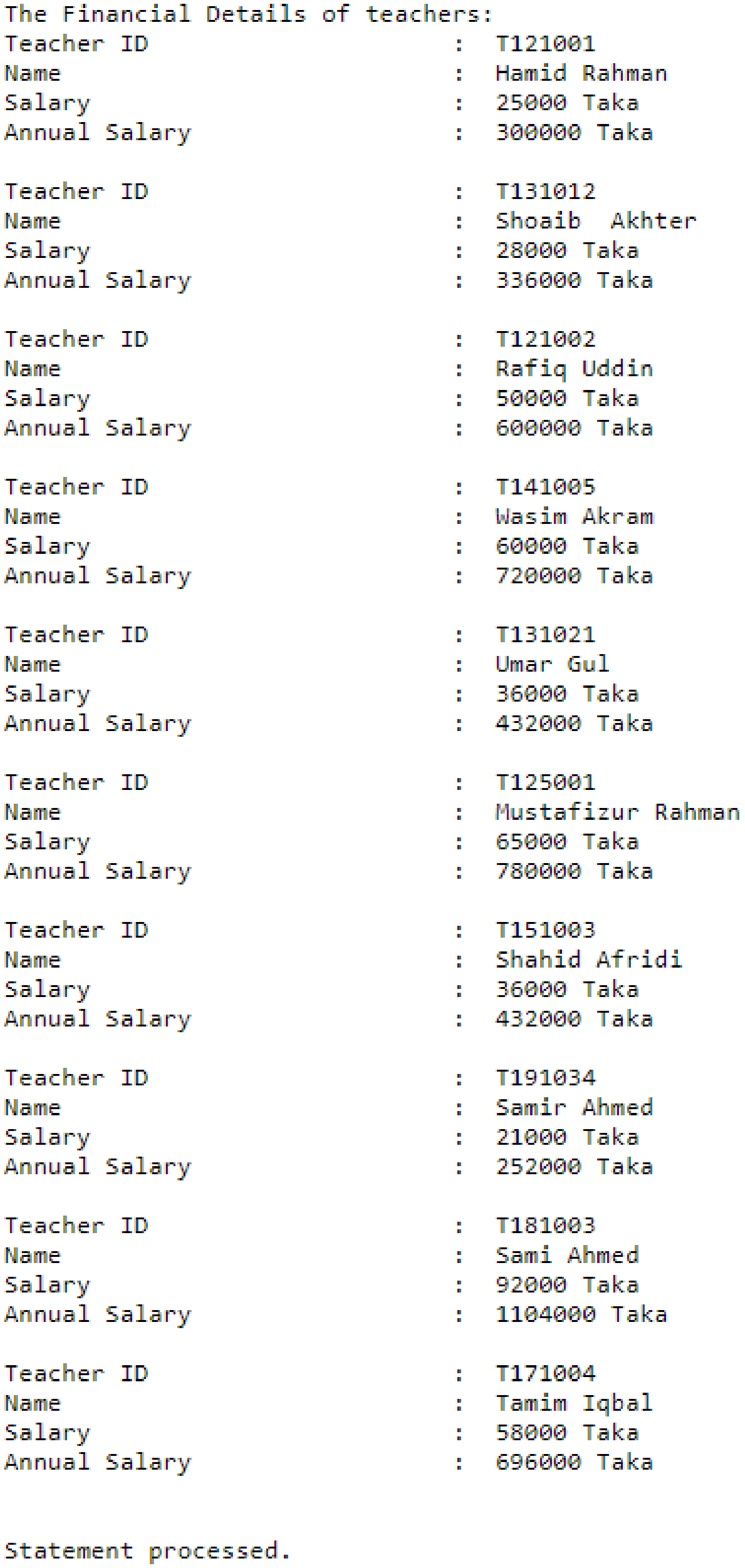
iv) Find the financial details of Teachers:

```
DECLARE
 std_record teacher%ROWTYPE;
 CURSOR std IS
 SELECT *
 FROM teacher;

BEGIN
 open std;
 dbms_output.put_line('The Financial Details of teachers: ');
 LOOP
   FETCH std INTO std_record;
   exit WHEN std%NOTFOUND;

   dbms_output.put_line('Teacher ID          :  '||
std_record.teacher_id);
   dbms_output.put_line('Name             :  '||
std_record.first_name||' '||std_record.last_name);
   dbms_output.put_line('Salary            :  '|| std_record.salary||'
Taka');
   dbms_output.put_line('Annual Salary         :  '||
std_record.salary*12||' Taka');
   dbms_output.put_line('                           ');
 END LOOP;
CLOSE std;


END;
```



```
The Financial Details of teachers:
Teacher ID                     :  T121001
Name                           :  Hamid Rahman
Salary                         :  25000 Taka
Annual Salary                  :  300000 Taka

Teacher ID                     :  T131012
Name                           :  Shoaib  Akhter
Salary                         :  28000 Taka
Annual Salary                  :  336000 Taka

Teacher ID                     :  T121002
Name                           :  Rafiq Uddin
Salary                         :  50000 Taka
Annual Salary                  :  600000 Taka

Teacher ID                     :  T141005
Name                           :  Wasim Akram
Salary                         :  60000 Taka
Annual Salary                  :  720000 Taka

Teacher ID                     :  T131021
Name                           :  Umar Gul
Salary                         :  36000 Taka
Annual Salary                  :  432000 Taka

Teacher ID                     :  T125001
Name                           :  Mustafizur Rahman
Salary                         :  65000 Taka
Annual Salary                  :  780000 Taka

Teacher ID                     :  T151003
Name                           :  Shahid Afridi
Salary                         :  36000 Taka
Annual Salary                  :  432000 Taka

Teacher ID                     :  T191034
Name                           :  Samir Ahmed
Salary                         :  21000 Taka
Annual Salary                  :  252000 Taka

Teacher ID                     :  T181003
Name                           :  Sami Ahmed
Salary                         :  92000 Taka
Annual Salary                  :  1104000 Taka

Teacher ID                     :  T171004
Name                           :  Tamim Iqbal
Salary                         :  58000 Taka
Annual Salary                  :  696000 Taka


Statement processed.
```

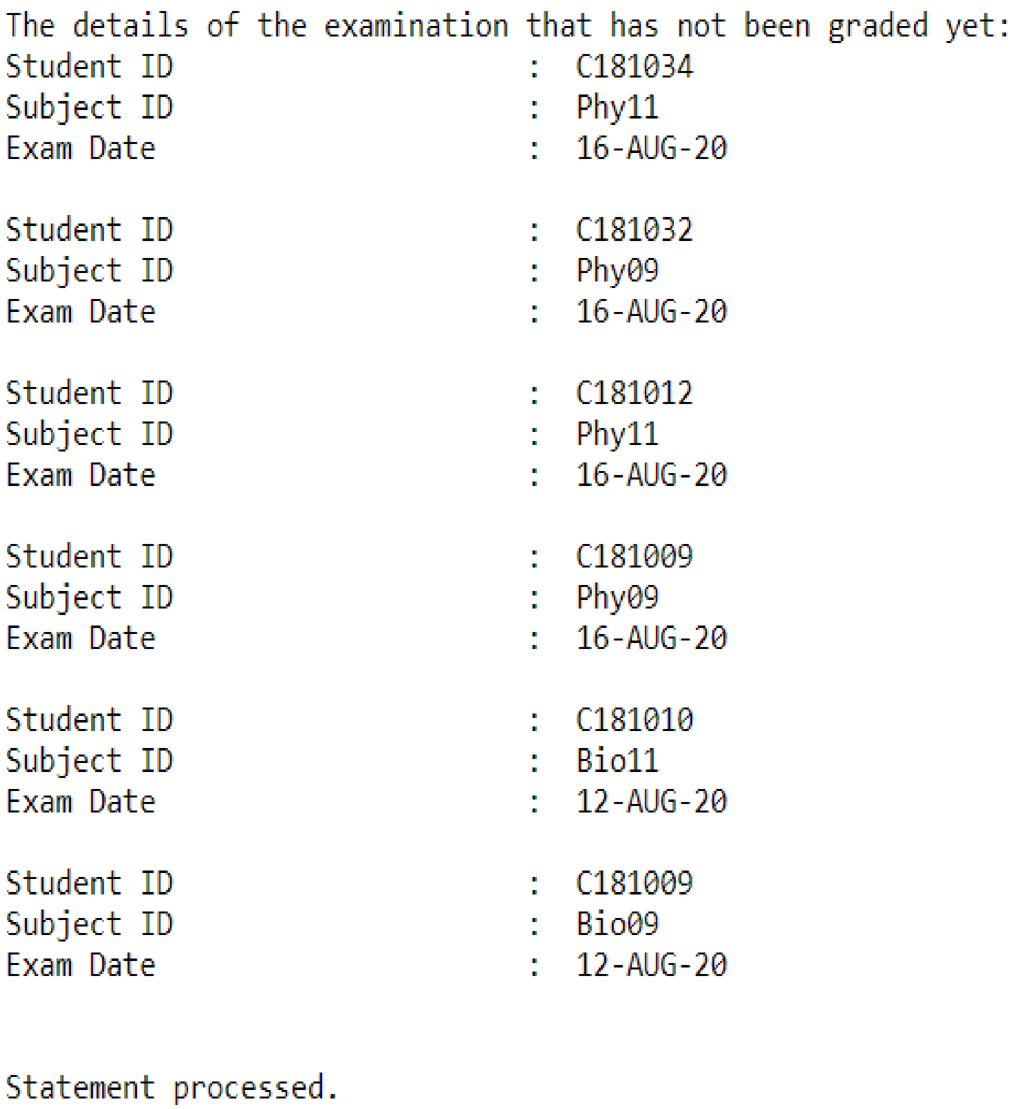
v) Find the details of those examination that has not been graded yet:

```
DECLARE
 std_record exams%ROWTYPE;
 CURSOR std IS
 SELECT *
 FROM exams
 where grade IS NULL;

BEGIN
 open std;
 dbms_output.put_line('The details of the examination that has not been graded
yet: ');
 LOOP
   FETCH std INTO std_record;
   exit WHEN std%NOTFOUND;

   dbms_output.put_line('Student ID                    :  '|| std_record.student_id);
   dbms_output.put_line('Subject ID                    :  '|| std_record.subject_id);
   dbms_output.put_line('Exam Date                     :  '|| std_record.exam_date);
   dbms_output.put_line('                                         ');
 END LOOP;
CLOSE std;

END;
```



```
The details of the examination that has not been graded yet:
Student ID                      : C181034
Subject ID                      : Phy11
Exam Date                       : 16-AUG-20

Student ID                      : C181032
Subject ID                      : Phy09
Exam Date                       : 16-AUG-20

Student ID                      : C181012
Subject ID                      : Phy11
Exam Date                       : 16-AUG-20

Student ID                      : C181009
Subject ID                      : Phy09
Exam Date                       : 16-AUG-20

Student ID                      : C181010
Subject ID                      : Bio11
Exam Date                       : 12-AUG-20

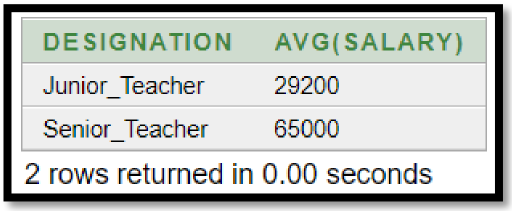
Student ID                      : C181009
Subject ID                      : Bio09
Exam Date                       : 12-AUG-20


Statement processed.
```

EXTRA

*Find the average salary of teachers according to their designation:

```
select designation, avg(salary)
from teacher
group by designation
```

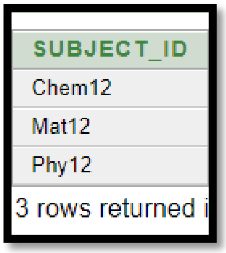


DESIGNATION	AVG(SALARY)
Junior_Teacher	29200
Senior_Teacher	65000

2 rows returned in 0.00 seconds

*Find the Common subject enrolled by student C181008 and C181023:

```
select subject_id
from enroll
where student_id='C181008'
intersect
select subject_id
from enroll
where student_id='C181023'
```

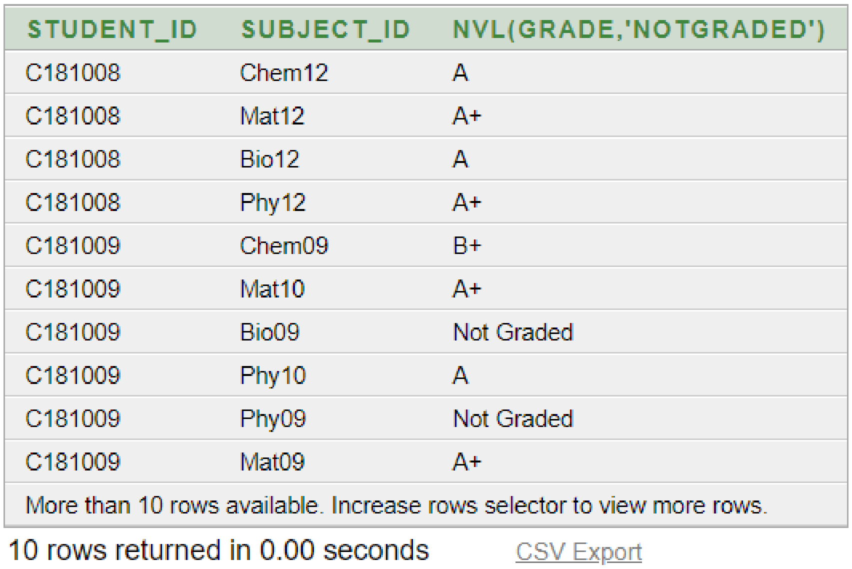


SUBJECT_ID
Chem12
Mat12
Phy12

3 rows returned i

*Show the Grades which have not been graded yet as “Not Graded”:

```
select student_id,subject_id,NVL(grade,'Not Graded')
from exams
order by student_id;
```



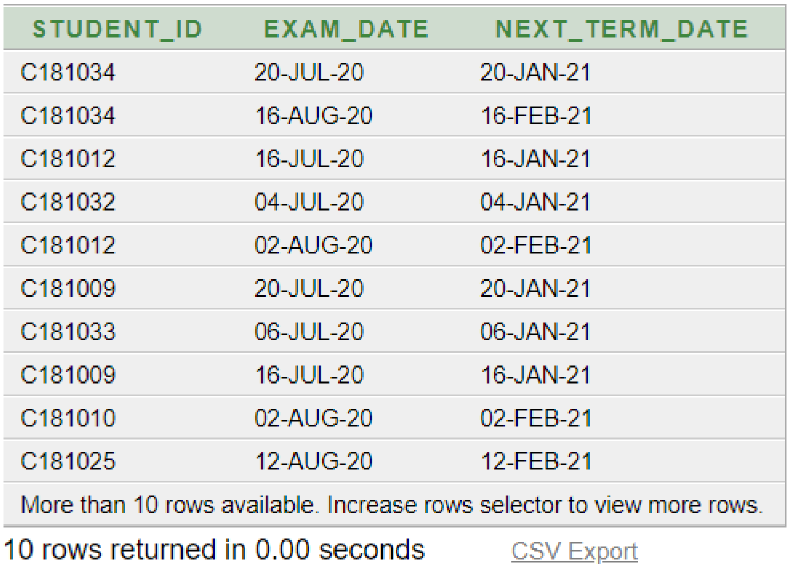
STUDENT_ID	SUBJECT_ID	NVL(GRADE,'NOTGRADED')
C181008	Chem12	A
C181008	Mat12	A+
C181008	Bio12	A
C181008	Phy12	A+
C181009	Chem09	B+
C181009	Mat10	A+
C181009	Bio09	Not Graded
C181009	Phy10	A
C181009	Phy09	Not Graded
C181009	Mat09	A+

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

***Show the date of next term by adding 6 months on exam date label the column as next_term-date:**

```
select student_id,exam_date,ADD_MONTHS(exam_date,6)AS NEXT_TERM_DATE
from exams
```



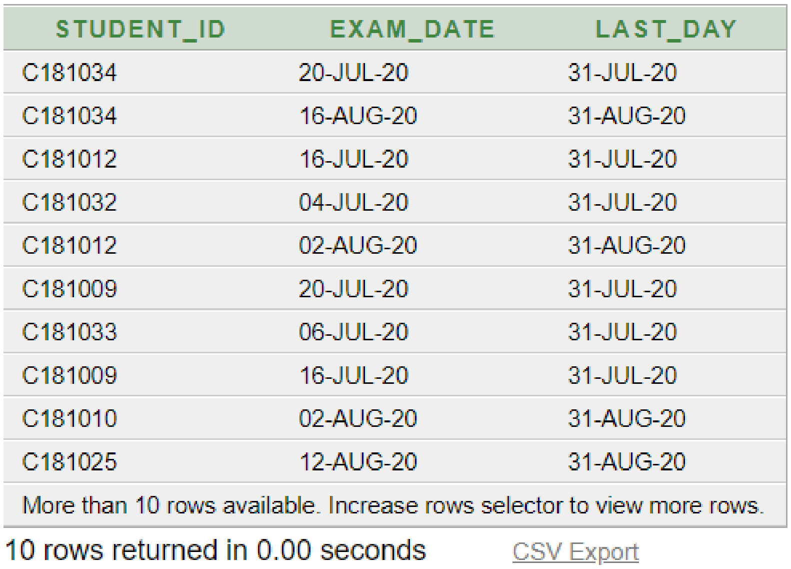
STUDENT_ID	EXAM_DATE	NEXT_TERM_DATE
C181034	20-JUL-20	20-JAN-21
C181034	16-AUG-20	16-FEB-21
C181012	16-JUL-20	16-JAN-21
C181032	04-JUL-20	04-JAN-21
C181012	02-AUG-20	02-FEB-21
C181009	20-JUL-20	20-JAN-21
C181033	06-JUL-20	06-JAN-21
C181009	16-JUL-20	16-JAN-21
C181010	02-AUG-20	02-FEB-21
C181025	12-AUG-20	12-FEB-21

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds CSV Export

*Find the end of the date of exam months:

```
select student_id,exam_date,last_day(exam_date)AS last_day
from exams
```



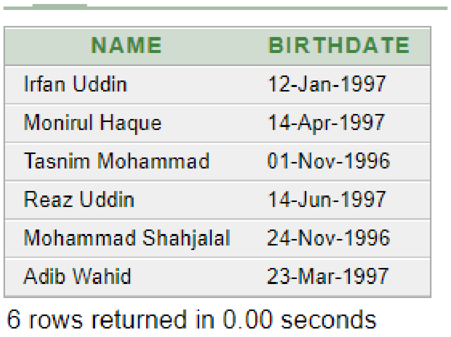
STUDENT_ID	EXAM_DATE	LAST_DAY
C181034	20-JUL-20	31-JUL-20
C181034	16-AUG-20	31-AUG-20
C181012	16-JUL-20	31-JUL-20
C181032	04-JUL-20	31-JUL-20
C181012	02-AUG-20	31-AUG-20
C181009	20-JUL-20	31-JUL-20
C181033	06-JUL-20	31-JUL-20
C181009	16-JUL-20	31-JUL-20
C181010	02-AUG-20	31-AUG-20
C181025	12-AUG-20	31-AUG-20

More than 10 rows available. Increase rows selector to view more rows.

10 rows returned in 0.00 seconds

*Find the DOB of students who were born before 12-Apr-98:

```
select frist_name||' '||last_name as Name, TO_CHAR(DOB,'DD-Mon-YYYY')BirthDate
from student
where DOB<TO_DATE('12-Apr-98','DD-Mon-RR');
```

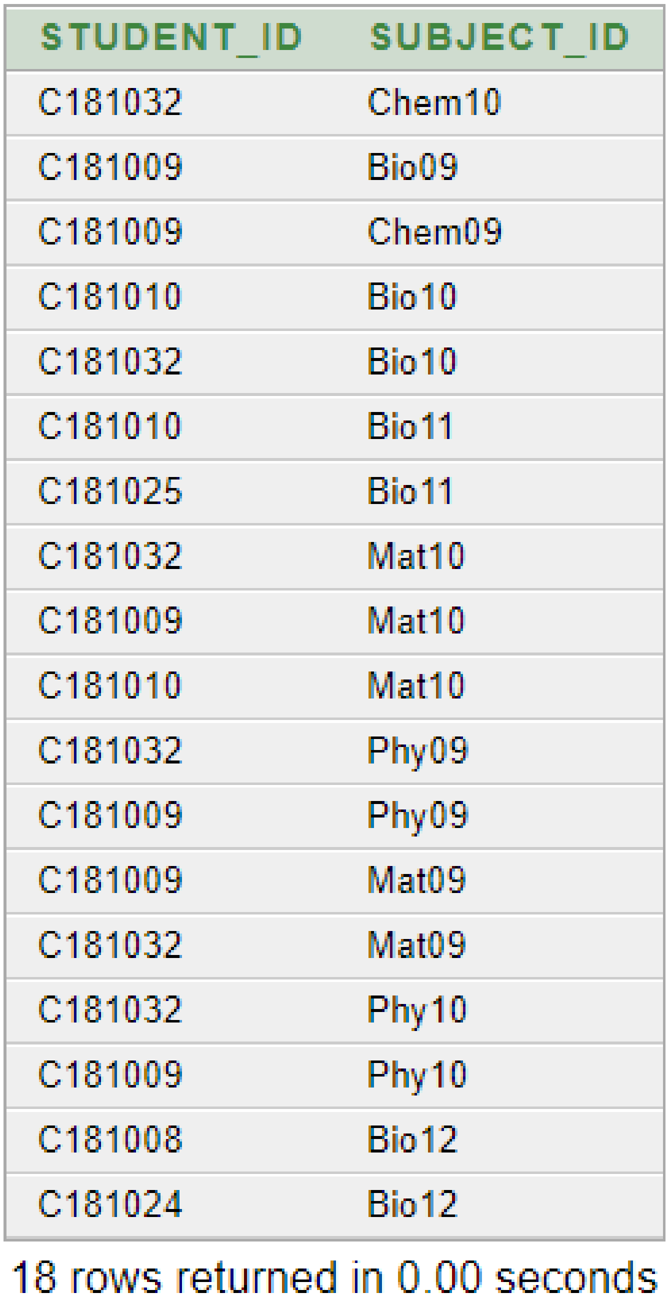


NAME	BIRTHDATE
Irfan Uddin	12-Jan-1997
Monirul Haque	14-Apr-1997
Tasnim Mohammad	01-Nov-1996
Reaz Uddin	14-Jun-1997
Mohammad Shahjalal	24-Nov-1996
Adib Wahid	23-Mar-1997

6 rows returned in 0.00 seconds

***Find the subjects that have not been enrolled by student C181034:**

```
select student_id,subject_id
from enroll
where subject_id NOT IN (select subject_id
                         from enroll
                          where student_id='C181034')
```

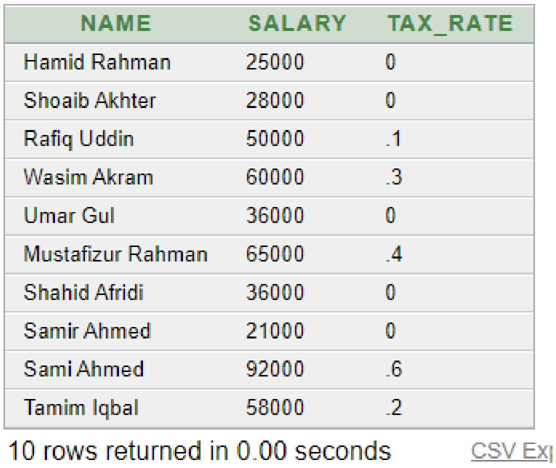


STUDENT_ID	SUBJECT_ID
C181032	Chem10
C181009	Bio09
C181009	Chem09
C181010	Bio10
C181032	Bio10
C181010	Bio11
C181025	Bio11
C181032	Mat10
C181009	Mat10
C181010	Mat10
C181032	Phy09
C181009	Phy09
C181009	Mat09
C181032	Mat09
C181032	Phy10
C181009	Phy10
C181008	Bio12
C181024	Bio12

18 rows returned in 0.00 seconds

*Find the Tax rate of Teachers who earns more than 50000:

```
Select first_name||' '||last_name as Name,salary,
    DECODE(Trunc(salary/50000, 1),
                   0.0, 0.00,
                   0.1, 0.00,
                   0.2, 0.00,
                   0.3, 0.00,
                   0.4, 0.00,
                   0.5, 0.00,
                   0.6, 0.00,
                   0.7, 0.00,
                   0.8, 0.00,
                   0.9, 0.00,
                   1.0,0.10,
                   1.1, 0.20,
                   1.2, 0.30,
                   1.3, 0.40,
                   1.4, 0.50,
                   1.5, 0.55,
                      0.60) Tax_rate
From teacher
```

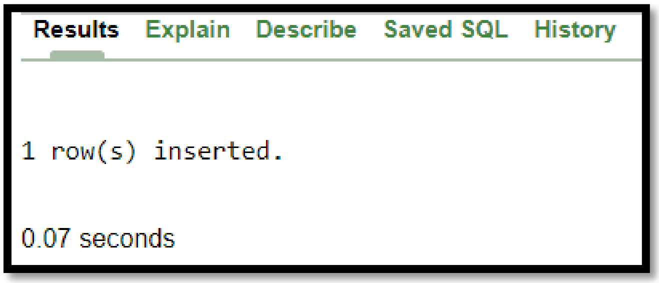


NAME	SALARY	TAX_RATE
Hamid Rahman	25000	0
Shoaib Akhter	28000	0
Rafiq Uddin	50000	.1
Wasim Akram	60000	.3
Umar Gul	36000	0
Mustafizur Rahman	65000	.4
Shahid Afridi	36000	0
Samir Ahmed	21000	0
Sami Ahmed	92000	.6
Tamim Iqbal	58000	.2

10 rows returned in 0.00 seconds

*Insert new data in teacher's table:

```
Insert INTO teacher
VALUES('T191872', 'Rafiq', 'Uddin', 'Senior_Teacher', 72000, 181666543,
'Chittagong');
```

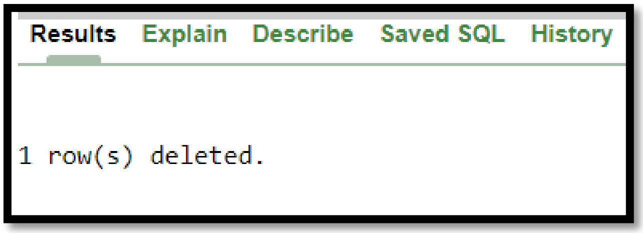


```
1 row(s) inserted.

0.07 seconds
```

*Delete the teacher's id 'T191872' :

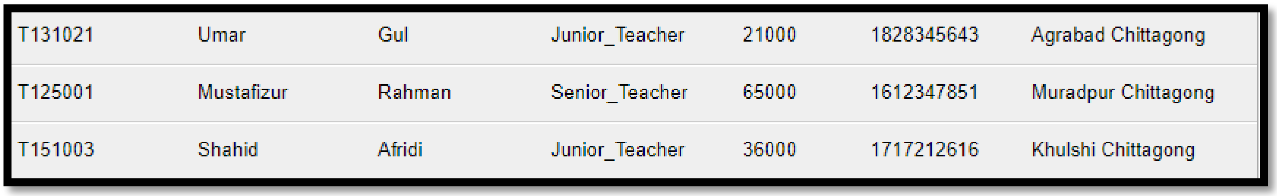
```
DELETE FROM teacher
where teacher_id='T191872';
```



```
1 row(s) deleted.
```

*Update salary of ‘T131021’ that match with the salary of ‘T151003’:

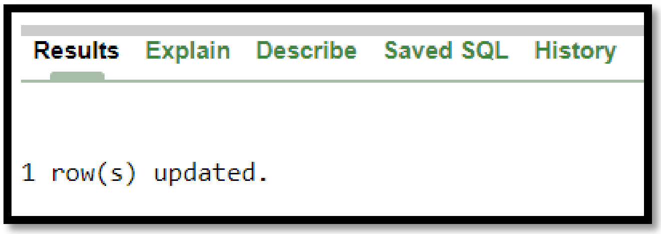
Before:



T131021	Umar	Gul	Junior_Teacher	21000	1828345643	Agrabad Chittagong
T125001	Mustafizur	Rahman	Senior_Teacher	65000	1612347851	Muradpur Chittagong
T151003	Shahid	Afridi	Junior_Teacher	36000	1717212616	Khulshi Chittagong

```
UPDATE teacher
set salary = (Select salary
          from teacher
          where teacher_id='T151003')
where teacher_id='T131021'
```

After:



```
1 row(s) updated.
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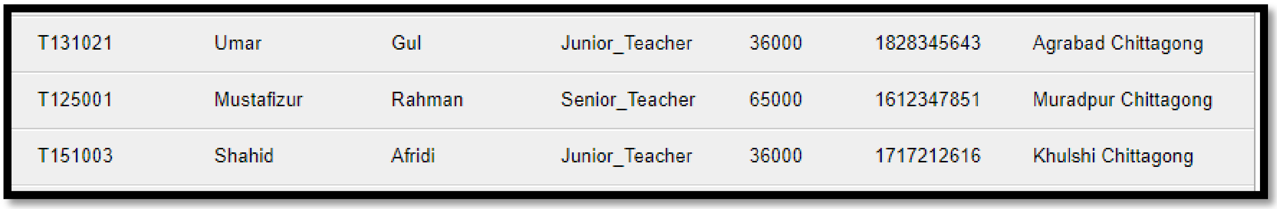

T131021	Umar	Gul	Junior_Teacher	36000	1828345643	Agrabad Chittagong
T125001	Mustafizur	Rahman	Senior_Teacher	65000	1612347851	Muradpur Chittagong
T151003	Shahid	Afridi	Junior_Teacher	36000	1717212616	Khulshi Chittagong

-------------------------------The End-----------------------------------

Thank You

Assalamu Alaikum