

PRACTICAL ASSIGNMENT- 7

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- Program: AIML
- University Roll No. : 2215500071
- Section: 2AC
- Class Roll No. : 28

```
CREATE DATABASE P6;  
USE P6;
```

```
CREATE TABLE IF NOT EXISTS Student (  
    sID INT PRIMARY KEY,  
    sName VARCHAR(50),  
    GPA FLOAT,  
    sizeHS INT NOT NULL,  
    DoB VARCHAR(50)  
);
```

```
INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('123', 'Amy', '3.9',  
'1000', '1996-06-26');  
  
INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('234', 'Bob', '3.6',  
'1500', '1995-04-07');  
  
INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('345', 'Craig', '3.5',  
'500', '1995-02-04');  
  
INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('456', 'Doris', '3.9',  
'1000', '1997-07-24');  
  
INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('567', 'Edward', '2.9',  
'2000', '1996-12-21');  
  
INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('678', 'Fay', '3.8',  
'200', '1996-08-27');
```

```

INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('789', 'Gary', '3.4',
'800', '1996-10-08');

INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('987', 'Helen', '3.7',
'800', '1997-03-27');

INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('876', 'Irene', '3.9',
'400', '1996-03-07');

INSERT INTO student(sID, sName, GPA, sizeHS, DoB) VALUES ('765', 'Jay', '2.9',
'1500', '1998-08-08');

INSERT INTO student (sID, sName, GPA, sizeHS, DoB) VALUES ('654', 'Amy', '3.9',
'1000', '1996-05-26');

INSERT INTO student (sID, sName, GPA, sizeHS, DoB) VALUES ('543', 'Craig', '3.4',
'2000', '1998-08-27');

SELECT * FROM student;

```

localmysql: SELECT * FROM st... X ...				
sID	sName	GPA	sizeHS	DoB
abc Filter...	abc Filter...	abc Filter...	abc Filter...	abc Filter...
123	Amy	3.9	1000	1996-06-26
234	Bob	3.6	1500	1995-04-07
345	Craig	3.5	500	1995-02-04
456	Doris	3.9	1000	1997-07-24
543	Craig	3.4	2000	1998-08-27
567	Edward	2.9	2000	1996-12-21
654	Amy	3.9	1000	1996-05-26
678	Fay	3.8	200	1996-08-27
765	Jay	2.9	1500	1998-08-08
789	Gary	3.4	800	1996-10-08
876	Irene	3.9	400	1996-03-07
987	Helen	3.7	800	1997-03-27

```

CREATE TABLE IF NOT EXISTS College(
    cName VARCHAR(50) PRIMARY KEY,
    State VARCHAR(50),
    enrollment INT NOT NULL
);

INSERT INTO college(cName, State, enrollment) VALUES('Stanford', 'CA', '15000');

INSERT INTO college(cName, State, enrollment) VALUES('Berkeley', 'CA', '36000');

INSERT INTO college(cName, State, enrollment) VALUES('MIT', 'MA', '10000');

INSERT INTO college(cName, State, enrollment) VALUES('Cornell', 'NY', '21000');

INSERT INTO college(cName, State, enrollment) VALUES('Harvard', 'MA', '50040');

SELECT * FROM college;

```

localmysql: SELECT * FROM co... X

cName	State	enrollment
abc Filter...	abc Filter...	abc Filter...
Berkeley	CA	36000
Cornell	NY	21000
Harvard	MA	50040
MIT	MA	10000
Stanford	CA	15000

```

CREATE TABLE IF NOT EXISTS Applied(
    sID INT NOT NULL,
    cName VARCHAR(50) NOT NULL,
    major VARCHAR(50) NOT NULL,
    decision VARCHAR(1) NOT NULL
);

INSERT INTO Applied(sID, cName, major, decision) VALUES('123', 'Stanford', 'CS', 'Y');

```

```
INSERT INTO Applied(sID, cName, major, decision) VALUES('123', 'Stanford', 'EE', 'N');

INSERT INTO Applied(sID, cName, major, decision) VALUES('123', 'Berkeley', 'CS', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('123', 'Cornell', 'EE', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('234', 'Berkeley', 'biology', 'N');

INSERT INTO Applied(sID, cName, major, decision) VALUES('345', 'MIT', 'bioengineering', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('345', 'Cornell', 'bioengineering', 'N');

INSERT INTO Applied(sID, cName, major, decision) VALUES('345', 'Cornell', 'CS', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('345', 'Cornell', 'EE', 'N');

INSERT INTO Applied(sID, cName, major, decision) VALUES('678', 'Stanford', 'history', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('987', 'Stanford', 'CS', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('987', 'Berkeley', 'CS', 'Y');

INSERT INTO Applied(sID, cName, major, decision) VALUES('876', 'Stanford', 'CS', 'N');

INSERT INTO Applied(sID, cName, major, decision) VALUES('876', 'MIT', 'biology', 'Y');

INSERT INTO applied(sID, cName, major, decision) VALUES('876', 'MIT', 'marine biology', 'N');

INSERT INTO Applied(sID, cName, major, decision) VALUES('765', 'Stanford', 'history', 'Y');
```

```
INSERT INTO applied(sID, cName, major, decision) VALUES('765', 'Stanford',  
'history', 'N');  
  
INSERT INTO applied(sID, cName, major, decision) VALUES('765', 'Cornell',  
'history', 'N');  
  
INSERT INTO applied(sID, cName, major, decision) VALUES('765', 'Cornell',  
'psychology', 'Y');  
  
INSERT INTO applied(sID, cName, major, decision) VALUES('543', 'MIT', 'CS', 'N');  
  
SELECT * FROM applied;
```

localmysql: SELECT * FROM ap... X

sID	cName	major	decision
abc Filter...	abc Filter...	abc Filter...	abc Filter...
123	Stanford	CS	Y
123	Stanford	EE	N
123	Berkeley	CS	Y
123	Cornell	EE	Y
234	Berkeley	biology	N
345	MIT	bioengineering	Y
345	Cornell	bioengineering	N
345	Cornell	CS	Y
345	Cornell	EE	N
678	Stanford	history	Y
987	Stanford	CS	Y
987	Berkeley	CS	Y
876	Stanford	CS	N
876	MIT	biology	Y
876	MIT	marine biology	N
765	Stanford	history	Y
765	Stanford	history	N
765	Cornell	history	N
765	Cornell	psychology	Y

Write SQL queries for the following:

```
-- Q1. Create view WeakStudent on Student whose GPA is less than 3.7.
CREATE VIEW WeakStudent AS
SELECT *
FROM Student
WHERE GPA < 3.7;
```

```

-- Q2. Create a view cView on college (containing all the columns) and rename the
column cName as collegeName and enrollment as seats respectively.
CREATE VIEW cView AS
SELECT cName AS collegeName, enrollment AS seats, state, enrollment
FROM college;

-- Q3. Create view CSaccept having IDs and college of students who applied to CS
major and their application is accepted.
CREATE VIEW CSaccept AS
SELECT sID, cName
FROM Apply
WHERE major = 'CS' AND decision = 'Y';

-- Q4. Create view CSberkeley having IDs, name, GPA, sizeHS of those students who
are accepted in CS at Berkeley and come from a High School with more than 500
students.
CREATE VIEW CSberkeley AS
SELECT s.sID, s.sName, s.GPA, s.sizeHS
FROM Student s
JOIN CSaccept c ON s.sID = c.sID
WHERE c.cName = 'Berkeley' AND s.sizeHS > 500;

-- Q5. Display information about students in CSberk having GPA greater than 3.8.
SELECT *
FROM CSberkeley
WHERE GPA > 3.8;

-- Q6. Drop view CSaccept.
DROP VIEW CSaccept;

-- Q7. Display all students in CSberkeley.
SELECT *
FROM CSberkeley;

-- Q8. Update GPA by 0.8 of students in view WeakStudent who have a high school
size greater than 1000.
UPDATE Student
SET GPA = GPA + 0.8
WHERE sID IN (SELECT sID FROM WeakStudent WHERE sizeHS > 1000);

-- Q9. Create a view AppCount which contains sID of Student and the number of
applications they filed. Name the column sID and NoOfApp.
CREATE VIEW AppCount AS
SELECT sID, COUNT(*) AS NoOfApp
FROM Apply

```

```

GROUP BY sID;

-- Q10. Update NoOfApp so that sID 234 contains 4 applications.
UPDATE AppCount
SET NoOfApp = 4
WHERE sID = 234;

-- Q11. Create a view StuName containing student names and their GPA. Is this
View Updatable? If not, specify why.
CREATE VIEW StuName AS
SELECT sName, GPA
FROM Student;

-- This view is not updatable because it contains columns from the Student table
that are not unique, making it ambiguous for the database to determine which
records to update if changes are made.

-- Q12. Create view studentHS having details of students who come from a High
School of size more than 1000 using with check option.
CREATE VIEW studentHS AS
SELECT *
FROM Student
WHERE sizeHS > 1000
WITH CHECK OPTION;

-- Q13. Try to insert details of a new student Ram with sID 999 having GPA 9.9
and sizeHS 9999 to the newly created view studentHS. (Comment on whether this
view is updatable.)
-- This insert will fail because the check option is set, and the sizeHS value
for Ram (9999) does not meet the condition specified in the view (sizeHS > 1000).
Therefore, the view is not updatable in this context.

-- Q14. Clerk realizes he wrongly typed sizeHS of Ramu as 9999; it is actually
999. Can you help him update the value of sizeHS of Ramu?
UPDATE studentHS
SET sizeHS = 999
WHERE sID = 999;

-- Q15. Now, another boy registered in our system named Ramu with sID 998 having
GPA 9.8 and sizeHS 989.
INSERT INTO studentHS (sID, sName, GPA, sizeHS)
VALUES (998, 'Ramu', 9.8, 989);

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- Program: AIML
- University Roll No. : 2215500071
- Section: 2AC
- Class Roll No. : 28
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- Submitted on: 06-05-2024