SOFTENG 351: Assignment #2

April 22, 2020

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abur970 - 600280511

Q1

1)

(SELECT Pname, Pnumber, Plocation FROM PROJECT, DEPARTMENT, EMPLOYEE WHERE Dnum=Dnumber ANI
UNION (SELECT Pname, Pnumber, Plocation FROM PROJECT, WORKS_ON, EMPLOYEE WHERE Pnumber=Pno

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 16, 2020 at 11:27 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: (SELECT Pname, Pnumber, Plocation FROM PROJECT, DEPARTMENT, EMPLOYEE WHERE Dnum=Dnumber AND
Mgr_ssn=Ssn AND Lname='James') UNION (SELECT Pname, Pnumber, Plocation FROM PROJECT, WORKS_ON, EMPLOYEE WHERE
Pnumber=Pno AND Essn=Ssn AND Lname='James');
Rows: 5

Pname	Pnumber	Plocation
OperatingSystem	61	Jacksonville
DatabaseSystems	62	Birmingham
Middleware	63	Jackson
ProductA	4	Bellaire
LaserPrinters	92	LasVegas

Print

2)

SELECT DISTINCT Ssn, Fname, Lname FROM EMPLOYEE, WORKS_ON, PROJECT WHERE Address LIKE '%H

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 16, 2020 at 11:36 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT DISTINCT Ssn, Fname, Lname FROM EMPLOYEE, WORKS_ON, PROJECT WHERE
Address LIKE '%Houston%' AND Pnumber=Pno AND Plocation LIKE'%Houston%' AND Essn=Ssn LIMIT 0, 30 ;
Rows: 2

Ssn	Fname	Lname
333445555	Franklin	Wong
888665555	James	Borg

Print

3)

SELECT Pname, Hours, Ssn, Fname, Lname FROM EMPLOYEE, WORKS_ON, PROJECT, DEPARTMENT WHERE E

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 16, 2020 at 11:41 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT Pname, Hours, Ssn, Fname, Lname FROM EMPLOYEE, WORKS_ON, PROJECT, DEPARTMENT WHERE Essn=Ssn AND Pnumber=Pno
AND Dname='Hardware' AND Dnumber=Dnum ORDER BY Pname, Hours DESC, Lname LIMIT 0, 30 ;
Rows: 11

Pname	Hours	Ssn	Fname	Lname
InkjetPrinters	40.0	444444401	Bonnie	Bays
InkjetPrinters	40.0	444444402	Alec	Best
InkjetPrinters	40.0	444444400	Alex	Freed
InkjetPrinters	40.0	666666601	Jill	Jarvis
InkjetPrinters	40.0	666666604	Billie	King
InkjetPrinters	40.0	666666606	Ray	King
InkjetPrinters	40.0	666666603	Lyle	Leslie
InkjetPrinters	40.0	444444403	Sam	Snedden
LaserPrinters	44.0	555555501	Nandita	Ball
LaserPrinters	40.0	555555500	John	James
LaserPrinters	40.0	666666605	Jon	Kramer

Print

4)

SELECT Fname, Lname, Dname AS "HoD" FROM EMPLOYEE, DEPARTMENT WHERE Dno=Dnumber AND Super_

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 17, 2020 at 08:58 AM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT Fname, Lname, Dname AS "HoD" FROM EMPLOYEE, DEPARTMENT WHERE Dno=Dnumber AND Super_ssn IS
NULL AND Mgr_ssn = Ssn LIMIT 0, 30 ;
Rows: 3

This table does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Fname	Lname	HoD
James	Borg	Headquarters
Jared	James	Software
Alex	Freed	Hardware

Print

5)

SELECT Ssn, Fname, Lname, Sex FROM EMPLOYEE WHERE (SELECT COUNT(∗)   FROM DEPENDENT WHERE Essn=Ssn)   >=2

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 17, 2020 at 09:04 AM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT Ssn, Fname, Lname, Sex FROM EMPLOYEE WHERE (SELECT COUNT(*) FROM DEPENDENT WHERE Essn=Ssn) >=2 LIMIT 0, 30 ;
Rows: 3

Ssn	Fname	Lname	Sex
123456789	John	Smith	M
333445555	Franklin	Wong	M
444444400	Alex	Freed	M

Print

6)

SELECT Dno, Dname, COUNT(∗) AS No_of_Employees, SUM(Salary) AS Total_Sal, MAX(Salary) AS H

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 21, 2020 at 11:56 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT Dno, Dname, COUNT(*) AS No_of_Employees, SUM(Salary) AS Total_Sal, MAX(Salary) AS Highest_Sal, MIN(Salary) AS Lowest_Sal, AVG(Salary) AS Average_Sal FROM EMPLOYEE NATURAL JOIN DEPARTMENT WHERE Dno=Dnumber GROUP BY Dno LIMIT 0, 30 ;
Rows: 6

This table does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Dno	Dname	No_of_Employees	Total_Sal	Highest_Sal	Lowest_Sal	Average_Sal
1 [->]	Headquarters	1	55000.00	55000.00	55000.00	55000.000000
4 [->]	Administration	3	93000.00	43000.00	25000.00	31000.000000
5 [->]	Research	4	133000.00	40000.00	25000.00	33250.000000
6 [->]	Software	8	480000.00	85000.00	40000.00	60000.000000
7 [->]	Hardware	10	634500.00	92000.00	43000.00	63450.000000
8 [->]	Sales	14	571500.00	96000.00	29000.00	40821.428571

Print

7)

SELECT Pno, Pname, COUNT(∗) AS Team_Size, SUM(Hours) AS Total_Hours FROM PROJECT, WORKS_ON

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 22, 2020 at 12:01 AM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT Pno, Pname, COUNT(*) AS Team_Size, SUM(Hours) AS Total_Hours FROM PROJECT, WORKS_ON WHERE Pnumber=Pno GROUP BY Pnumber HAVING COUNT(*)>2 LIMIT 0, 30 ;
Rows: 9

Pno	Pname	Team_Size	Total_Hours
2	ProductY	3	37.5
10	Computerization	3	55.0
20	Reorganization	3	25.0
30	Newbenefits	3	55.0
61	OperatingSystem	9	350.0
62	DatabaseSystems	8	298.0
63	Middleware	4	136.0
91	InkjetPrinters	8	320.0
92	LaserPrinters	3	124.0

Print

8)

a)

CREATE VIEW dept_managers AS SELECT Dno, Dname, Fname, Lname, Salary FROM DEPARTMENT, EMPL0

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 22, 2020 at 12:55 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT * FROM `dept_managers` LIMIT 0, 30 ;
Rows: 5

Dno	Dname	Fname	Lname	Salary
1	Headquarters	James	Borg	55000.00
4	Administration	Jennifer	Wallace	43000.00
5	Research	Franklin	Wong	40000.00
6	Software	Jared	James	85000.00
7	Hardware	Alex	Freed	89000.00

Print

b)

CREATE VIEW proj_summary AS SELECT Pno, Pname, Dname, COUNT(*) AS Team_Size, SUM(Hours) AS

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 22, 2020 at 01:01 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT * FROM `proj_summary` LIMIT 0, 30 ;
Rows: 11

This table does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

Pno	Pname	Dname	Team_Size	Total_Hours
1	ProductX	Research	2	52.5
2	ProductY	Research	3	37.5
3	ProductZ	Research	2	50.0
10	Computerization	Administration	3	55.0
20	Reorganization	Headquarters	3	25.0
30	Newbenefits	Administration	3	55.0
61	OperatingSystem	Software	9	350.0
62	DatabaseSystems	Software	8	298.0
63	Middleware	Software	4	136.0
91	InkjetPrinters	Hardware	8	320.0
92	LaserPrinters	Hardware	3	124.0

Print

9)

SELECT * FROM EMPLOYEE ORDER BY Salary DESC LIMIT 0, 5

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 22, 2020 at 01:03 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT * FROM EMPLOYEE ORDER BY Salary DESC LIMIT 0, 5;
Rows: 5

Fname	Minit	Lname	Ssn	Bdate	Address	Sex	Salary	Super_ssn	Dno
Bob	B	Bender	666666600	1968-04-17	8794 Garfield, Chicago, IL	M	96000.00	*NULL*	8 [->]
Evan	E	Wallis	222222200	1958-01-16	134 Pelham, Milwaukee, WI	M	92000.00	*NULL*	7 [->]
Alex	D	Freed	444444400	1950-10-09	4333 Pillsbury, Milwaukee, WI	M	89000.00	*NULL*	7 [->]
Jared	D	James	111111100	1966-10-10	123 Peachtree, Atlanta, GA	M	85000.00	*NULL*	6 [->]
John	C	James	555555500	1975-06-30	7676 Bloomington, Sacramento,	M	81000.00	*NULL*	6 [->]

Print

10)

SELECT SUM(Hours) AS Work_load, Salary, Dname AS Department   FROM EMPLOYEE, WORKS_ON, DEPAR

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q1
Generation Time: Apr 22, 2020 at 01:08 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT SUM(Hours) AS Work_load, Salary, Dname AS Department FROM EMPLOYEE,
WORKS_ON, DEPARTMENT WHERE Dno=Dnumber AND Ssn=Essn GROUP BY Ssn ORDER BY
SUM(Hours) DESC LIMIT 0, 3;
Rows: 3

This table does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not
available.

Work_load	Salary	Department
50.0	33500.00	Sales
48.0	56000.00	Hardware
46.0	44000.00	Software

Print

Q2

a)

SELECT crn, ctitle, C.cprefix, C.cno, sid, fname, lname FROM courses AS C, students, sectio

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q2
Generation Time: Apr 22, 2020 at 01:30 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT crn, ctitle, C.cprefix, C.cno, sid, fname, lname FROM courses AS C, students, sections AS S
WHERE C.cno=S.cno AND S.crn="10101" AND S.term="FA" AND S.year="2002" LIMIT 0, 30 ;
Rows: 8

crn	ctitle	cprefix	cno	sid	fname	lname
10101	Introduction to Computer Science	CSC	2010	1111	John	Davison
10101	Introduction to Computer Science	CSC	2010	2222	Jacob	Oram
10101	Introduction to Computer Science	CSC	2010	3333	Ashish	Bagai
10101	Introduction to Computer Science	CSC	2010	4444	Joe	Harris
10101	Introduction to Computer Science	CSC	2010	5555	Andy	Blignaut
10101	Introduction to Computer Science	CSC	2010	6666	Pommie	Mbangwa
10101	Introduction to Computer Science	CSC	2010	7777	Ian	Healy
10101	Introduction to Computer Science	CSC	2010	8888	Dougie	Marillier

Print

b)

SELECT DISTINCT E.crn, C.ctitle, S.cprefix, S.cno, S.days, S.startTime, S.endTime, S.room,

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q2
Generation Time: Apr 22, 2020 at 01:44 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT DISTINCT E.crn, C.ctitle, S.cprefix, S.cno, S.days, S.startTime, S.endTime, S.room, S.instructor FROM enrolls AS E, sections AS S, courses AS C WHERE E.sid="1111" AND E.term="FA" AND E.year="2002" AND C.cno=S.cno AND E.crn=S.crn LIMIT 0, 30 ;
Rows: 4

This table does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

crn	ctitle	cprefix	cno	days	startTime	endTime	room	instructor
10101	Introduction to Computer Science	CSC	2010	MWF	09.00	09.50	105G	Bhola
10103	Intro to Programming in Java	CSC	2310	MWF	12.00	12.50	106G	Henry
10301	Calculus I	MATH	2211	TR	11.00	12.50	305G	Li
10101	Computers and Applications	CSC	1010	MWF	09.00	09.50	105G	Bhola

Print

c)

SELECT S.year, S.term, S.cprefix, S.cno, C.ctitle, E.grade FROM enrolls AS E, sections as S

SQL result

Host: Student mysql database
Database: stu_abur970_SOFTENG_351_C_S1_2020_A2_Q2
Generation Time: Apr 22, 2020 at 01:51 PM
Generated by: phpMyAdmin 4.0.10.7 / MySQL 5.1.73-log
SQL query: SELECT S.year, S.term, S.cprefix, S.cno, C.ctitle, E.grade FROM enrolls AS E, sections as S, courses as C WHERE E.crn=S.crn AND E.term=S.term AND E.year=S.year AND S.cno=C.cno AND E.sid="1111" LIMIT 0, 30 ;
Rows: 5

This table does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

year	term	cprefix	cno	ctitle	grade
2002	SU	CSC	1010	Computers and Applications	A
2002	FA	CSC	2010	Introduction to Computer Science	NULL
2002	FA	CSC	2310	Intro to Programming in Java	NULL
2002	FA	MATH	2211	Calculus I	NULL
2002	SU	POLS	1200	Intro Political Sci	C

Print

d)

```
CREATE ASSERTION workload_restriction CHECK (NOT EXISTS(
    SELECT *
        FROM students AS ST, enrolls AS E, sections AS S, courses AS C
    WHERE ST.sType="UGRAD" AND E.sid=ST.sid AND E.crn=S.crn AND S.cno=C.cno AND
        E.term=S.term AND E.year=S.year
        GROUP BY E.sid, E.term, E.year
    HAVING SUM(C.chours)>20
```

UNION

    SELECT *

    FROM students **AS** ST, enrolls **AS** E, sections **AS** S, courses **AS** C

WHERE ST.sType="GRAD" **AND** E.sid=ST.sid **AND** E.crn=S.crn **AND** S.cno=C.cno **AND** E.term=S.ter

GROUP BY E.sid, E.term, E.**year**

HAVING SUM(C.chours)>15)

)