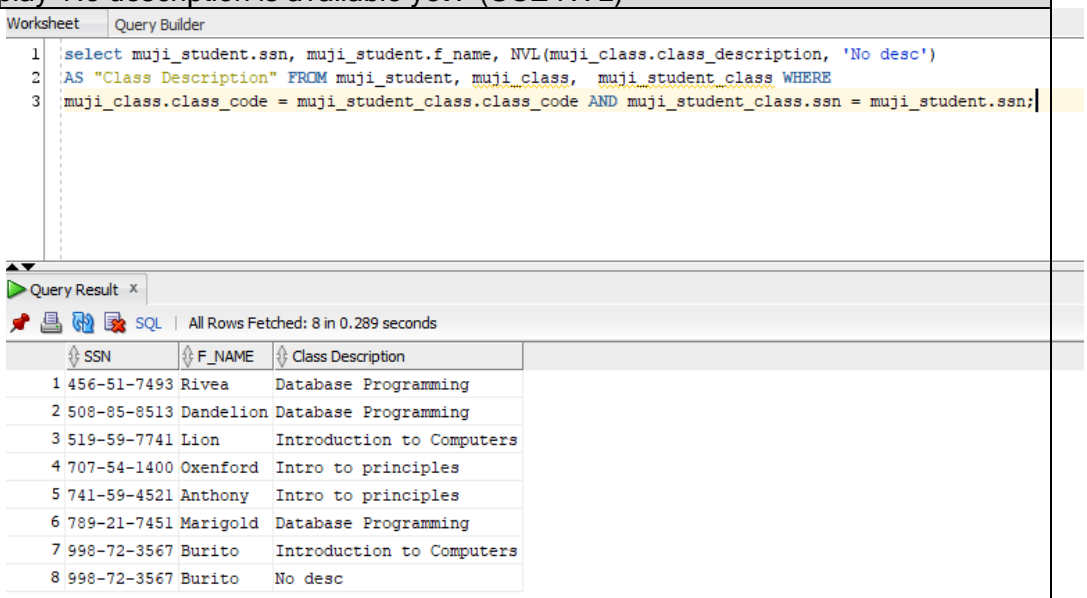
Follow the same formatting guidelines as the previous homework assignment.

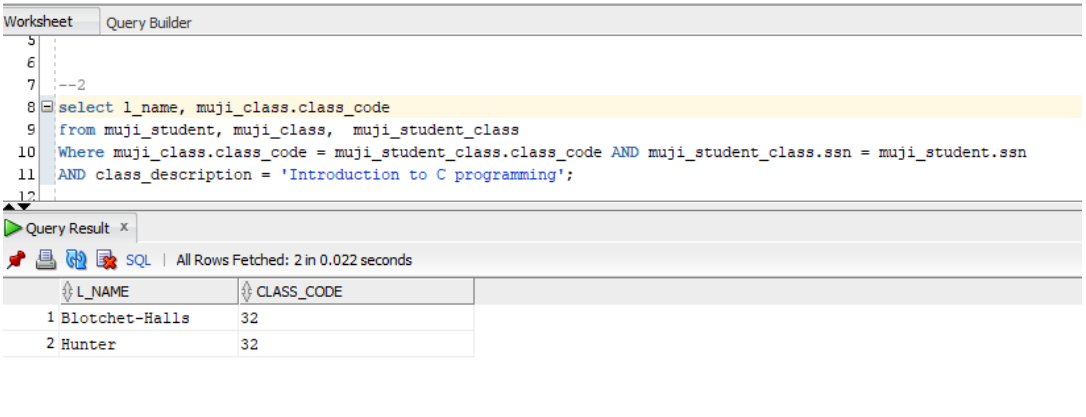
Copy and paste the contents of student.txt (Same as the previous lab) into your SQLPlus session. Rename the tables such that they are all prefixed with the first five letters of your lastname such as sabze_student. Make sure that the tables (student, classes and student_class) are all renamed properly before you continue.

Use only a single SQL statement for each of the following questions

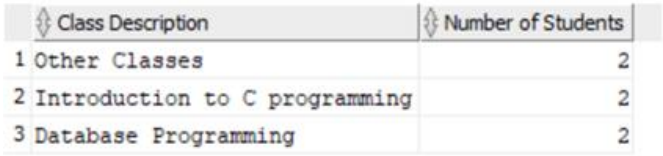
1	Give a listing of all the ssns,first names and the class descriptions of all the classes the students are taking. If there are no class _descriptions display 'No description is available yet'. (USE NVL)



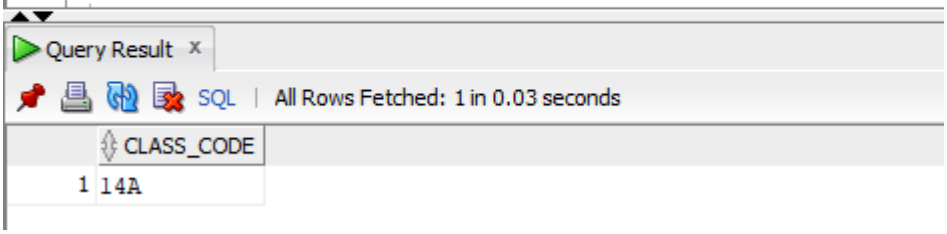
2	Give a listing of only the lname and the class_code for students who are taking 'Introduction to C programming'. (Inner join)



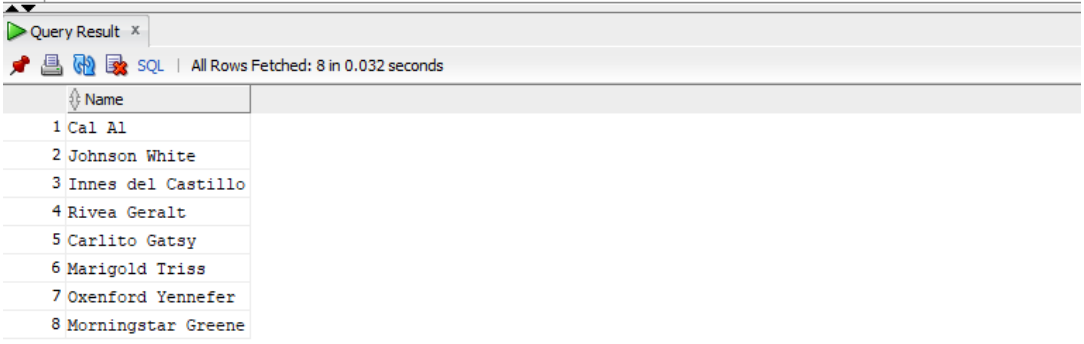
3	Give a lising of all the class_descriptions and the number of students enrolled in each class for all students who are older than the average age where the total number of students for the class is more than 1 student. Order by the number of students. If there is no class description replace it with 'Other Classes' (Note: Take it in steps. First do all those who are older than the average age, then do the group by, then add the having clause and then the order and then combine everything together)

	`Select NVL(muji_class.class_description, 'Other Classes') AS "Class Description", count (*) AS "Number of Students"`
	`From muji_student, muji_class, muji_studnet_class`
	`where muji_student.ssn = muji_student_class.ssn and muji_class.class_code = muji_student_class.CLASS_CODE`
	`AND TRUNC(MONTHS_BETWEEN(SYSDATE,dob)/12) > (Select AVG (TRUNC(MONTHS_BETWEEN(SYSDATE,dob)/12) from muji_student)`
	`group by class.class_description HAVING COUNT(*) > 1 ORDER BY COUNT(*);`
	 

4	Give a listing of all the classes for which no students are enrolled in (use in or not in clause) (subquery)

	`select class_code from muji_class where class_code NOT IN`
	`(SELECT DISTINCT (class_code) FROM muji_student_class);`
	 

5	Give a listing of all the students who are not enrolled in any classes (Note: Use Exists or not Exists)

	`--5`
	`select f_name|| ' '||l_name AS "Name" FROM muji_student`
	`WHERE NOT EXISTS (SELECT * FROM muji_student_class WHERE muji_student.ssn=muji_student_class.ssn);`
	 

6	create a new table that contains the list of all the students and class_descriptions. Include In this table the list of all students who are not enrolled in any classes (display no classes). If there are no

	class descriptions then display 'no description' (Use combination of inner join, union and minus) (Note: minus will deal with the students who are not enrolled in any classes)

```
create table new_table AS(select f_name||' '||l_name AS "Name",
NVL(class_description,'No Desc') AS "Class Description"
FROM muji_student, muji_class,  muji_student_class
WHERE muji_student.ssn = muji_student_class.ssn AND muji_student_class.class_code = muji_class.class_code
union (SELECT f_name||' '||l_name AS "Name", 'No Classes'
FROM (SELECT ssn FROM muji_student MINUS SELECT ssn FROM muji_student_class)
NATURAL JOIN muji_student));
```

	Name	Class Description
1	Abraham Bennet	Database Programming
2	Akiko Yokomoto	Introduction to Computers
3	Albert Greeenr	Introduction to Computers
4	Albert Greeenr	No Description
5	Ann Dull	Intro to principles
6	Burt Gringlesby	Introduction to C programming
7	Cal Al	No classes
8	Chastity Locksley	No Description
9	Cheryl Gren	No classes
10	Innes del Castillo	Database Programming
11	Johnson White	Database Programming
12	Marjorie Green	Introduction to C programming
13	Michael O'Leary	Intro to principles
14	Morningstar Greene	No Description
15	Reginald Blotchet-Halls	No Description

7	repeat question 6 using a combination of inner join, union and not exists (Note: Not exists will deal with the students who are not enrolled in any classes)

```
--7
create table new_table AS(select f_name||' '||l_name AS "Name",
NVL(class_description,'No Desc') AS "Class Description"
FROM muji_student, muji_class,  muji_student_class
WHERE muji_student.ssn = muji_student_class.ssn AND muji_student_class.class_code = muji_class.class_code
union (SELECT f_name||' '||l_name AS "Name", 'No Classes'
FROM (SELECT ssn FROM muji_student WHERE NOT EXISTS(SELECT ssn FROM muji_student_class
WHERE muji_student.ssn = muji_student_class.ssn))
NATURAL JOIN muji_student));
```

	Name	Class Description
1	Abraham Bennet	Database Programming
2	Akiko Yokomoto	Introduction to Computers
3	Albert Greeenr	Introduction to Computers
4	Albert Greeenr	No Description
5	Ann Dull	Intro to principles
6	Burt Gringlesby	Introduction to C programming
7	Cal Al	No classes
8	Chastity Locksley	No Description
9	Cheryl Gren	No classes
10	Innes del Castillo	Database Programming
11	Johnson White	Database Programming
12	Marjorie Green	Introduction to C programming
13	Michael O'Leary	Intro to principles
14	Morningstar Greene	No Description
15	Reginald Blotchet-Halls	No Description

8 We want to find out which courses are being taken by the different students for all those whose age is greater than the average age. Give a listing of the course descriptions and student names (Inner join)

```
--8
select f_name||' '||l_name AS "Name",
NVL(class_description,'Other Classes') AS "Class Description"
FROM muji_student, muji_class,  muji_student_class
WHERE muji_student.ssn = muji_student_class.ssn AND muji_student_class.class_code = muji_class.class_code
AND TRUNC (MONTHS_BETWEEN(SYSDATE,DOB)/12)> (SELECT AVG(TRUNC(MONTHS_BETWEEN
(SYSDATE,DOB)/12)) FROM muji_student);
```

Script Output × Query Result ×

SQL | All Rows Fetched: 4 in 0.025 seconds

	Name	Class Description
1	Reginald Blotchet-Halls	Introduction to C programming
2	Chastity Locksley	Other Classes
3	Dandelion Jack	Database Programming
4	Sheryl Hunter	Introduction to C programming

9 We want to find out the courses that each student is not enrolled in.
Give a listing of the course descriptions, and the students (lname) who are not taking that specific course
(Use a cartesian product and inner join it with a minus)

```
--9
Select class_description, l_name FROM muji_class, muji_student
MINUS SELECT l_name, class_description FROM muji_student, muji_class,  muji_student_class
Where muji_class.class_code = muji_student_class.class_code AND muji_student_class.ssn = muji_student.ssn;
```

Script Output | Query Result

SQL | All Rows Fetched: 90 in 0.06 seconds

	CLASS_DESCRIPTION	L_NAME
1	Database Programming	Al
2	Database Programming	Blotchet-Halls
3	Database Programming	Gatsy
4	Database Programming	Geralt
5	Database Programming	Greene
6	Database Programming	Hunter
7	Database Programming	Jack
8	Database Programming	Locksley
9	Database Programming	Mufasa
10	Database Programming	Sam
11	Database Programming	Taco
12	Database Programming	Triss
13	Database Programming	White
14	Database Programming	Yennefer
15	Database Programming	del Castillo
16	Intro to principles	Al
17	Intro to principles	Blotchet-Halls
18	Intro to principles	Gatsy
19	Intro to principles	Geralt
20	Intro to principles	Greene
21	Intro to principles	Hunter
22	Intro to principles	Jack
23	Intro to principles	Locksley
24	Intro to principles	Mufasa
25	Intro to principles	Sam
26	Intro to principles	Taco
27	Intro to principles	Triss
28	Intro to principles	White

	CLASS_DESCRIPTION	L_NAME
28	Intro to principles	White
29	Intro to principles	Yennefer
30	Intro to principles	del Castillo
31	Introduction to C programming	Al
32	Introduction to C programming	Blotchet-Halls
33	Introduction to C programming	Gatsy
34	Introduction to C programming	Geralt
35	Introduction to C programming	Greene
36	Introduction to C programming	Hunter
37	Introduction to C programming	Jack
38	Introduction to C programming	Locksley
39	Introduction to C programming	Mufasa
40	Introduction to C programming	Sam
41	Introduction to C programming	Taco
42	Introduction to C programming	Triss
43	Introduction to C programming	White
44	Introduction to C programming	Yennefer
45	Introduction to C programming	del Castillo
46	Introduction to Computers	Al
47	Introduction to Computers	Blotchet-Halls
48	Introduction to Computers	Gatsy
49	Introduction to Computers	Geralt
50	Introduction to Computers	Greene
51	Introduction to Computers	Hunter
52	Introduction to Computers	Jack
53	Introduction to Computers	Locksley
54	Introduction to Computers	Mufasa
55	Introduction to Computers	Sam

55	Introduction to Computers	Sam
56	Introduction to Computers	Taco
57	Introduction to Computers	Triss
58	Introduction to Computers	White
59	Introduction to Computers	Yennefer
60	Introduction to Computers	del Castillo
61	Operating systems	Al
62	Operating systems	Blotchet-Halls
63	Operating systems	Gatsy
64	Operating systems	Geralt
65	Operating systems	Greene
66	Operating systems	Hunter
67	Operating systems	Jack
68	Operating systems	Locksley
69	Operating systems	Mufasa
70	Operating systems	Sam
71	Operating systems	Taco
72	Operating systems	Triss
73	Operating systems	White
74	Operating systems	Yennefer
75	Operating systems	del Castillo
76	(null)	Al
77	(null)	Blotchet-Halls
78	(null)	Gatsy
79	(null)	Geralt
80	(null)	Greene
81	(null)	Hunter
82	(null)	Jack
83	(null)	Locksley
84	(null)	Mufasa
85	(null)	Sam
86	(null)	Taco
87	(null)	Triss
88	(null)	White
89	(null)	Yennefer
90	(null)	del Castillo