

Assignment Solution:

Question 1: Retrieving a list of all restaurants and their menu items (using LEFT JOIN)

To retrieve a list of all restaurants along with their menu items, we can use a LEFT JOIN between the Restaurant_info and Menuitems tables. A LEFT JOIN ensures that we get all the restaurants, even if they do not have any menu items.

SQL query:

```
SELECT
  RESTAURANT_INFO.NAME AS RESTAURANT_NAME,
  MENUITEMS.NAME AS MENUITEMS_NAME
FROM
  RESTAURANT_INFO
LEFT JOIN
  MENUITEMS
ON
  RESTAURANT_INFO.RESTAURANT_ID = MENUITEMS.RESTAURANT_ID;
```

LEFT JOIN ensures that all restaurants from the Restaurant_info table will be included in the result, even if they do not have any corresponding entries in the Menuitems table.

Restaurant_Name: From the Restaurant_info table.

Menuitems_Name: From the Menuitems table (if available).

Output:

RESTAURANT_NAME	MENUITEMS_NAME
Restaurant A	Item6
Restaurant A	Item7
Restaurant A	Item17
Restaurant A	Item30
Restaurant A	Item43
Restaurant B	Item18
Restaurant B	Item35
Restaurant B	Item40
Restaurant B	Item45
Restaurant C	Item5
Restaurant C	Item29
Restaurant C	Item34
Restaurant C	Item47
Restaurant C	Item50
Restaurant D	Item15
Restaurant D	Item44
Restaurant D	Item49
Restaurant E	Item20
Restaurant E	Item24
Restaurant E	Item26
Restaurant E	Item39
Restaurant F	Item16
Restaurant F	Item27
Restaurant F	Item36
Restaurant G	Item3
Restaurant G	Item10
Restaurant G	Item31
Restaurant G	Item37
Restaurant G	Item48
Restaurant H	Item4
Restaurant H	Item8
Restaurant H	Item13
Restaurant I	Item25
Restaurant I	Item38
Restaurant J	Item14
Restaurant J	Item19
Restaurant J	Item22
Restaurant K	Item28
Restaurant K	Item32
Restaurant K	Item41
Restaurant K	Item42
Restaurant L	Item1
Restaurant L	Item2
Restaurant L	Item9
Restaurant L	Item11
Restaurant L	Item12
Restaurant L	Item21
Restaurant L	Item23
Restaurant L	Item33
Restaurant L	Item46

Question 2: Adding contact number and handling unavailable menu items

In this part, we will extend the previous query by adding the restaurant's contact number and handling the case where no menu items are available. If no menu items exist for a restaurant, we will display "No Menu Items".

SQL query:

```
SELECT
  RESTAURANT_INFO.NAME,
  RESTAURANT_INFO.CONTACT_NUMBER,
  COALESCE(MENUITEMS.NAME, 'NO MENU ITEMS') AS MENU_ITEM_NAME,
  MENUITEMS.AVAILABILITY
FROM
  RESTAURANT_INFO
LEFT JOIN
  MENUITEMS
ON
  RESTAURANT_INFO.RESTAURANT_ID = MENUITEMS.RESTAURANT_ID;
```

COALESCE(Menuitems.Name, 'No Menu Items'): This function checks if the menu item is NULL. If it is, it replaces the value with "No Menu Items".

Contact_Number: Now included from the Restaurant_info table.

Availability: From the Menuitems table.

Output:

NAME	CONTACT_NUMBER	MENU_ITEM_NAME	AVAILABILITY
Restaurant A	9876543210	Item6	1
Restaurant A	9876543210	Item7	0
Restaurant A	9876543210	Item17	0
Restaurant A	9876543210	Item30	0
Restaurant A	9876543210	Item43	0
Restaurant B	1234567890	Item18	0
Restaurant B	1234567890	Item35	0
Restaurant B	1234567890	Item40	0
Restaurant B	1234567890	Item45	1
Restaurant C	5555555555	Item5	0
Restaurant C	5555555555	Item29	1
Restaurant C	5555555555	Item34	0
Restaurant C	5555555555	Item47	0
Restaurant C	5555555555	Item50	0
Restaurant D	7777777777	Item15	0
Restaurant D	7777777777	Item44	0
Restaurant D	7777777777	Item49	0
Restaurant E	8888888888	Item20	1
Restaurant E	8888888888	Item24	1
Restaurant E	8888888888	Item26	0
Restaurant E	8888888888	Item39	1
Restaurant F	2222222222	Item16	0
Restaurant F	2222222222	Item27	0
Restaurant F	2222222222	Item36	1
Restaurant G	3333333333	Item3	0
Restaurant G	3333333333	Item10	0
Restaurant G	3333333333	Item31	1
Restaurant G	3333333333	Item37	1
Restaurant G	3333333333	Item48	1
Restaurant H	4444444444	Item4	1
Restaurant H	4444444444	Item8	0
Restaurant H	4444444444	Item13	0
Restaurant I	6666666666	Item25	0
Restaurant I	6666666666	Item38	1
Restaurant J	9999999999	Item14	0
Restaurant J	9999999999	Item19	1
Restaurant J	9999999999	Item22	0
Restaurant K	1111111111	Item28	0
Restaurant K	1111111111	Item32	1
Restaurant K	1111111111	Item41	1
Restaurant K	1111111111	Item42	0
Restaurant L	4444444444	Item1	0
Restaurant L	4444444444	Item2	1
Restaurant L	4444444444	Item9	0
Restaurant L	4444444444	Item11	1
Restaurant L	4444444444	Item12	1
Restaurant L	4444444444	Item21	1
Restaurant L	4444444444	Item23	1
Restaurant L	4444444444	Item33	0
Restaurant L	4444444444	Item46	1