



Practice SQL JOIN Queries

This page provides exercises and solutions to help you practice SQL JOIN queries. These exercises are based on the [ACDB database](#), and may be performed [online](#) or by running the sample schema scripts on your local database server. For additional exercises in other subjects, use this [link](#).

Inner JOIN

1. Customers and internet packages (*Customers* & *Packages* tables) –
 1. Write a query to display first name, last name, package number and internet speed for all customers.
 2. Write a query to display first name, last name, package number and internet speed for all customers whose package number equals 22 or 27. Order the query in ascending order by last name.
2. Internet packages and sectors –
 1. Display the package number, internet speed, monthly payment and sector name for all packages (*Packages* and *Sectors* tables).
 2. Display the customer name, package number, internet speed, monthly payment and sector name for all customers (*Customers*, *Packages* and *Sectors* tables).
 3. Display the customer name, package number, internet speed, monthly payment and sector name for all customers in the business sector (*Customers*, *Packages* and *Sectors* tables).
3. Display the last name, first name, join date, package number, internet speed and sector name for all customers in the private sector who joined the company in the year 2006.

Non Equi Join

1. Display the package number, internet speed, monthly payment and

package grade for all packages (*Packages* and *Pack_Grades* tables).

Outer Join

1. Customers and internet packages (*Customers* and *Packages* tables)

1. Display the first name, last name, internet speed and monthly payment for all customers. Use INNER JOIN to solve this exercise.
2. Modify last query to display all customers, including those without any internet package.
3. Modify last query to display all packages, including those without any customers.
4. Modify last query to display all packages and all customers.

Self Join

1. Display the last name, first name and package number for all customers who have the same package number as customer named 'Amado Taylor' (*Customers* table).
2. Display the last name, first name and monthly discount for all customers whose monthly discount is lower than the monthly discount of employee number 103 (*Customers* table).
3. Display the package number and internet speed for all packages whose internet speed is equal to the internet speed of package number 10 (*Packages* table).

Solutions – SQL Server

These solutions apply to SQL Server, for solutions that apply to Oracle click [here](#).

```
01  -- 1
02  -- A
03  SELECT cust.last_name , cust.first_name , cust.pack_id , pack
04  FROM customers cust JOIN packages pack
05  ON      cust.pack_id = pack.pack_id
06
```

```
07  -- B
08  SELECT cust.last_name , cust.first_name , cust.pack_id , pack
09  FROM customers cust JOIN packages pack
10  ON      cust.pack_id = pack.pack_id
11  WHERE cust.pack_id IN (27, 22)
12  ORDER BY cust.last_name
13
14  -- 2
15  -- A
16  SELECT pack.pack_id , pack.speed, pack.monthly_payment, sect
17  FROM packages pack JOIN sectors sect
18  ON      pack.sector_id = sect.sector_id
19
20  -- B
21  SELECT cust.last_name , cust.first_name , pack.pack_id , pack
22  FROM packages pack JOIN sectors sect
23  ON      pack.sector_id = sect.sector_id
24          JOIN customers cust
25  ON      cust.pack_id = pack.pack_id
26
27  -- C
28  SELECT cust.last_name , cust.first_name , pack.pack_id , pack
29  FROM packages pack JOIN sectors sect
30  ON      pack.sector_id = sect.sector_id
31          JOIN customers cust
32  ON      cust.pack_id = pack.pack_id
33  WHERE sect.sector_name = 'Business'
34
35  -- 3
36  SELECT cust.last_name , cust.first_name , cust.join_date, pack
37  FROM packages pack JOIN sectors sect
38  ON      pack.sector_id = sect.sector_id
39          JOIN customers cust
40  ON      cust.pack_id = pack.pack_id
41  WHERE sect.sector_name = 'Private' AND year(cust.join_date) >= 2017
42
43  -- 4
44  SELECT pack.pack_id , pack.speed, pack.monthly_payment , grade
45  FROM packages pack JOIN pack_grades grd
```

```
46  ON      pack.monthly_payment BETWEEN grd.min_price AND grd.m
47
48  -- 5
49  -- A
50  SELECT cust.last_name , cust.first_name , pack.speed , pack
51  FROM customers cust JOIN packages pack
52  ON      cust.pack_id = pack.pack_id
53
54  -- B
55  SELECT cust.last_name , cust.first_name , pack.speed , pack
56  FROM customers cust LEFT OUTER JOIN packages pack
57  ON      cust.pack_id = pack.pack_id
58
59  -- C
60  SELECT cust.last_name , cust.first_name , pack.speed , pack
61  FROM customers cust RIGHT OUTER JOIN packages pack
62  ON      cust.pack_id = pack.pack_id
63
64  -- D
65  SELECT cust.last_name , cust.first_name , pack.speed , pack
66  FROM customers cust FULL OUTER JOIN packages pack
67  ON      cust.pack_id = pack.pack_id
68
69  -- 6
70  SELECT cust1.last_name , cust1.first_name , cust1.pack_id
71  FROM customers cust1 JOIN customers cust2
72  ON cust2.last_name = 'Taylor' AND cust2.first_name = 'Amado'
73  AND      cust2.pack_id = cust1.pack_id
74
75  -- 7
76  SELECT cust1.last_name , cust1.first_name , cust1.pack_id , (
77  FROM customers cust1 JOIN customers cust2
78  ON cust2.Customer_Id = 103
79  AND cust1.monthly_discount < cust2.monthly_discount
80
81  -- 8
82  SELECT pack1.pack_id , pack2.speed
83  FROM      packages pack1 JOIN packages pack2
84  ON      pack2.pack_id = 10
```

85 | AND pack1.speed = pack2.speed

Solutions – Oracle

```
01 | -- 1
02 | -- A
03 | SELECT cust.last_name , cust.first_name , cust.pack_id , pack
04 | FROM customers cust , packages pack
05 | WHERE      cust.pack_id = pack.pack_id
06 |
07 | -- B
08 | SELECT cust.last_name , cust.first_name , cust.pack_id , pack
09 | FROM customers cust , packages pack
10 | WHERE      cust.pack_id = pack.pack_id
11 | AND cust.pack_id IN (27, 22)
12 | ORDER BY cust.last_name
13 |
14 | -- 2
15 | -- A
16 | SELECT pack.pack_id , pack.speed, pack.monthly_payment, sect
17 | FROM packages pack , sectors sect
18 | WHERE      pack.sector_id = sect.sector_id
19 |
20 | -- B
21 | SELECT cust.last_name , cust.first_name , pack.pack_id , pack
22 | FROM packages pack , sectors sect , customers cust
23 | WHERE      pack.sector_id = sect.sector_id
24 | AND      cust.pack_id = pack.pack_id
25 |
26 | -- C
27 | SELECT cust.last_name , cust.first_name , pack.pack_id , pack
28 | FROM packages pack , sectors sect , customers cust
29 | WHERE      pack.sector_id = sect.sector_id
30 | AND      cust.pack_id = pack.pack_id
31 | AND      sect.sector_name = 'Business'
32 |
33 | -- 3
34 | SELECT cust.last_name , cust.first_name , cust.join_date, pack
35 | FROM packages pack , sectors sect , customers cust
```

```
36 WHERE      pack.sector_id = sect.sector_id
37 AND        cust.pack_id = pack.pack_id
38 AND sect.sector_name = 'Private'
39 AND EXTRACT(YEAR FROM cust.join_date) = 2006
40
41 -- 4
42 SELECT pack.pack_id , pack.speed, pack.monthly_payment , gr
43 FROM packages pack , pack_grades grd
44 WHERE      pack.monthly_payment BETWEEN grd.min_price AND gr
45
46 -- 5
47 -- A
48 SELECT cust.last_name , cust.first_name , pack.speed , pack
49 FROM customers cust , packages pack
50 WHERE      cust.pack_id = pack.pack_id
51
52 -- B
53 SELECT cust.last_name , cust.first_name , pack.speed , pack
54 FROM customers cust , packages pack
55 WHERE      cust.pack_id = pack.pack_id (+)
56
57 -- C
58 SELECT cust.last_name , cust.first_name , pack.speed , pack
59 FROM customers cust , packages pack
60 WHERE      cust.pack_id (+)= pack.pack_id
61
62 -- D
63 SELECT cust.last_name , cust.first_name , pack.speed , pack
64 FROM customers cust , packages pack
65 WHERE      cust.pack_id (+) = pack.pack_id
66 UNION
67 SELECT cust.last_name , cust.first_name , pack.speed , pack
68 FROM customers cust , packages pack
69 WHERE      cust.pack_id = pack.pack_id (+)
70
71 -- 6
72 SELECT cust1.last_name , cust1.first_name , cust1.pack_id
73 FROM customers cust1 , customers cust2
74 WHERE cust2.last_name = 'Taylor' AND cust2.first_name = 'Ama
AND      cust2.pack_id = cust1.pack_id
```

```
75
76 -- 7
77 SELECT cust1.last_name , cust1.first_name , cust1.pack_id , (
78 FROM customers cust1 , customers cust2
79 WHERE cust2.Customer_Id = 103
80 AND cust1.monthly_discount < cust2.monthly_discount
81
82 -- 8
83 SELECT pack1.pack_id , pack2.speed
84 FROM packages pack1 , packages pack2
85 WHERE pack2.pack_id = 10
86 AND pack1.speed = pack2.speed
```

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