


# SQL: Advanced Queries

---

- Chapter 9 in Murach text
- Conditional functions in SQL
  - CASE()
  - IF()
  - IFNULL()
  - COALESCE()

# CASE function

```
5 • SELECT invoice_number, terms_id,  
6     CASE WHEN terms_id = 1 THEN 'Net due 10 days'  
7         WHEN terms_id = 2 THEN 'Net due 20 days'  
8         WHEN terms_id = 3 THEN 'Net due 30 days'  
9         WHEN terms_id = 4 THEN 'Net due 60 days'  
10        WHEN terms_id = 5 THEN 'Net due 90 days'  
11     END AS terms  
12 FROM invoices  
13 ;
```

Result Grid |   Filter Rows:  | Export:  | Wrap Cell Content: 

invoice_number	terms_id	terms
989319-457	3	Net due 30 days
263253241	3	Net due 30 days
963253234	3	Net due 30 days
2-000-2993	3	Net due 30 days
963253251	3	Net due 30 days

```
15 • SELECT invoice_number, terms_id,  
16     CASE terms_id  
17         WHEN 1 THEN 'Net due 10 days'  
18         WHEN 2 THEN 'Net due 20 days'  
19         WHEN 3 THEN 'Net due 30 days'  
20         WHEN 4 THEN 'Net due 60 days'  
21         WHEN 5 THEN 'Net due 90 days'  
22     END AS terms  
23 FROM invoices
```

Result Grid |   Filter Rows:  | Export:  | W

invoice_number	terms_id	terms
989319-457	3	Net due 30 days
263253241	3	Net due 30 days
963253234	3	Net due 30 days
2-000-2993	3	Net due 30 days
963253251	3	Net due 30 days

# Searched CASE function

```
29
30 • SELECT invoice_number, invoice_total, invoice_date, invoice_due_date,
31        DATEDIFF(CURDATE(), invoice_due_date) AS days_past_due,
32
33        CASE WHEN DATEDIFF(CURDATE(), invoice_due_date) >1180 THEN "Over 1180 days past due"
34              WHEN DATEDIFF(CURDATE(), invoice_due_date) >0 AND DATEDIFF(CURDATE(), invoice_due_date) <=1180
35              THEN "1 to 1180 days past due"
36              ELSE "current"
37        END AS invoice_status
38
39 FROM invoices
40 WHERE invoice_total - payment_total - credit_total >0;
```

	invoice_number	invoice_total	invoice_date	invoice_due_date	days_past_due	invoice_status
	39104	85.31	2018-07-10	2018-08-09	1195	Over 1180 days past due
	963253264	52.25	2018-07-18	2018-08-17	1187	Over 1180 days past due
	31361833	579.42	2018-07-21	2018-08-10	1194	Over 1180 days past due
	263253268	59.97	2018-07-21	2018-08-20	1184	Over 1180 days past due
	263253270	67.92	2018-07-22	2018-08-21	1183	Over 1180 days past due
	263253273	30.75	2018-07-22	2018-08-21	1183	Over 1180 days past due
	P-0608	20551.18	2018-07-23	2018-08-22	1182	Over 1180 days past due
	9982771	503.20	2018-07-24	2018-08-23	1181	Over 1180 days past due
	134116	90.36	2018-07-28	2018-08-17	1187	Over 1180 days past due
	0-2436	10976.06	2018-07-31	2018-08-30	1174	1 to 1180 days past due
	547480102	224.00	2018-08-01	2018-08-31	1173	1 to 1180 days past due

# IF function

```
38 • SELECT vendor_name, vendor_city,  
39       IF(vendor_city = "Fresno", "Yes", "No") AS city_fresno  
40 FROM vendors;
```

Result Grid |   Filter Rows:  | Export:  | Wrap Cell Content: 

vendor_name	vendor_city	city_fresno
US Postal Service	Madison	No
National Information Data Ctr	Washington	No
Register of Copyrights	Washington	No
Jobtrak	Los Angeles	No
Newbridge Book Clubs	Washington	No
California Chamber Of Commerce	Sacramento	No
Towne Advertiser's Mailing Svcs	Santa Ana	No
BFI Industries	Fresno	Yes
Pacific Gas & Electric	San Francisco	No
Robbins Mobile Lock And Key	Fresno	Yes
Bill Marvin Electric Inc	Fresno	Yes
City Of Fresno	Fresno	Yes

# IFNULL and COALESCE functions

```
43 • SELECT invoice_number, invoice_date, payment_date,  
44       IFNULL(payment_date, "No Payment") AS new_payment_date  
45 from invoices;  
46
```

invoice_number	invoice_date	payment_date	new_payment_date
963253264	2014-07-18	NULL	No Payment
C73-24	2014-07-19	2014-08-13	2014-08-13
P-0259	2014-07-19	2014-08-20	2014-08-20
97-1024A	2014-07-20	2014-08-07	2014-08-07
31361833	2014-07-21	NULL	No Payment
263253268	2014-07-21	NULL	No Payment
263253270	2014-07-22	NULL	No Payment
263253273	2014-07-22	NULL	No Payment
P-0608	2014-07-23	NULL	No Payment
989319-417	2014-07-23	2014-08-24	2014-08-24
263253243	2014-07-23	2014-08-24	2014-08-24
9982771	2014-07-24	NULL	No Payment
0-2060	2014-07-24	2014-08-27	2014-08-27
989319-447	2014-07-24	2014-08-19	2014-08-19
963253240	2014-07-24	2014-08-23	2014-08-23




```
47 • SELECT invoice_number, invoice_date, payment_date,  
48       COALESCE(payment_date, "No Payment") AS new_payment_date  
49 from invoices;
```

invoice_number	invoice_date	payment_date	new_payment_date
963253239	2014-07-08	2014-08-11	2014-08-11
39104	2014-07-10	NULL	No Payment
963253252	2014-07-12	2014-08-11	2014-08-11
111-92R-10095	2014-07-15	2014-08-06	2014-08-06
111897	2014-07-15	2014-08-14	2014-08-14
4-327-7357	2014-07-16	2014-08-11	2014-08-11
963253264	2014-07-18	NULL	No Payment
C73-24	2014-07-19	2014-08-13	2014-08-13
P-0259	2014-07-19	2014-08-20	2014-08-20
97-1024A	2014-07-20	2014-08-07	2014-08-07
31361833	2014-07-21	NULL	No Payment
263253268	2014-07-21	NULL	No Payment
263253270	2014-07-22	NULL	No Payment
263253273	2014-07-22	NULL	No Payment
P-0608	2014-07-23	NULL	No Payment
989319-417	2014-07-23	2014-08-24	2014-08-24
263253243	2014-07-23	2014-08-24	2014-08-24
9982771	2014-07-24	NULL	No Payment

# COALESCE function

city	state	country
Springfield	IL	USA
Las Vegas	NV	USA
NULL	PA	USA
NULL	NULL	USA
New York City	NULL	USA
NULL	NULL	NULL
NULL	AZ	USA
NULL	WI	USA

```
20 • SELECT city, state, country,  
21      COALESCE(city, state, country, "none")  
22 FROM test;
```

Result Grid |   Filter Rows:  | Export:  | Wrap Cell

city	state	country	COALESCE(city, state, country, "none")
Springfield	IL	USA	Springfield
Las Vegas	NV	USA	Las Vegas
NULL	PA	USA	PA
NULL	NULL	USA	USA
New York City	NULL	USA	New York City
NULL	NULL	NULL	none
NULL	AZ	USA	AZ
NULL	WI	USA	WI