

1. Concatenate *first* and *last name* as *full_name*.

```
SQL Shell (psql)
List of databases
Name | Owner | Encoding | Locale Provider | Collate | Ctype | Locale | ICU Rules | Access privileges
-----+-----+-----+-----+-----+-----+-----+-----+-----+
Bank_Management_DB | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
auca | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
auca_student_management | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
bank | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
bank management | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
bank_management_DB | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
bank management_db | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
citizen db | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
employment | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
hr | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
postgres | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
public | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
stock management | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
student | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
student_db | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
tax_administration_project | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
template0 | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
template1 | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
venu | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252 | 
(19 rows)

postgres=# \c projects;
You are now connected to database "projects" as user "postgres".
projects=# SELECT CONCAT(first_name,' ',last_name,'',2851b)AS fullname FROM employee;
fullname
-----
Carol Adams28518
David Lee28518
Eve Martins28518
Frank Jackson28518
Grace Brown28518
Hank Wilson28518
Ivy Clark28518
Jake White28518
Alice Johnson28518
Bob Smith28518
(10 rows)

projects#
```

2. Convert all employee names to lowercase.

```
SQL Shell (psql)
postgres=# \c projects
You are now connected to database "projects" as user "postgres".
projects=# SELECT CONCAT(first_name, ' ', last_name,'_28518)AS Fullname FROM employee;
   fullname
-----
Carol Adams28518
David Lee28518
Eve Martins28518
Frank Green28518
Grace Brown28518
Hank Wilson28518
Ivy Clark28518
Jake White28518
Alice Johnson28518
Bob Smith28518
(10 rows)

projects=# select lower(first_name)as firstname28518,lower (last_name)as lastname28518 from employee;
   firstname28518    lastname28518
-----
carol           | adams
david          | lee
eve            | martin
frank          | green
grace          | brown
hank            | wilson
ivy             | clark
jake            | white
alice           | johnson
bob             | smith
(10 rows)

projects=#

```

3. Extract first 3 letters of the employee's first name.

```

SQL Shell (pgsql)
postgres=# \c projects;
You are now connected to database "projects" as user "postgres".
projects=# SELECT CONCAT(first_name, ' ', last_name) AS fullname FROM employee;
-----
Carol Adams28518
David Lee28518
Eve Martins28518
Frank Green28518
Grace Brown28518
Hank Wilson28518
Ivy Clark28518
Jake White28518
Alice Johnson28518
Bob Smith28518
(10 rows)

projects=# select lower(first_name) as firstname28518,lower (last_name) as lastname28518 from employee;
firstname28518 | lastname28518
-----
carol           | adams
david          | lee
eve            | martins
frank           | green
grace           | brown
hank            | wilson
ivy             | clark
jake            | white
alice           | johnson
bob             | smith
(10 rows)

projects=# select substring(first_name,1,3) as smallname28518 from employee;
smallname28518
-----
Car
Dav
Eve
Fra
Gra
Han
Ivy
JAK
Ali
Bob
(10 rows)

projects=#

```

4. Replace '@company.com' in email with '@org.com'.

```

SQL Shell (pgsql)
(10 rows)

projects=# select lower(first_name) as firstname28518,lower (last_name) as lastname28518 from employee;
firstname28518 | lastname28518
-----
carol           | adams
david          | lee
eve            | martins
frank           | green
grace           | brown
hank            | wilson
ivy             | clark
jake            | white
alice           | johnson
bob             | smith
(10 rows)

projects=# select substring(first_name,1,3) as smallname28518 from employee;
smallname28518
-----
Car
Dav
Eve
Fra
Gra
Han
Ivy
JAK
Ali
Bob
(10 rows)

projects=# select replace(email, '@company.com','@org.com') as updatedemail28518 from employee;
updatedemail28518
-----
carol.adams@org.com
david.lee@org.com
eve.martins@org.com
frank.green@org.com
grace.brown@org.com
hank.wilson@org.com
ivy.clark@org.com
jake.white@org.com
alice.johnson@org.com
bob.smith@org.com
(10 rows)

projects=#

```

5. Trim spaces from a padded string.

```
SQL Shell (pgsql)
(10 rows)

projects=# select substring(first_name,1,3) as smallname28518 from employee;
smallname28518
-----
Car
Dav
Eve
Fra
Gra
Han
Ivy
Jak
Ali
Bob
(10 rows)

projects=# select replace(email, '@company.com','@org.com') as updatedemail28518 from employee;
updatedemail28518
-----
carol.admin@org.com
david.lieutenant@org.com
eve.martin@org.com
frank.green@org.com
grace.brown@org.com
hank.wilson@org.com
ivy.clark@org.com
jake.white@org.com
alice.johnson@org.com
bob.smith@org.com
(10 rows)

projects=# select trim(first_name) ||' ' ||'ID:28518' as trimmedname28518 from employee;
trimmedname28518
-----
Carol ID:28518
David ID:28518
Eve ID:28518
Frank ID:28518
Grace ID:28518
Hank ID:28518
Ivy ID:28518
Jake ID:28518
Alice ID:28518
Bob ID:28518
(10 rows)

projects=#

```

6. Count characters in an employee's full name.

```
SQL Shell (pgsql)
alice.johnson@org.com
bob.smith@org.com
(10 rows)

projects=# select trim(first_name) ||' ' ||'ID:28518' as trimmedname28518 from employee;
trimmedname28518
-----
Carol ID:28518
David ID:28518
Eve ID:28518
Frank ID:28518
Grace ID:28518
Hank ID:28518
Ivy ID:28518
Jake ID:28518
Alice ID:28518
Bob ID:28518
(10 rows)

projects=# select length(concat('first_name','last_name')) as fullname28518 from employee;
fullname28518
-----
19
19
19
19
19
19
19
19
19
19
(10 rows)

projects=#

```

7. Find position of '@' in email using INSTR() / CHARINDEX().

```
SQL Shell (pgsql)
(10 rows)

projects=# select trim(first_name) ||' ' ||'ID:28518' as trimmedname28518;
-----
Carol ID:28518
David ID:28518
Eve ID:28518
Frank ID:28518
Grace ID:28518
Hank ID:28518
Ivy ID:28518
Jake ID:28518
Alice ID:28518
Bob ID:28518
(10 rows)

projects=# select length(concat('first_name','last_name')) as fullname28518 from employee;
fullname28518
-----
19
19
19
19
19
19
19
19
19
19
(10 rows)

projects=# select position('@' in email) as position28518 from employee;
position28518
-----
12
10
12
12
12
12
10
11
14
10
(10 rows)

projects=#

```

8. Add 'Mr.' or 'Ms.' before names based on gender (assume gender exists).

```
SQL Shell (pgsql)
(10 rows)

projects=# select length(concat('first_name','last_name')) as fullname28518 from employee;
fullname28518
-----
19
19
19
19
19
19
19
19
19
19
(10 rows)

projects=# select position('@' in email) as position28518 from employee;
position28518
-----
12
10
12
12
12
12
10
11
14
10
(10 rows)

projects=# SELECT UPPER(project_name) AS projectupper28518 FROM project;
projectupper28518
-----
HR REVAMP
FINANCE AUTOMATION
IT INFRASTRUCTURE UPGRADE
MARKETING BLITZ 2025
LEGAL COMPLIANCE
CUSTOMER PORTAL
SALES BOOSTER
R&D PILOT
PROCUREMENT TRACKER
OPERATIONS STREAMLINE
(10 rows)

projects=#

```

9. Format project names to uppercase.

```
SQL Shell (pgsql)
(10 rows)

projects=# select position('@' in email) as position28518 from employee;
-----+
 12
 10
 12
 12
 12
 12
 10
 11
 14
 10
(10 rows)

projects=# SELECT UPPER(project_name) AS projectupper28518 FROM project;
-----+
HR REVAMP
FINANCE AUTOMATION
IT INFRASTRUCTURE UPGRADE
MARKETING BLITZ 2025
LEGAL COMPLIANCE
CUSTOMER PORTAL
SALES BOOSTER
R&D PILOT
PROCUREMENT TRACKER
OPERATIONS STREAMLINE
(10 rows)

projects=# SELECT REPLACE(project_name, '-', '') AS projectclean28518 FROM project;
-----+
HR Revamp
Finance Automation
IT Infrastructure Upgrade
Marketing Blitz 2025
Legal Compliance
Customer Portal
Sales Booster
R&D Pilot
Procurement Tracker
Operations Streamline
(10 rows)

projects=#

```

10. Remove any dashes from project names.

```
SQL Shell (pgsql)
(10 rows)

projects=# SELECT UPPER(project_name) AS projectupper28518 FROM project;
-----+
HR REVAMP
FINANCE AUTOMATION
IT INFRASTRUCTURE UPGRADE
MARKETING BLITZ 2025
LEGAL COMPLIANCE
CUSTOMER PORTAL
SALES BOOSTER
R&D PILOT
PROCUREMENT TRACKER
OPERATIONS STREAMLINE
(10 rows)

projects=# SELECT REPLACE(project_name, '-', '') AS projectclean28518 FROM project;
-----+
HR Revamp
Finance Automation
IT Infrastructure Upgrade
Marketing Blitz 2025
Legal Compliance
Customer Portal
Sales Booster
R&D Pilot
Procurement Tracker
Operations Streamline
(10 rows)

projects=# SELECT CONCAT(first_name,'',last_name,'',department_id) AS label28518 FROM employee;
-----+
CarolAdams2
DavidLee4
EveMartins3
FrankGreen8
GraceBrown5
HelenWilson6
IvyClark9
JakeWhite7
AliceJohnson1
BobSmith3
(10 rows)

projects=#

```

11. Create a label like “Emp: John Doe (HR)”.

```

SQL Shell (pgsql)
HR Revamp
Finance Automation
IT Infrastructure Upgrade
Marketing Blitz 2025
Legal Compliance
Customer Portal
Sales Booster
R&D Pilot
Procurement Tracker
Operations Streamline
(10 rows)

projects=# SELECT CONCAT(first_name,'',last_name,'',department_id) AS label28518 FROM employee;
label28518
-----
CarolAdams2
DavidLee4
EveMartins3
FrankGreen8
GraceBrown5
HankWilson6
IvyClark9
JakeWhite7
AliceJohnson1
BobSmith3
(10 rows)

projects=# SELECT CONCAT('Emp: ', first_name, '', last_name, '(', department_id, ')') AS employeeLabel28518
projects=# SELECT CONCAT('Emp: ', first_name, '', last_name, '(', department_id, ')') AS employeeLabel28518FROM employee;
ERROR: syntax error at or near "SELECT"
LINE 3: SELECT CONCAT('Emp: ', first_name, '', last_name, '(', dep...
^
projects=# SELECT CONCAT('Emp: ', first_name, '', last_name, '(', department_id, ')') AS employeeLabel2851 from employee;
employeeLabel2851
-----
Emp: Carol Adams (2)
Emp: David Lee (4)
Emp: Eve Martins (3)
Emp: Frank Green (8)
Emp: Grace Brown (5)
Emp: Hank Wilson (6)
Emp: Ivy Clark (9)
Emp: Jake White (7)
Emp: Alice Johnson (1)
Emp: Bob Smith (3)
(10 rows)

projects=#

```

12. Check email length for each employee.

```

SQL Shell (pgsql)
CarolAdams2
DavidLee4
EveMartins3
FrankGreen8
GraceBrown5
HankWilson6
IvyClark9
JakeWhite7
AliceJohnson1
BobSmith3
(10 rows)

projects=# SELECT LENGTH(email) AS emailLength28518 FROM employee;
emailLength28518
-----
23
21
23
23
23
23
21
22
25
21
(10 rows)

projects=#

```

13. Extract last name only from email (before @).

```

SQL Shell (pgsql)
ERROR: syntax error at or near "SELECT"
LINE 3: SELECT CONCAT('Emp: ', first_name, ' ', last_name, '(', department_id, ')') AS employeeLabel2851 from employee;
                                                ^
projects=# SELECT CONCAT('Emp: ', first_name, ' ', last_name, '(', department_id, ')') AS employeeLabel2851 from employee;
                                                ^
-----+
Emp: Carol Adams (2)
Emp: David Lee (4)
Emp: Eve Martins (3)
Emp: Frank Green (8)
Emp: Grace Brown (5)
Emp: Hank Wilson (6)
Emp: Ivy Clark (9)
Emp: Jake White (7)
Emp: Alice Johnson (1)
Emp: Bob Smith (1)
(10 rows)

projects=# SELECT LENGTH(email) AS emailLength28518 FROM employee;
emailLength28518
-----
23
21
23
23
23
23
23
21
22
25
21
(10 rows)

projects=# SELECT SPLIT_PART(email, '@', 1) AS emailName28518 FROM employee;
emailName28518
-----
carol.adams
david.lee
eve.martins
frank.green
grace.brown
hank.wilson
ivy.clark
jake.white
alice.johnson
bob.smith
(10 rows)

projects=#

```

14. Format: “LASTNAME, Firstname” using UPPER and CONCAT.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT LENGTH(email) AS emailLength28518 FROM employee;
emailLength28518
-----
23
21
23
23
23
23
23
21
22
25
21
(10 rows)

projects=# SELECT SPLIT_PART(email, '@', 1) AS emailName28518 FROM employee;
emailName28518
-----
carol.adams
david.lee
eve.martins
frank.green
grace.brown
hank.wilson
ivy.clark
jake.white
alice.johnson
bob.smith
(10 rows)

projects=# SELECT CONCAT(UPPER(last_name), ' ', INITCAP(first_name)) AS formattedName28518 FROM employee;
formattedName28518
-----
ADAMS, Carol
LEE, David
MARTINS, Eve
GREEN, Frank
BROWN, Grace
WILSON, Hank
CLARK, Ivy
WHITE, Jake
JOHNSON, Alice
SMITH, Bob
(10 rows)

projects=#

```

15. Add “(Active)” next to employee names who have current projects.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT SPLIT_PART(email, '@', 1) AS emailname28518 FROM employee;
-----+
carol.adams
david.lee
eve.martins
frank.green
grace.brown
hank.wilson
ivy.clark
jake.white
alice.johnson
bob.smith
(10 rows)

projects=# SELECT CONCAT(UPPER(last_name), ' ', INITCAP(first_name)) AS formattedname28518 FROM employee;
-----+
ADAMS, Carol
LEE, David
MARTINS, Eve
GREEN, Frank
BROWN, Grace
WILSON, Hank
CLARK, Ivy
WHITE, Jake
JOHNSON, Alice
SMITH, Bob
(10 rows)

projects=# SELECT project_id,project_name,start_date,end_date,CASE WHEN end_date >= CURRENT_DATE THEN 'Active'ELSE 'active'END AS status28518 FROM project;
-----+
201 | HR Revamp          | 2023-01-01 | 2023-12-31 | active
202 | Finance Automation | 2022-05-15 | 2023-04-30 | active
203 | IT Infrastructure Upgrade | 2024-01-01 |           |
204 | Marketing Blitz 2025 | 2025-02-01 | 2025-06-30 | active
205 | Legal Compliance    | 2023-07-10 | 2024-01-10 | active
206 | Customer Portal     | 2021-08-01 | 2022-10-31 | active
207 | Sales Booster        | 2022-04-01 | 2023-03-31 | active
208 | R&D Pilot            | 2025-01-01 |           |
209 | Procurement Tracker | 2024-03-15 | 2024-11-15 | active
210 | Operations Streamline | 2022-09-01 | 2023-09-01 | active
(10 rows)

projects=#

```

16. Round salary to the nearest whole number.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT CONCAT(UPPER(last_name), ' ', INITCAP(first_name)) AS formattedname28518 FROM employee;
-----+
ADAMS, Carol
LEE, David
MARTINS, Eve
GREEN, Frank
BROWN, Grace
WILSON, Hank
CLARK, Ivy
WHITE, Jake
JOHNSON, Alice
SMITH, Bob
(10 rows)

projects=# SELECT project_id,project_name,start_date,end_date,CASE WHEN end_date >= CURRENT_DATE THEN 'Active'ELSE 'active'END AS status28518 FROM project;
-----+
201 | HR Revamp          | 2023-01-01 | 2023-12-31 | active
202 | Finance Automation | 2022-05-15 | 2023-04-30 | active
203 | IT Infrastructure Upgrade | 2024-01-01 |           |
204 | Marketing Blitz 2025 | 2025-02-01 | 2025-06-30 | active
205 | Legal Compliance    | 2023-07-10 | 2024-01-10 | active
206 | Customer Portal     | 2021-11-01 | 2022-10-31 | active
207 | Sales Booster        | 2024-04-01 | 2023-03-31 | active
208 | R&D Pilot            | 2025-01-01 |           |
209 | Procurement Tracker | 2024-03-15 | 2024-11-15 | active
210 | Operations Streamline | 2022-09-01 | 2023-09-01 | active
(10 rows)

projects=# SELECT ROUND(salary) AS roundedsalary28518 FROM employee;
-----+
6700
3800
4000
6000
4900
3300
2700
3600
4500
5200
(10 rows)

projects=#

```

17. Show only even salaries using MOD.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT project_id,project_name,start_date,end_date,CASE WHEN end_date >= CURRENT_DATE THEN 'Active'ELSE 'inactive'END AS status28518 FROM project;
project_id | project_name | start_date | end_date | status28518
-----+-----+-----+-----+-----+
 281 | HR Revamp | 2023-01-01 | 2023-12-31 | active
 282 | Finance Automation | 2022-05-15 | 2023-04-30 | active
 283 | IT Infrastructure Upgrade | 2024-01-01 | 2025-06-30 | active
 284 | Marketing Blitz 2025 | 2025-02-01 | 2025-06-30 | active
 285 | Legal Compliance | 2023-07-10 | 2024-01-10 | active
 286 | Customer Portal | 2021-11-01 | 2022-10-31 | active
 287 | Sales Booster | 2022-04-01 | 2023-03-31 | active
 288 | R&D Pilot | 2025-01-01 | 2025-01-01 | active
 289 | Procurement Tracker | 2024-03-15 | 2024-11-15 | active
 210 | Operations Streamline | 2022-09-01 | 2023-09-01 | active
(10 rows)

projects=# SELECT ROUND(salary) AS roundedsalary28518 FROM employee;
roundedsalary28518
-----
 6700
3800
4800
6000
4900
3100
2700
3600
4500
5200
(10 rows)

projects=# SELECT * FROM employee WHERE MOD(ROUND(salary), 2) = 0;
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
 103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
 104 | David | Lee | david.lee@company.com | 2020-01-05 | 3800.00 | 4 |
 105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
 106 | Frank | Green | frank.green@company.com | 2017-07-01 | 4000.00 | 8 |
 107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4900.00 | 5 |
 108 | Hank | Wilson | hank.wilson@company.com | 2013-02-17 | 3100.00 | 6 |
 109 | Ivy | Clark | ivy.clark@company.com | 2021-08-30 | 2700.00 | 9 |
 110 | Jake | White | jake.white@company.com | 2022-05-19 | 3600.00 | 7 |
 101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
 102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 | 0788123456
(10 rows)

projects=#

```

18. Show difference between two project end/start dates using DATEDIFF.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT project_id,project_name,start_date,end_date,CASE WHEN end_date >= CURRENT_DATE THEN 'Active'ELSE 'inactive'END AS status28518 FROM project;
project_id | project_name | start_date | end_date | status28518
-----+-----+-----+-----+-----+
 282 | Finance Automation | 2022-05-15 | 2023-04-30 | active
 283 | IT Infrastructure Upgrade | 2024-01-01 | 2025-06-30 | active
 284 | Marketing Blitz 2025 | 2025-02-01 | 2025-06-30 | active
 285 | Legal Compliance | 2023-07-10 | 2024-01-10 | active
 286 | Customer Portal | 2021-11-01 | 2022-10-31 | active
 287 | Sales Booster | 2022-04-01 | 2023-03-31 | active
 288 | R&D Pilot | 2025-01-01 | 2025-01-01 | active
 289 | Procurement Tracker | 2024-03-15 | 2024-11-15 | active
 210 | Operations Streamline | 2022-09-01 | 2023-09-01 | active
(10 rows)

projects=# SELECT ROUND(salary) AS roundedsalary28518 FROM employee;
roundedsalary28518
-----
 6700
3800
4800
6000
4900
3100
2700
3600
4500
5200
(10 rows)

projects=# SELECT * FROM employee WHERE MOD(ROUND(salary), 2) = 0;
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
 103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
 104 | David | Lee | david.lee@company.com | 2020-01-05 | 3800.00 | 4 |
 105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
 106 | Frank | Green | frank.green@company.com | 2017-07-01 | 4000.00 | 8 |
 107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4900.00 | 5 |
 108 | Hank | Wilson | hank.wilson@company.com | 2013-02-17 | 3100.00 | 6 |
 109 | Ivy | Clark | ivy.clark@company.com | 2021-08-30 | 2700.00 | 9 |
 110 | Jake | White | jake.white@company.com | 2022-05-19 | 3600.00 | 7 |
 101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
 102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 | 0788123456
(10 rows)

projects=# SELECT DATE '2023-04-30' - DATE '2023-01-01' AS duration28518;
duration28518
-----
 119
(1 row)

projects=#

```

19. Show absolute difference in salaries between two employees.

```

SQL Shell (pgsql)
 208 | R&D Pilot      | 2025-01-01 | 2024-11-15 | active
 209 | Procurement Tracker | 2024-03-15 | 2024-11-15 | active
 210 | Operations Streamline | 2022-09-01 | 2023-09-01 | active
(10 rows)

projects=# SELECT ROUND(salary) AS roundedsalary28518 FROM employee;
roundedsalary28518
-----
6700
3800
4800
6000
4900
3100
2700
3600
4500
5200
(10 rows)

projects=# SELECT * FROM employee WHERE MOD(ROUND(salary), 2) = 0;
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----
103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
104 | David | Lee | david.lee@company.com | 2020-01-05 | 3800.00 | 4 |
105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
106 | Frank | Green | frank.green@company.com | 2017-07-08 | 6000.00 | 8 |
107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4900.00 | 5 |
108 | Hank | Wilson | hank.wilson@company.com | 2013-02-17 | 3100.00 | 6 |
109 | Ivy | Clark | ivy.clark@company.com | 2021-08-30 | 2700.00 | 9 |
110 | Jake | White | jake.white@company.com | 2022-05-19 | 3600.00 | 7 |
101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 | 0788123456
(10 rows)

projects=# SELECT DATE '2023-04-30' - DATE '2023-01-01' AS duration28518;
duration28518
-----
119
(1 row)

projects=# SELECT ABS(e1.salary - e2.salary) AS salarydifference28518 FROM employee e1, employee e2 WHERE e1.employee_id = 1 AND e2.employee_id = 2;
salarydifference28518
-----
(0 rows)

projects=#

```

20. Raise salary by 10% using POWER.

```

SQL Shell (pgsql)
 3600
4500
5200
(10 rows)

projects=# SELECT * FROM employee WHERE MOD(ROUND(salary), 2) = 0;
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----
103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
104 | David | Lee | david.lee@company.com | 2020-01-05 | 3800.00 | 4 |
105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
106 | Frank | Green | frank.green@company.com | 2017-07-08 | 6000.00 | 8 |
107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4900.00 | 5 |
108 | Hank | Wilson | hank.wilson@company.com | 2013-02-17 | 3100.00 | 6 |
109 | Ivy | Clark | ivy.clark@company.com | 2021-08-30 | 2700.00 | 9 |
110 | Jake | White | jake.white@company.com | 2022-05-19 | 3600.00 | 7 |
101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 | 0788123456
(10 rows)

projects=# SELECT DATE '2023-04-30' - DATE '2023-01-01' AS duration28518;
duration28518
-----
119
(1 row)

projects=# SELECT ABS(e1.salary - e2.salary) AS salarydifference28518 FROM employee e1, employee e2 WHERE e1.employee_id = 1 AND e2.employee_id = 2;
salarydifference28518
-----
(0 rows)

projects=# SELECT salary * POWER(0.1, 1) AS increasedsalary28518 FROM employee;
increasedsalary28518
-----
670.0000000000000
380.0000000000000
400.0000000000000
600.0000000000000
490.0000000000000
310.0000000000000
270.0000000000000
360.0000000000000
450.0000000000000
520.0000000000000
(10 rows)

projects=#

```

21. Generate a random number for testing IDs.

```

SQL Shell (pgsql)
  105 | Eve   | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 |      3 |
  106 | Frank | Green   | frank.green@company.com | 2014-08-01 | 6000.00 |      8 |
  107 | Lance | Brown   | lance.brown@company.com | 2014-11-02 | 3000.00 |      5 |
  108 | Hank  | Wilson  | hank.wilson@company.com | 2013-02-17 | 3100.00 |      6 |
  109 | Ivy   | Clark   | ivy.clark@company.com  | 2021-08-30 | 2700.00 |      9 |
  110 | Jake  | White   | jake.white@company.com | 2022-05-19 | 3600.00 |      7 |
  101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 |      1 |
  102 | Bob   | Smith   | bob.smith@company.com  | 2018-06-23 | 5200.00 |      3 |
(10 rows)

projects=# SELECT DATE '2023-04-30' - DATE '2023-01-01' AS duration28518;
duration28518
-----
           119
(1 row)

projects=# SELECT ABS(e1.salary - e2.salary) AS salarydifference28518 FROM employee e1, employee e2 WHERE e1.employee_id = 1 AND e2.employee_id = 2;
salarydifference28518
-----
(0 rows)

projects=# SELECT salary * POWER(0.1, 1) AS increasedsalary28518 FROM employee;
increasedsalary28518
-----
670.000000000000000000000000000000
380.000000000000000000000000000000
480.000000000000000000000000000000
600.000000000000000000000000000000
400.000000000000000000000000000000
310.000000000000000000000000000000
270.000000000000000000000000000000
360.000000000000000000000000000000
450.000000000000000000000000000000
520.000000000000000000000000000000
(10 rows)

projects=# SELECT FLOOR(RANDOM() * 9999 + 1000)::INT AS test_id FROM generate_series(1, 5);
test_id
-----
4843
8336
7547
2184
9429
(5 rows)

projects=#

```

22. Use CEIL and FLOOR on a floating salary.

```

SQL Shell (pgsql)
projects=# SELECT ABS(e1.salary - e2.salary) AS salarydifference28518 FROM employee e1, employee e2 WHERE e1.employee_id = 1 AND e2.employee_id = 2;
salarydifference28518
-----
(0 rows)

projects=# SELECT salary * POWER(0.1, 1) AS increasedsalary28518 FROM employee;
increasedsalary28518
-----
670.000000000000000000000000000000
380.000000000000000000000000000000
480.000000000000000000000000000000
600.000000000000000000000000000000
400.000000000000000000000000000000
310.000000000000000000000000000000
270.000000000000000000000000000000
360.000000000000000000000000000000
450.000000000000000000000000000000
520.000000000000000000000000000000
(10 rows)

projects=# SELECT FLOOR(RANDOM() * 9999 + 1000)::INT AS test_id FROM generate_series(1, 5);
test_id
-----
4843
8336
7547
2184
9429
(5 rows)

projects=# SELECT salary, CEIL(salary) AS ceiling28518, FLOOR(salary) AS floor28518 FROM employee;
salary  | ceiling28518 | floor28518
-----+
6700.00 |       6700 |    6700
3800.00 |       3800 |    3800
4000.00 |       4000 |    4000
6000.00 |       6000 |    6000
4900.00 |       4900 |    4900
3100.00 |       3100 |    3100
2700.00 |       2700 |    2700
3600.00 |       3600 |    3600
4500.00 |       4500 |    4500
5200.00 |       5200 |    5200
(10 rows)

projects=#

```

23. Use LENGTH() on phone numbers (assume column exists).

```
SQL Shell (psql)
aucu_student_management | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | +c/postgres
bank | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | +c/postgres-CTC/postgres
bank_management | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | -c/postgres
bank_management_DB | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | -c/postgres-CTC/postgres
bank_management_db | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | +c/postgres
citizen_db | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
employment | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
hr | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
postgres | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
projects | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
student | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
student_db | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
tax_administration_project | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
template0 | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
template1 | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
venu | postgres | UTF8 | libc | English_Rwanda.1252 | English_Rwanda.1252 | English_Rwanda.1252
(19 rows)

postgres=# \c projects
You are now connected to database "projects" as user "postgres".
projects=# \d
          List of relations
 Schema |   Name    | Type  | Owner
-----+-----+-----+-----+
 public | departments | table | postgres
 public | employee | table | postgres
 public | employee_projects | table | postgres
 public | project | table | postgres
(4 rows)

projects=# SELECT phone_number, LENGTH(phone_number) AS phonelength28518 FROM Employee;
 phone_number | phonelength28518
-----+-----+
 0788123456 |          10
 0788123456 |          10
(10 rows)

projects=#

```

24. Categorize salary: High/Medium/Low using CASE.

25. Count digits in salary amount.

```

SQL Shell (pgsql)
(4 rows)

projects=# SELECT phone_number, LENGTH(phone_number) AS phonelength28518 FROM Employee;
phone_number | phonelength28518
-----
0788123456 |          10
0788123456 |          10
(10 rows)

projects=# SELECT salary,CASE WHEN salary >= 6000 THEN 'High' WHEN salary >= 4000 THEN 'Medium' ELSE 'Low' END AS salarycategory28518 FROM employee;
salary | salarycategory28518
-----
6700.00 | High
3800.00 | Low
4800.00 | Medium
6800.00 | High
4900.00 | Medium
3100.00 | Low
2700.00 | Low
3600.00 | Low
4500.00 | Medium
5200.00 | Medium
(10 rows)

projects=# SELECT salary,LENGTH(REPLACE(salary::TEXT, '.', '')) AS digitcount28518 FROM employee;
salary | digitcount28518
-----
6700.00 |       6
3800.00 |       6
4800.00 |       6
6800.00 |       6
4900.00 |       6
3100.00 |       6
2700.00 |       6
3600.00 |       6
4500.00 |       6
5200.00 |       6
(10 rows)

projects=#

```

26. Show today's date using CURRENT_DATE.

```

SQL Shell (pgsql)
(4 rows)

projects=# SELECT phone_number, LENGTH(phone_number) AS phonelength28518 FROM Employee;
phone_number | phonelength28518
-----
0788123456 |          10
0788123456 |          10
(10 rows)

projects=# SELECT salary,CASE WHEN salary >= 6000 THEN 'High' WHEN salary >= 4000 THEN 'Medium' ELSE 'Low' END AS salarycategory28518 FROM employee;
salary | salarycategory28518
-----
6700.00 | High
3800.00 | Low
4800.00 | Medium
6800.00 | High
4900.00 | Medium
3100.00 | Low
2700.00 | Low
3600.00 | Low
4500.00 | Medium
5200.00 | Medium
(10 rows)

projects=# SELECT salary,LENGTH(REPLACE(salary::TEXT, '.', '')) AS digitcount28518 FROM employee;
salary | digitcount28518
-----
6700.00 |       6
3800.00 |       6
4800.00 |       6
6800.00 |       6
4900.00 |       6
3100.00 |       6
2700.00 |       6
3600.00 |       6
4500.00 |       6
5200.00 |       6
(10 rows)

projects=# SELECT CURRENT_DATE AS today;
today
-----
2025-08-04
(1 row)

projects=#

```

27. Calculate how many days an employee has worked.

```

SQL Shell (pgsql)
3800.00 | Low
4800.00 | Medium
6000.00 | High
4900.00 | Medium
3100.00 | Low
2700.00 | Low
3600.00 | Low
4500.00 | Medium
5200.00 | Medium
(10 rows)

projects=# SELECT salary, LENGTH(REPLACE(salary::TEXT, '.', '')) AS digitcount28518 FROM employee;
-----+
6700.00 | 6
3800.00 | 6
4800.00 | 6
6000.00 | 6
4900.00 | 6
3100.00 | 6
2700.00 | 6
3600.00 | 6
4500.00 | 6
5200.00 | 6
(10 rows)

projects=# SELECT CURRENT_DATE AS today;
-----+
2025-08-04
(1 row)

projects=# SELECT employee_id, first_name, last_name, CURRENT_DATE - hire_date AS daysworked28518 FROM employee;
-----+
103 | Carol | Adams | 4711
104 | David | Lee | 2038
105 | Eve | Martins | 2063
106 | Frank | Green | 2949
107 | Grace | Brown | 3928
108 | Hank | Wilson | 4551
109 | Ivy | Clark | 1435
110 | Jake | White | 1173
101 | Alice | Johnson | 3795
102 | Bob | Smith | 2599
(10 rows)

projects=#

```

28. Show employees hired in the current year.

```

SQL Shell (pgsql)
3800.00 | Low
4500.00 | Medium
5200.00 | Medium
(10 rows)

projects=# SELECT salary, LENGTH(REPLACE(salary::TEXT, '.', '')) AS digitcount28518 FROM employee;
-----+
6700.00 | 6
3800.00 | 6
4800.00 | 6
6000.00 | 6
4900.00 | 6
3100.00 | 6
2700.00 | 6
3600.00 | 6
4500.00 | 6
5200.00 | 6
(10 rows)

projects=# SELECT CURRENT_DATE AS today;
-----+
2025-08-04
(1 row)

projects=# SELECT employee_id, first_name, last_name, CURRENT_DATE - hire_date AS daysworked28518 FROM employee;
-----+
103 | Carol | Adams | 4711
104 | David | Lee | 2038
105 | Eve | Martins | 2063
106 | Frank | Green | 2949
107 | Grace | Brown | 3928
108 | Hank | Wilson | 4551
109 | Ivy | Clark | 1435
110 | Jake | White | 1173
101 | Alice | Johnson | 3795
102 | Bob | Smith | 2599
(10 rows)

projects=# SELECT * FROM employee WHERE EXTRACT(YEAR FROM hire_date) = EXTRACT(YEAR FROM CURRENT_DATE);
-----+
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+
(0 rows)

projects=#

```

29. Display current date and time using NOW().

```

SQL Shell (pgsql)
salary | digitcount28518
-----+
6700.00 | 6
3800.00 | 6
4800.00 | 6
6800.00 | 6
4900.00 | 6
3100.00 | 6
2700.00 | 6
3600.00 | 6
4500.00 | 6
5200.00 | 6
(10 rows)

projects=# SELECT CURRENT_DATE AS today;
today
-----
2025-08-04
(1 row)

projects=# SELECT employee_id, first_name, last_name, CURRENT_DATE - hire_date AS daysworked28518 FROM employee;
employee_id | first_name | last_name | daysworked28518
-----+
103 | Carol | Adams | 4711
104 | David | Lee | 2038
105 | Eve | Martins | 2063
106 | Frank | Green | 2949
107 | Grace | Brown | 3928
108 | Hank | Wilson | 4551
109 | Ivey | Clark | 1435
110 | Jake | White | 1173
101 | Alice | Johnson | 3795
102 | Bob | Smith | 2599
(10 rows)

projects=# SELECT * FROM employee WHERE EXTRACT(YEAR FROM hire_date) = EXTRACT(YEAR FROM CURRENT_DATE);
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone number
-----+
(0 rows)

projects=# SELECT NOW() AS currentdatetime28518;
currentdatetime28518
-----
2025-08-04 21:23:14.658583+03
(1 row)

projects=#

```

30. Extract the year, month, and day from hire_date.

```

SQL Shell (pgsql)
today
-----
2025-08-04
(1 row)

projects=# SELECT employee_id, first_name, last_name, CURRENT_DATE - hire_date AS daysworked28518 FROM employee;
employee_id | first_name | last_name | daysworked28518
-----+
103 | Carol | Adams | 4711
104 | David | Lee | 2038
105 | Eve | Martins | 2063
106 | Frank | Green | 2949
107 | Grace | Brown | 3928
108 | Hank | Wilson | 4551
109 | Ivey | Clark | 1435
110 | Jake | White | 1173
101 | Alice | Johnson | 3795
102 | Bob | Smith | 2599
(10 rows)

projects=# SELECT * FROM employee WHERE EXTRACT(YEAR FROM hire_date) = EXTRACT(YEAR FROM CURRENT_DATE);
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone number
-----+
(0 rows)

projects=# SELECT NOW() AS currentdatetime28518;
currentdatetime28518
-----
2025-08-04 21:23:14.658583+03
(1 row)

projects=# SELECT employee_id, hire_date,EXTRACT(YEAR FROM hire_date) AS hireyear28518,EXTRACT(MONTH FROM hire_date) AS hiremonth28518,EXTRACT(DAY FROM hire_date) AS hireday28518 FROM employee;
employee_id | hire_date | hireyear28518 | hiremonth28518 | hireday28518
-----+
103 | 2012-09-10 | 2012 | 9 | 10
104 | 2028-01-05 | 2028 | 1 | 5
105 | 2019-12-11 | 2019 | 12 | 11
106 | 2017-07-08 | 2017 | 7 | 8
107 | 2014-11-02 | 2014 | 11 | 2
108 | 2021-05-15 | 2021 | 5 | 15
109 | 2021-08-30 | 2021 | 8 | 30
110 | 2022-05-19 | 2022 | 5 | 19
101 | 2015-03-15 | 2015 | 3 | 15
102 | 2018-06-23 | 2018 | 6 | 23
(10 rows)

projects=#

```

31. Show employees hired before 2020.

```

SQL Shell (pgsql)
 107 | Grace | Brown | 3928
 108 | Hank | Johnson | 4041
 109 | Lucy | Clark | 1435
 110 | Jake | White | 1173
 101 | Alice | Johnson | 3795
 102 | Bob | Smith | 2599
(10 rows)

projects=# SELECT * FROM employee WHERE EXTRACT(YEAR FROM hire_date) = EXTRACT(YEAR FROM CURRENT_DATE);
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
(0 rows)

projects=# SELECT NOW() AS currentdatetime28518;
currentdatetime28518
-----
2025-08-04 21:23:14.658583+03
(1 row)

projects=# SELECT employee_id, hire_date,EXTRACT(YEAR FROM hire_date) AS hireyear28518,EXTRACT(MONTH FROM hire_date) AS hiremonth28518,EXTRACT(DAY FROM hire_date) AS hireday28518 FROM employee;
employee_id | hire_date | hireyear28518 | hiremonth28518 | hireday28518
-----+-----+-----+-----+-----+
 103 | 2012-09-10 | 2012 | 9 | 10
 104 | 2020-01-05 | 2020 | 1 | 5
 105 | 2019-12-11 | 2019 | 12 | 11
 106 | 2017-07-08 | 2017 | 7 | 8
 107 | 2014-11-02 | 2014 | 11 | 2
 108 | 2013-02-17 | 2013 | 2 | 17
 109 | 2021-08-30 | 2021 | 8 | 30
 110 | 2022-05-19 | 2022 | 5 | 19
 101 | 2015-03-15 | 2015 | 3 | 15
 102 | 2018-06-23 | 2018 | 6 | 23
(10 rows)

projects=# SELECT * FROM employee WHERE hire_date < DATE '2020-01-01';
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
 103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
 105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
 106 | Frank | Green | frank.green@company.com | 2017-07-08 | 6000.00 | 8 |
 107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4000.00 | 5 |
 108 | Hank | Wilson | hank.wilson@company.com | 2013-02-17 | 3100.00 | 6 |
 101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
 102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 | 0788123456
(7 rows)

projects=#

```

32. List projects that ended in the last 30 days.

```

SQL Shell (pgsql)
(18 rows)

projects=# SELECT * FROM employee WHERE EXTRACT(YEAR FROM hire_date) = EXTRACT(YEAR FROM CURRENT_DATE);
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
(0 rows)

projects=# SELECT NOW() AS currentdatetime28518;
currentdatetime28518
-----
2025-08-04 21:23:14.658583+03
(1 row)

projects=# SELECT employee_id, hire_date,EXTRACT(YEAR FROM hire_date) AS hireyear28518,EXTRACT(MONTH FROM hire_date) AS hiremonth28518,EXTRACT(DAY FROM hire_date) AS hireday28518 FROM employee;
employee_id | hire_date | hireyear28518 | hiremonth28518 | hireday28518
-----+-----+-----+-----+-----+
 103 | 2012-09-10 | 2012 | 9 | 10
 104 | 2020-01-05 | 2020 | 1 | 5
 105 | 2019-12-11 | 2019 | 12 | 11
 106 | 2017-07-08 | 2017 | 7 | 8
 107 | 2014-11-02 | 2014 | 11 | 2
 108 | 2013-02-17 | 2013 | 2 | 17
 109 | 2021-08-30 | 2021 | 8 | 30
 110 | 2022-05-19 | 2022 | 5 | 19
 101 | 2015-03-15 | 2015 | 3 | 15
 102 | 2018-06-23 | 2018 | 6 | 23
(10 rows)

projects=# SELECT * FROM employee WHERE hire_date < DATE '2020-01-01';
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
 103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
 105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
 106 | Frank | Green | frank.green@company.com | 2017-07-08 | 6000.00 | 8 |
 107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4000.00 | 5 |
 108 | Hank | Wilson | hank.wilson@company.com | 2013-02-17 | 3100.00 | 6 |
 101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
 102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 | 0788123456
(7 rows)

projects=# SELECT * FROM project WHERE end_date BETWEEN CURRENT_DATE - INTERVAL '30 days' AND CURRENT_DATE;
project_id | project_name | start_date | end_date
-----+-----+-----+-----+
(0 rows)

projects=#

```

33. Calculate total days between project start and end dates.

```

SQL Shell (pgsql)
projects=# SELECT employee_id, hire_date,EXTRACT(YEAR FROM hire_date) AS hireyear28518,EXTRACT(MONTH FROM hire_date) AS hiremonth28518,EXTRACT(DAY FROM hire_date) AS hireday28518 FROM employee;
employee_id | hire_date | hireyear28518 | hiremonth28518 | hireday28518
-----+-----+-----+-----+-----+
103 | 2012-09-10 | 2012 | 9 | 10
104 | 2020-01-05 | 2020 | 1 | 5
105 | 2019-12-11 | 2019 | 12 | 11
106 | 2017-07-08 | 2017 | 7 | 8
107 | 2014-11-02 | 2014 | 11 | 2
108 | 2013-02-17 | 2013 | 2 | 17
109 | 2019-08-30 | 2019 | 8 | 30
110 | 2022-05-19 | 2022 | 5 | 19
101 | 2015-03-15 | 2015 | 3 | 15
102 | 2018-06-23 | 2018 | 6 | 23
(10 rows)

projects=# SELECT * FROM employee WHERE hire_date < DATE '2020-01-01';
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
106 | Frank | Green | frank.green@company.com | 2017-07-08 | 6000.00 | 8 |
107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4900.00 | 5 |
109 | Hank | Wilson | hank.wilson@company.com | 2013-01-17 | 3100.00 | 6 |
101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 |
(7 rows)

projects=# SELECT * FROM project WHERE end_date BETWEEN CURRENT_DATE - INTERVAL '30 days' AND CURRENT_DATE;
project_id | project_name | start_date | end_date
-----+-----+-----+-----+
(0 rows)

projects=# SELECT project_id, project_name, end_date, start_date,end_date - start_date AS total_days FROM project;
project_id | project_name | end_date | start_date | total_days
-----+-----+-----+-----+-----+
201 | HR Revamp | 2023-12-31 | 2023-01-01 | 364
202 | Finance Automation | 2023-04-30 | 2022-05-15 | 350
203 | IT Infrastructure Upgrade | 2024-01-01 |
204 | Marketing Blitz 2025 | 2025-06-30 | 2025-02-01 | 149
205 | Legal Compliance | 2024-01-10 | 2023-07-18 | 184
206 | Customer Portal | 2022-10-31 | 2021-11-01 | 364
207 | Sales Booster | 2023-03-31 | 2023-04-01 | 364
208 | R&D Pilot | 2025-01-01 |
209 | Procurement Tracker | 2024-11-15 | 2024-03-15 | 245
210 | Operations Streamline | 2023-09-01 | 2022-09-01 | 365
(10 rows)

projects=#

```

34. Format date: '2025-07-23' to 'July 23, 2025' (use CONCAT).

```

SQL Shell (pgsql)
103 | 2014-11-02 | 2014 | 11 | 2
106 | 2013-02-17 | 2013 | 2 | 17
109 | 2021-09-30 | 2021 | 8 | 30
110 | 2022-05-19 | 2022 | 5 | 19
101 | 2015-03-15 | 2015 | 3 | 15
102 | 2018-06-23 | 2018 | 6 | 23
(10 rows)

projects=# SELECT * FROM employee WHERE hire_date < DATE '2020-01-01';
employee_id | first_name | last_name | email | hire_date | salary | department_id | phone_number
-----+-----+-----+-----+-----+-----+-----+-----+
103 | Carol | Adams | carol.adams@company.com | 2012-09-10 | 6700.00 | 2 |
105 | Eve | Martins | eve.martins@company.com | 2019-12-11 | 4000.00 | 3 |
106 | Frank | Green | frank.green@company.com | 2017-07-08 | 6000.00 | 8 |
107 | Grace | Brown | grace.brown@company.com | 2014-11-02 | 4900.00 | 5 |
109 | Hank | Wilson | hank.wilson@company.com | 2013-01-17 | 3100.00 | 6 |
101 | Alice | Johnson | alice.johnson@company.com | 2015-03-15 | 4500.00 | 1 | 0788123456
102 | Bob | Smith | bob.smith@company.com | 2018-06-23 | 5200.00 | 3 |
(7 rows)

projects=# SELECT * FROM project WHERE end_date BETWEEN CURRENT_DATE - INTERVAL '30 days' AND CURRENT_DATE;
project_id | project_name | start_date | end_date
-----+-----+-----+-----+
(0 rows)

projects=# SELECT project_id, project_name, end_date, start_date,end_date - start_date AS total_days FROM project;
project_id | project_name | end_date | start_date | total_days
-----+-----+-----+-----+-----+
201 | HR Revamp | 2023-12-31 | 2023-01-01 | 364
202 | Finance Automation | 2023-04-30 | 2022-05-15 | 350
203 | IT Infrastructure Upgrade | 2024-01-01 |
204 | Marketing Blitz 2025 | 2025-06-30 | 2025-02-01 | 149
205 | Legal Compliance | 2024-01-10 | 2023-07-18 | 184
206 | Customer Portal | 2022-10-31 | 2021-11-01 | 364
207 | Sales Booster | 2023-03-31 | 2023-04-01 | 364
208 | R&D Pilot | 2025-01-01 |
209 | Procurement Tracker | 2024-11-15 | 2024-03-15 | 245
210 | Operations Streamline | 2023-09-01 | 2022-09-01 | 365
(10 rows)

projects=# SELECT CONCAT(TO_CHAR(DATE '2025-07-23', 'Month'), ' ', TO_CHAR(DATE '2025-07-23', 'DD'), ', ', TO_CHAR(DATE '2025-07-23', 'YYYY')) AS formatteddate28518;
formatteddate28518
-----+
July 23, 2025
(1 row)

projects=#

```

35. Add a CASE: if project still active (end_date IS NULL), show 'Ongoing'.

```

SQL Shell (psql)
 108 | Hank   | Wilson    | hank.wilson@company.com | 2013-02-17 | 3100.00 |       6
 101 | Alice  | Johnson   | alice.johnson@company.com | 2015-03-15 | 4500.00 |       1
 102 | Bob    | Smith     | bob.smith@company.com  | 2018-06-23 | 5200.00 |       3
(7 rows)

projects=# SELECT * FROM project WHERE end_date BETWEEN CURRENT_DATE - INTERVAL '30 days' AND CURRENT_DATE;
project_id | project_name | start_date | end_date
-----+-----+-----+-----+
(0 rows)

projects=# SELECT project_id, project_name, end_date, start_date, end_date - start_date AS total_days FROM project;
project_id | project_name | end_date | start_date | total_days
-----+-----+-----+-----+-----+
 201 | HR Revamp | 2023-12-31 | 2023-01-01 | 364
 202 | Finance Automation | 2023-04-30 | 2023-05-15 | 350
 203 | IT Infrastructure Upgrade | 2024-01-01 | 2024-01-01 | 0
 204 | Marketing Blitz 2025 | 2025-06-30 | 2025-02-01 | 149
 205 | Legal Compliance | 2024-01-10 | 2023-07-10 | 184
 206 | Customer Portal | 2022-10-31 | 2021-11-01 | 364
 207 | Sales Booster | 2023-03-31 | 2022-04-01 | 364
 208 | R&D Pilot | 2025-01-01 | 2025-01-01 | 0
 209 | Procurement Tracker | 2024-11-15 | 2024-03-15 | 245
 210 | Operations Streamline | 2023-09-01 | 2022-09-01 | 365
(10 rows)

projects=# SELECT CONCAT(TO_CHAR(DATE '2025-07-23', 'Month'), ' ', TO_CHAR(DATE '2025-07-23', 'DD'), ' ', TO_CHAR(DATE '2025-07-23', 'YYYY')) AS formatteddate28518;
formatteddate28518
-----
July      23, 2025
(1 row)

projects=# SELECT project_id, project_name, CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE 'Completed' END AS projectstatus28518 FROM project;
project_id | project_name | projectstatus28518
-----+-----+-----+
 201 | HR Revamp | Completed
 202 | Finance Automation | Completed
 203 | IT Infrastructure Upgrade | Ongoing
 204 | Marketing Blitz 2025 | Completed
 205 | Legal Compliance | Completed
 206 | Customer Portal | Completed
 207 | Sales Booster | Completed
 208 | R&D Pilot | Ongoing
 209 | Procurement Tracker | Completed
 210 | Operations Streamline | Completed
(10 rows)

projects=#

```

36. Use CASE to label salaries.

```

SQL Shell (psql)
 202 | Finance Automation | 2023-04-30 | 2023-05-15 | 350
 203 | IT Infrastructure Upgrade | 2025-06-30 | 2025-02-01 | 149
 204 | Marketing Blitz 2025 | 2024-01-10 | 2023-07-10 | 184
 205 | Legal Compliance | 2022-10-31 | 2021-11-01 | 364
 206 | Customer Portal | 2023-03-31 | 2022-04-01 | 364
 207 | Sales Booster | 2024-11-15 | 2024-03-15 | 245
 208 | R&D Pilot | 2023-09-01 | 2022-09-01 | 365
(10 rows)

projects=# SELECT CONCAT(TO_CHAR(DATE '2025-07-23', 'Month'), ' ', TO_CHAR(DATE '2025-07-23', 'DD'), ' ', TO_CHAR(DATE '2025-07-23', 'YYYY')) AS formatteddate28518;
formatteddate28518
-----
July      23, 2025
(1 row)

projects=# SELECT project_id, project_name, CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE 'Completed' END AS projectstatus28518 FROM project;
project_id | project_name | projectstatus28518
-----+-----+-----+
 201 | HR Revamp | Completed
 202 | Finance Automation | Completed
 203 | IT Infrastructure Upgrade | Ongoing
 204 | Marketing Blitz 2025 | Completed
 205 | Legal Compliance | Completed
 206 | Customer Portal | Completed
 207 | Sales Booster | Completed
 208 | R&D Pilot | Ongoing
 209 | Procurement Tracker | Completed
 210 | Operations Streamline | completed
(10 rows)

projects=# SELECT salary, CASE WHEN salary >= 6000 THEN 'High' WHEN salary >= 4000 THEN 'Medium' ELSE 'Low' END AS salarylabel28518 FROM employee;
salary | salarylabel28518
-----+-----+
 6700.00 | High
 3800.00 | Low
 4000.00 | Medium
 6000.00 | High
 4900.00 | Medium
 3300.00 | Low
 2700.00 | Low
 3600.00 | Low
 4500.00 | Medium
 5200.00 | Medium
(10 rows)

projects=#

```

37. Use COALESCE to show 'No Email' if email is NULL.

```

SQL Shell (pgsql)
(1 row)

projects=# SELECT project_id, project_name,CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE 'Completed' END AS projectstatus28518 FROM project;
project_id | project_name | projectstatus28518
-----+-----+-----+
 201 | HR Revamp | Completed
 202 | Finance Automation | Completed
 203 | IT Infrastructure Upgrade | Ongoing
 204 | Marketing Blitz 2025 | Completed
 205 | Legal Compliance | Completed
 206 | Customer Portal | Completed
 207 | Sales Booster | Completed
 208 | R&D Pilot | Ongoing
 209 | Procurement Tracker | Completed
 210 | Operations Streamline | Completed
(10 rows)

projects=# SELECT salary,CASE WHEN salary >= 6000 THEN 'High' WHEN salary >= 4000 THEN 'Medium' ELSE 'Low' END AS salarylabel28518 FROM employee;
salary | salarylabel28518
-----+-----+
 6700.00 | High
 3800.00 | Low
 4000.00 | Medium
 6000.00 | High
 4900.00 | Medium
 3100.00 | Low
 2700.00 | Low
 3600.00 | Low
 4500.00 | Medium
 5200.00 | Medium
(10 rows)

projects=# SELECT COALESCE(email, 'No Email') AS emailedisplay28518 FROM employee;
emailedisplay28518
-----
carol.adams@company.com
david.lee@company.com
eve.martins@company.com
frank.green@company.com
grace.brown@company.com
hank.wilson@company.com
ivy.clark@company.com
jake.white@company.com
alice.johnson@company.com
bob.smith@company.com
(10 rows)

projects=#

```

38. CASE: If hire_date < 2015, mark as 'Veteran'.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT salary,CASE WHEN salary >= 6000 THEN 'High' WHEN salary >= 4000 THEN 'Medium' ELSE 'Low' END AS salarylabel28518 FROM employee;
salary | salarylabel28518
-----+-----+
 6700.00 | High
 3800.00 | Low
 4000.00 | Medium
 6000.00 | High
 4900.00 | Medium
 3100.00 | Low
 2700.00 | Low
 3600.00 | Low
 4500.00 | Medium
 5200.00 | Medium
(10 rows)

projects=# SELECT COALESCE(email, 'No Email') AS emailedisplay28518 FROM employee;
emailedisplay28518
-----
carol.adams@company.com
david.lee@company.com
eve.martins@company.com
frank.green@company.com
grace.brown@company.com
hank.wilson@company.com
ivy.clark@company.com
jake.white@company.com
alice.johnson@company.com
bob.smith@company.com
(10 rows)

projects=# SELECT hire_date,CASE WHEN hire_date < DATE '2015-01-01' THEN 'Veteran' ELSE 'New' END AS status28518 FROM employee;
hire_date | status28518
-----+-----+
 2012-09-10 | Veteran
 2020-01-05 | New
 2019-12-11 | New
 2017-07-08 | New
 2014-11-02 | Veteran
 2023-05-15 | Veteran
 2021-08-30 | New
 2022-05-19 | New
 2015-03-15 | New
 2018-06-23 | New
(10 rows)

projects=#

```

39. If salary is NULL, default it to 3000 using COALESCE.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT COALESCE(email, 'No Email') AS emailempty28518 FROM employee;
-----+
carol.adams@company.com
david.lee@company.com
eve.martins@company.com
frank.green@company.com
grace.wilson@company.com
hank.wilson@company.com
ivy.clark@company.com
jake.white@company.com
alice.johnson@company.com
bob.smith@company.com
(10 rows)

projects=# SELECT hire_date,CASE WHEN hire_date < DATE '2015-01-01' THEN 'Veteran' ELSE 'New' END AS status28518 FROM employee;
-----+
2012-09-10 | Veteran
2020-01-05 | New
2019-12-11 | New
2017-07-08 | New
2014-11-02 | Veteran
2013-02-17 | Veteran
2021-08-30 | New
2022-05-19 | New
2015-03-15 | New
2018-06-23 | New
(10 rows)

projects=# SELECT COALESCE(salary, 3000) AS salarywithdefault28518 FROM employee;
-----+
6700.00
3800.00
4000.00
6000.00
4900.00
3100.00
2700.00
3600.00
4500.00
5200.00
(10 rows)

projects=#

```

40. CASE: Categorize departments (IT, HR, Other).

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT hire_date,CASE WHEN hire_date < DATE '2015-01-01' THEN 'Veteran' ELSE 'New' END AS status28518 FROM employee;
-----+
2012-09-10 | Veteran
2020-01-05 | New
2019-12-11 | New
2017-07-08 | New
2014-11-02 | Veteran
2013-02-17 | Veteran
2021-08-30 | New
2022-05-19 | New
2015-03-15 | New
2018-06-23 | New
(10 rows)

projects=# SELECT COALESCE(salary, 3000) AS salarywithdefault28518 FROM employee;
-----+
6700.00
3800.00
4000.00
6000.00
4900.00
3100.00
2700.00
3600.00
4500.00
5200.00
(10 rows)

projects=# SELECT department_id,CASE WHEN department_name = 'Information technology' THEN 'Technical' WHEN department_name = 'Human Resources' THEN 'HR' ELSE 'Other' END AS deptcategory28518 FROM departments;
-----+
1 | HR
2 | Other
3 | Other
4 | Other
5 | Other
6 | Other
7 | Other
8 | Other
9 | Other
10 | Other
(10 rows)

projects=#

```

41. CASE: If employee has no project, mark as ‘Unassigned’.

```

SQL Shell (pgsql)

projects=# SELECT COALESCE(salary, 3000) AS salarywithdefault28518 FROM employee;
salarywithdefault28518
-----
6700.00
3800.00
4000.00
6000.00
4900.00
3100.00
2700.00
3600.00
4500.00
5200.00
(10 rows)

projects=# SELECT department_id,CASE WHEN department_name = 'Information technology' THEN 'Technical' WHEN department_name = 'Human Resources' THEN 'HR' ELSE 'Other' END AS deptcategory28518 FROM departments;
department_id | deptcategory28518
-----
1 | HR
2 | Other
3 | Other
4 | Other
5 | Other
6 | Other
7 | Other
8 | Other
9 | Other
10 | Other
(10 rows)

projects=# SELECT project_id,CASE WHEN project_id IS NULL THEN 'Unassigned' ELSE 'Assigned' END AS assignmentstatus28518 FROM project;
project_id | assignmentstatus28518
-----
201 | Assigned
202 | Assigned
203 | Assigned
204 | Assigned
205 | Assigned
206 | Assigned
207 | Assigned
208 | Assigned
209 | Assigned
210 | Assigned
(10 rows)

projects=#

```

42. CASE: Show tax band based on salary.

```

SQL Shell (pgsql)

projects=# SELECT department_id,CASE WHEN department_name = 'Information technology' THEN 'Technical' WHEN department_name = 'Human Resources' THEN 'HR' ELSE 'Other' END AS deptcategory28518 FROM departments;
department_id | deptcategory28518
-----
1 | HR
2 | Other
3 | Other
4 | Other
5 | Other
6 | Other
7 | Other
8 | Other
9 | Other
10 | Other
(10 rows)

projects=# SELECT project_id,CASE WHEN project_id IS NULL THEN 'Unassigned' ELSE 'Assigned' END AS assignmentstatus28518 FROM project;
project_id | assignmentstatus28518
-----
201 | Assigned
202 | Assigned
203 | Assigned
204 | Assigned
205 | Assigned
206 | Assigned
207 | Assigned
208 | Assigned
209 | Assigned
210 | Assigned
(10 rows)

projects=# SELECT salary,CASE WHEN salary >= 6000 THEN 'Band A' WHEN salary >= 4000 THEN 'Band B' WHEN salary >= 3000 THEN 'Band C' ELSE 'Band D' END AS taxband28518 FROM employee;
salary | taxband28518
-----
6700.00 | Band A
3800.00 | Band C
4000.00 | Band B
6000.00 | Band A
4900.00 | Band B
3300.00 | Band C
2700.00 | Band D
3600.00 | Band C
4500.00 | Band B
5200.00 | Band B
(10 rows)

projects=#

```

43. Use nested CASE to label project duration.

```

SQL Shell (psql)
 201 | Assigned
 202 | Assigned
 203 | Assigned
 204 | Assigned
 205 | Assigned
 206 | Assigned
 207 | Assigned
 208 | Assigned
 209 | Assigned
 210 | Assigned
(10 rows)

projects=# SELECT salary,CASE WHEN salary >= 6000 THEN 'Band A' WHEN salary >= 4000 THEN 'Band B' WHEN salary >= 3000 THEN 'Band C' ELSE 'Band D' END AS taxband28518 FROM employee;
salary | taxband28518
-----+
6700.00 | Band A
3800.00 | Band C
4800.00 | Band B
6000.00 | Band A
4900.00 | Band B
3100.00 | Band C
2700.00 | Band D
3600.00 | Band C
4500.00 | Band B
5200.00 | Band B
(10 rows)

projects=# SELECT project_name,CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE CASE WHEN end_date - start_date > 180 THEN 'Long-Term' ELSE 'Short-Term' END AS projectdurationlabel28518 FROM project;
ERROR: syntax error at or near "AS"
LINE 1: ...date > 180 THEN 'Long-Term' ELSE 'Short-Term' END AS project...
^
projects=# SELECT project_name,CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE CASE WHEN end_date - start_date > 180 THEN 'Long-Term' ELSE 'Short-Term' END END AS projectdurationlabel28518 FROM proj
ect;
      project_name      | projectdurationlabel28518
-----+
HR Revamp           | Long-Term
Finance Automation | Long-Term
IT Infrastructure Upgrade | Ongoing
Marketing Blitz 2025 | Short-Term
Legal Compliance    | Long-Term
Customer Portal     | Long-Term
Sales Booster        | Long-Term
R&D Pilot           | Ongoing
Procurement Tracker | Long-Term
Operations Streamline | Long-Term
(10 rows)

projects=#

```

44. Use CASE with MOD to show even/odd salary IDs.

```

SQL Shell (psql)
 6700.00 | Band A
3800.00 | Band C
4800.00 | Band B
6000.00 | Band A
4900.00 | Band B
3100.00 | Band C
2700.00 | Band D
3600.00 | Band C
4500.00 | Band B
5200.00 | Band B
(10 rows)

projects=# SELECT project_name,CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE CASE WHEN end_date - start_date > 180 THEN 'Long-Term' ELSE 'Short-Term' END AS projectdurationlabel28518 FROM project;
ERROR: syntax error at or near "AS"
LINE 1: ...date > 180 THEN 'Long-Term' ELSE 'Short-Term' END AS project...
^
projects=# SELECT project_name,CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE CASE WHEN end_date - start_date > 180 THEN 'Long-Term' ELSE 'Short-Term' END END AS projectdurationlabel28518 FROM proj
ect;
      project_name      | projectdurationlabel28518
-----+
HR Revamp           | Long-Term
Finance Automation | Long-Term
IT Infrastructure Upgrade | Ongoing
Marketing Blitz 2025 | Short-Term
Legal Compliance    | Long-Term
Customer Portal     | Long-Term
Sales Booster        | Long-Term
R&D Pilot           | Ongoing
Procurement Tracker | Long-Term
Operations Streamline | Long-Term
(10 rows)

projects=# SELECT employee_id,CASE WHEN MOD(employee_id, 2) = 0 THEN 'Even' ELSE 'Odd' END AS id_type FROM employee;
employee_id | id_type
-----+
 103 | Odd
 104 | Even
 105 | Odd
 106 | Even
 107 | Odd
 108 | Even
 109 | Odd
 110 | Even
 101 | Odd
 102 | Even
(10 rows)

projects=#

```

45. Combine COALESCE + CONCAT for fallback names.

```

SQL Shell (pgsql)
LINE 1: ...date > 180 THEN 'Long-Term' ELSE 'Short-Term' END AS project...
projects=# SELECT project_name,CASE WHEN end_date IS NULL THEN 'Ongoing' ELSE CASE WHEN end_date - start_date > 180 THEN 'Long-Term' ELSE 'Short-Term' END END AS projectdurationlabel28518 FROM proj
ect;
   project_name    | projectdurationlabel28518
-----+
HR Revamp          | Long-Term
Finance Automation | Long-Term
IT Infrastructure Upgrade | Ongoing
Marketing Blitz 2025 | Short-Term
Legal Department | Long-Term
Customer Portal   | Long-Term
Sales Booster      | Long-Term
R&D Pilot          | Ongoing
Procurement Tracker | Long-Term
Operations Streamline | Long-Term
(10 rows)

projects=# SELECT employee_id,CASE WHEN MOD(employee_id, 2) = 0 THEN 'Even' ELSE 'Odd' END AS id_type FROM employee;
employee_id | id_type
-----+
 103 | Odd
 104 | Even
 105 | Odd
 106 | Even
 107 | Odd
 108 | Even
 109 | Odd
 110 | Even
 101 | Odd
 102 | Even
(10 rows)

projects=# SELECT CONCAT(COALESCE(first_name, 'NoName'), ' ', COALESCE(last_name, 'NoSurname')) AS fullname28518 FROM employee;
fullname28518
-----
Carol Adams
David Lee
Eve Martins
Frank Green
Grace Brown
Hank Wilson
Ivy Clark
Jake White
Alice Johnson
Bob Smith
(10 rows)

projects=#

```

46. CASE with LENGTH(): if name length > 10, label “Long Name”.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT employee_id,CASE WHEN MOD(employee_id, 2) = 0 THEN 'Even' ELSE 'Odd' END AS id_type FROM employee;
employee_id | id_type
-----+
 103 | Odd
 104 | Even
 105 | Odd
 106 | Even
 107 | Odd
 108 | Even
 109 | Odd
 110 | Even
 101 | Odd
 102 | Even
(10 rows)

projects=# SELECT CONCAT(COALESCE(first_name, 'NoName'), ' ', COALESCE(last_name, 'NoSurname')) AS fullname28518 FROM employee;
fullname28518
-----
Carol Adams
David Lee
Eve Martins
Frank Green
Grace Brown
Hank Wilson
Ivy Clark
Jake White
Alice Johnson
Bob Smith
(10 rows)

projects=# SELECT first_name,CASE WHEN LENGTH(first_name) > 10 THEN 'Long Name' ELSE 'Short Name' END AS namelengthlabel28518 FROM employee;
first_name | namelengthlabel28518
-----+
Carol       | Short Name
David      | Short Name
Eve        | Short Name
Frank      | Short Name
Grace      | Short Name
Hank        | Short Name
Ivy         | Short Name
Jake        | Short Name
Alice      | Short Name
Bob         | Short Name
(10 rows)

projects=#

```

47. CASE + UPPER(): if email has ‘TEST’, mark as dummy account.

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT CONCAT(COALESCE(first_name, 'NoName'), ' ', COALESCE(last_name, 'NoSurname')) AS fullname28518 FROM employee;
-----
Carol Adams
David Lee
Eve Martins
Frank Green
Grace Brown
Hank Wilson
Ivy Clark
Jake White
Alice Johnson
Bob Smith
(10 rows)

projects=# SELECT first_name,CASE WHEN LENGTH(first_name) > 10 THEN 'Long Name' ELSE 'Short Name' END AS namelengthlabel28518 FROM employee;
first_name | namelengthlabel28518
-----
Carol       | Short Name
David      | Short Name
Eve        | Short Name
Frank      | Short Name
Grace      | Short Name
Hank        | Short Name
Ivy         | Short Name
Jake        | Short Name
Alice      | Short Name
Bob         | Short Name
(10 rows)

projects=# SELECT email,CASE WHEN UPPER(email) LIKE '%TEST%' THEN 'Dummy' ELSE 'Real' END AS emailtype28518 FROM employee;
email          | emailtype28518
-----
carol.adams@company.com | Real
david.lee@company.com  | Real
eve.martins@company.com | Real
frank.green@company.com | Real
grace.brown@company.com | Real
hank.wilson@company.com | Real
ivy.clark@company.com  | Real
jake.white@company.com | Real
alice.johnson@company.com | Real
bob.smith@company.com | Real
(10 rows)

projects=#

```

48. CASE: Show seniority based on hire year (e.g., Junior/Senior).

```

SQL Shell (pgsql)
(10 rows)

projects=# SELECT first_name,CASE WHEN LENGTH(first_name) > 10 THEN 'Long Name' ELSE 'Short Name' END AS namelengthlabel28518 FROM employee;
first_name | namelengthlabel28518
-----
Carol       | Short Name
David      | Short Name
Eve        | Short Name
Frank      | Short Name
Grace      | Short Name
Hank        | Short Name
Ivy         | Short Name
Jake        | Short Name
Alice      | Short Name
Bob         | Short Name
(10 rows)

projects=# SELECT email,CASE WHEN UPPER(email) LIKE '%TEST%' THEN 'Dummy' ELSE 'Real' END AS emailtype28518 FROM employee;
email          | emailtype28518
-----
carol.adams@company.com | Real
david.lee@company.com  | Real
eve.martins@company.com | Real
frank.green@company.com | Real
grace.brown@company.com | Real
hank.wilson@company.com | Real
ivy.clark@company.com  | Real
jake.white@company.com | Real
alice.johnson@company.com | Real
bob.smith@company.com | Real
(10 rows)

projects=# SELECT hire_date,CASE WHEN EXTRACT(YEAR FROM hire_date) <= 2015 THEN 'Senior' WHEN EXTRACT(YEAR FROM hire_date) <= 2020 THEN 'Mid-Level' ELSE 'Junior' END AS senioritylevel28518 FROM employee;
hire_date | senioritylevel28518
-----
2012-09-10 | Senior
2020-01-01 | Mid-Level
2019-12-11 | Mid-Level
2017-07-01 | Mid-Level
2014-11-02 | Senior
2022-01-01 | Junior
2021-08-30 | Junior
2022-05-19 | Junior
2015-03-15 | Senior
2018-06-23 | Mid-Level
(10 rows)

projects=#

```

49. Use CASE to determine salary increment range.

```
SQL Shell (psql)

projects=# SELECT email,CASE WHEN UPPER(email) LIKE '%TEST%' THEN 'Dummy' ELSE 'Real' END AS emailetype28518 FROM employee;
      email   | emailetype28518
+-----+
carol.adams@company.com | Real
david.lee@company.com  | Real
eve.martins@company.com | Real
frank.green@company.com | Real
grace.brown@company.com | Real
hank.wilson@company.com | Real
ivy.clark@company.com  | Real
jake.white@company.com | Real
alice.johnson@company.com | Real
bob.smith@company.com | Real
(10 rows)

projects=# SELECT hire_date,CASE WHEN EXTRACT(YEAR FROM hire_date) <= 2015 THEN 'Senior' WHEN EXTRACT(YEAR FROM hire_date) <= 2020 THEN 'Mid-Level' ELSE 'Junior' END AS senioritylevel28518 FROM employee;
      hire_date | senioritylevel28518
+-----+
2012-09-10 | Senior
2020-01-05 | Mid-Level
2019-12-11 | Mid-Level
2017-07-08 | Mid-Level
2014-11-02 | Senior
2013-02-17 | Senior
2021-08-30 | Junior
2022-05-19 | Junior
2015-03-15 | Senior
2018-06-23 | Mid-Level
(10 rows)

projects=# SELECT salary,CASE WHEN salary < 6000 THEN '10% Increase' WHEN salary < 4000 THEN '7% Increase' ELSE '5% Increase' END AS incrementplan28518 FROM employee;
      salary | incrementplan28518
+-----+
6700.00 | 5% Increase
3800.00 | 10% Increase
4000.00 | 10% Increase
6000.00 | 5% Increase
4900.00 | 10% Increase
3100.00 | 10% Increase
2700.00 | 10% Increase
3600.00 | 10% Increase
4500.00 | 10% Increase
5200.00 | 10% Increase
(10 rows)

projects=#

```

50. Use CASE with CURDATE() to determine anniversary month.

SQL Shell (psql)

```
projects=# SELECT hire_date,CASE WHEN EXTRACT(YEAR FROM hire_date) <= 2015 THEN 'Senior' WHEN EXTRACT(YEAR FROM hire_date) <= 2020 THEN 'Mid-Level' ELSE 'Junior' END AS senioritylevel28518
          loyee;
          hire_date | senioritylevel28518
-----+-----
2012-09-10 | Senior
2020-01-05 | Mid-Level
2019-12-11 | Mid-Level
2017-07-08 | Mid-Level
2014-11-02 | Senior
2013-02-17 | Senior
2021-08-30 | Junior
2022-05-19 | Junior
2015-03-15 | Senior
2018-06-23 | Mid-Level
(10 rows)

projects=# SELECT salary,CASE WHEN salary < 6000 THEN '10% Increase' WHEN salary < 4000 THEN '7% Increase' ELSE '5% Increase' END AS incrementplan28518 FROM employee;
          salary | incrementplan28518
-----+-----
6700.00 | 5% Increase
3800.00 | 10% Increase
4000.00 | 10% Increase
6000.00 | 5% Increase
4900.00 | 10% Increase
3100.00 | 10% Increase
2700.00 | 10% Increase
3600.00 | 10% Increase
4500.00 | 10% Increase
5200.00 | 10% Increase
(10 rows)

projects=# SELECT hire_date,CASE WHEN EXTRACT(MONTH FROM hire_date) = EXTRACT(MONTH FROM CURRENT_DATE) THEN 'Anniversary Month' ELSE 'Not Anniversary' END AS anniversarystatus28518 FROM employee;
          hire_date | anniversarystatus28518
-----+-----
2012-09-10 | Not Anniversary
2020-01-05 | Not Anniversary
2019-12-11 | Not Anniversary
2017-07-08 | Not Anniversary
2014-11-02 | Not Anniversary
2013-02-17 | Not Anniversary
2021-08-30 | Anniversary Month
2022-05-19 | Not Anniversary
2015-03-15 | Not Anniversary
2018-06-23 | Not Anniversary
(10 rows)
```

projects=#



Type here to search



23°C Mostly clear

