

### Creating a new table with different types of data

```
CREATE TABLE data
(
    data_id serial PRIMARY KEY,
    char char(5) NOT NULL,
    varchar varchar(5) NOT NULL,
    integer integer,
    decimal decimal(10,2) NOT NULL,
    boolean bool NOT NULL
)
```

### Data adding

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('snake', 'bat', 12, 10.22, TRUE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('cream', 'milk', 12, 10.22, TRUE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('black', 'blue', 1, 1.9, FALSE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('train', 'bus', 567, 0.8, FALSE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('apple', 'pear', 9000, 45.8, TRUE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('sunny', 'snow', NULL, 10.22, FALSE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('robin', 'crow', 12, 555, FALSE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('dance', 'run', NULL, 1.93, TRUE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('seven', 'six', 6, 7.0 , TRUE);
```

```
INSERT INTO data(char, varchar, integer, decimal, boolean)
VALUES('mouse', 'disc', 9, 0.71, FALSE);
```

| Data Output |                                | Explain                      | Messages                                | Notifications             |                                  |                           |
|-------------|--------------------------------|------------------------------|---|---------------------------|----------------------------------|---------------------------|
|             | <b>data_id</b><br>[PK] integer | <b>char</b><br>character (5) | <b>varchar</b><br>character varying (5) | <b>integer</b><br>integer | <b>decimal</b><br>numeric (10,2) | <b>boolean</b><br>boolean |
| 1           | 1                              | snake                        | bat                                     | 12                        | 10.22                            | true                      |
| 2           | 2                              | cream                        | milk                                    | 12                        | 10.22                            | true                      |
| 3           | 3                              | black                        | blue                                    | 1                         | 1.90                             | false                     |
| 4           | 4                              | train                        | bus                                     | 567                       | 0.80                             | false                     |
| 5           | 5                              | apple                        | pear                                    | 9000                      | 45.80                            | true                      |
| 6           | 6                              | sunny                        | snow                                    | [null]                    | 10.22                            | false                     |
| 7           | 7                              | robin                        | crow                                    | 12                        | 555.00                           | false                     |
| 8           | 8                              | dance                        | run                                     | [null]                    | 1.93                             | true                      |
| 9           | 9                              | seven                        | six                                     | 6                         | 7.00                             | true                      |
| 10          | 10                             | mouse                        | disc                                    | 9                         | 0.71                             | false                     |

- 1) Make directings: count and show sum of 'decimal' column (as 'sum'), change this value to varchar type (7 characters), and show as 'varchar\_sum'. Next round sum and display as 'round\_sum'.

```
SELECT
```

```
    SUM(decimal),
```

```
    CAST(SUM(decimal) as VARCHAR(7)) varchar_sum,
```

```
    ROUND(SUM(decimal), 1) round_sum
```

```
FROM data
```

| Data Output |                       | Explain | Messages                                    | Notifications |                             |
|-------------|-----------------------|---------|---|---------------|-----------------------------|
|             | <b>sum</b><br>numeric |         | <b>varchar_sum</b><br>character varying (7) |               | <b>round_sum</b><br>numeric |
| 1           | 643.80                |         | 643.80                                      |               | 643.8                       |

- 2) Find cells contains the 'null' value and display them

```
SELECT * FROM data
```

```
WHERE char is NULL OR varchar is NULL OR integer is null OR decimal is NULL OR boolean is NULL
```

| Data Output |                                | Explain                      | Messages                                | Notifications             |                                  |                           |
|-------------|--------------------------------|------------------------------|---|---------------------------|----------------------------------|---------------------------|
|             | <b>data_id</b><br>[PK] integer | <b>char</b><br>character (5) | <b>varchar</b><br>character varying (5) | <b>integer</b><br>integer | <b>decimal</b><br>numeric (10,2) | <b>boolean</b><br>boolean |
| 1           | 6                              | sunny                        | snow                                    | [null]                    | 10.22                            | false                     |
| 2           | 8                              | dance                        | run                                     | [null]                    | 1.93                             | true                      |

- 3) Display data\_id and column 'integer' - if value in integer is null, display text 'OMG it is null!'.

```
SELECT
```

```
data_id,
```

```
COALESCE((CAST(integer as varchar(30))), 'OMG it is null!') null_or_not
```

```
FROM data
```

|    | Data Output             | Explain         | Messages                         |
|----|-------------------------|-----------------|----------------------------------|
|    | data_id<br>[PK] integer | integer         | null_or_not<br>character varying |
| 1  | 1                       | 12              |                                  |
| 2  | 2                       | 12              |                                  |
| 3  | 3                       | 1               |                                  |
| 4  | 4                       | 567             |                                  |
| 5  | 5                       | 9000            |                                  |
| 6  | 6                       | OMG it is null! |                                  |
| 7  | 7                       | 12              |                                  |
| 8  | 8                       | OMG it is null! |                                  |
| 9  | 9                       | 6               |                                  |
| 10 | 10                      | 9               |                                  |

- 4) Display columns: data\_id, decimal, boolean. Create column 'decimal\_high' and if 'decimal' is smaller than 7 display „Too little“, if 'decimal' = 7 show 'Good! It is' + value 7; and if it's more than 7 – display current date.

```
SELECT
```

```
data_id, decimal, boolean,
```

```
CASE
```

```
WHEN decimal > 7 THEN 'Too little'
```

```
WHEN decimal = 7 THEN CONCAT('Good! It is ', (CAST(decimal as VARCHAR)))
```

ELSE CAST(CURRENT\_DATE AS VARCHAR)

END decimal\_high

FROM data

|    | Data Output             | Explain                   | Messages           | Notifications                     |
|----|-------------------------|---------------------------|--------------------|-----------------------------------|
|    | data_id<br>[PK] integer | decimal<br>numeric (10,2) | boolean<br>boolean | decimal_high<br>character varying |
| 1  | 1                       | 10.22                     | true               | Too little                        |
| 2  | 2                       | 10.22                     | true               | Too little                        |
| 3  | 3                       | 1.90                      | false              | 2021-11-21                        |
| 4  | 4                       | 0.80                      | false              | 2021-11-21                        |
| 5  | 5                       | 45.80                     | true               | Too little                        |
| 6  | 6                       | 10.22                     | false              | Too little                        |
| 7  | 7                       | 555.00                    | false              | Too little                        |
| 8  | 8                       | 1.93                      | true               | 2021-11-21                        |
| 9  | 9                       | 7.00                      | true               | Good!It is 7.00                   |
| 10 | 10                      | 0.71                      | false              | 2021-11-21                        |

- 5) Display all column and next check column 'boolean'. If value = true in new column 'true\_or\_false' display 2 firstly letters. If value in 'boolean' if false – display words from column 'varchar' reverse.

SELECT

\*,




CASE

WHEN boolean = true THEN LEFT(char, 2)

ELSE REVERSE(vchar)

END true\_or\_false

FROM data

| Data Output |   | Explain   | Messages   | Notifications  |   |  |   |
|-------------|---|---|--|--|---|--|---|
|             |  data_id<br>[PK] integer |  char<br>character (5) |  varchar<br>character varying (5) |  integer<br>integer |  decimal<br>numeric (10,2) |  boolean<br>boolean |  true_or_false<br>text |
| 1           | 1   | snake   | bat  | 12   | 10.22   | true   | sn  |
| 2           | 2   | cream   | milk   | 12   | 10.22   | true   | cr  |
| 3           | 3   | black   | blue   | 1  | 1.90  | false  | eulb  |
| 4           | 4   | train   | bus  | 567  | 0.80  | false  | sub   |
| 5           | 5   | apple   | pear   | 9000   | 45.80   | true   | ap  |
| 6           | 6   | sunny   | snow   | [null]   | 10.22   | false  | wons  |
| 7           | 7   | robin   | crow   | 12   | 555.00  | false  | worc  |
| 8           | 8   | dance   | run  | [null]   | 1.93  | true   | da  |
| 9           | 9   | seven   | six  | 6  | 7.00  | true   | se  |
| 10          | 10  | mouse   | disc   | 9  | 0.71  | false  | csid  |