Mathematical functions and operators

Operator	Description	Example	Result
+	addition	4+3	7
-	subtraction	5-3	2
*	multiplication	4 * 2	8
1	division (integer division truncates the result)	8 / 4	2
%	modulo (remainder)	10 % 4	2
٨	exponentiation	2 ^ 3	8

SYNTAX SUM (replacement_cost) * 2 SUM (replacement_cost) + 1 SUM (replacement_cost) / SUM (rental_rate)*100

Mathematical functions and operators

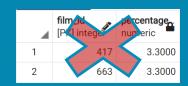
Function	Description	Example	Result
abs(x)	absolute value	abs(-7)	7
round(x,d)	round x to d decimal places	round(4.3543)	4.35
ceiling(x)	round up to integer	ceiling(4.3543)	5
floor(x)	round down to integer	floor(4.3543)	4

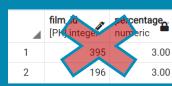
Your manager is thinking about increasing the prices for films that are more expensive to replace.

For that reason, you should create a list of the films including the relation of rental rate / replacement cost where the rental rate is less than 4% of the replacement cost.

Create a list of that film_ids together with the percentage rounded to 2 decimal places. For example 3.54 (=3.54%).

4	film_id [PK] integer	percentage numeric
1	417	3.30
2	663	3.30



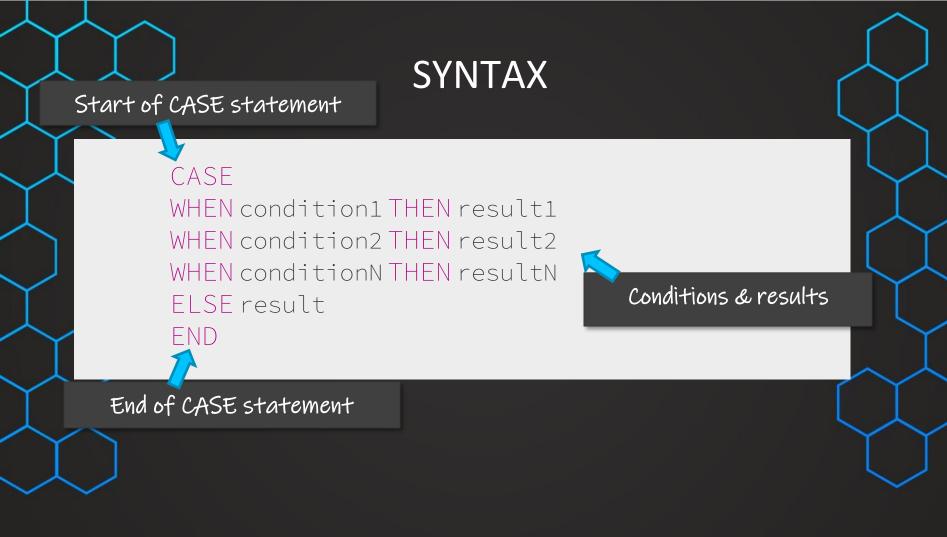




CASE

Like IF/THEN statement:

Goes through a set of conditions returns a value if a condition is met



SELECT amount, CASE

WHEN amount < 2 THEN 'low amount'

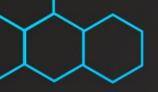
WHEN amount < 5 THEN 'medium amount'

ELSE 'high amount'

END

FROM payment

amount numeric (5,2)	case text
	low amout
0.99	low amout
6.99	high amount
0.99	low amout
4.99	medium amount



```
SELECT
TO_CHAR(book_date,'Dy'),
TO_CHAR(book_date,'Mon'),
CASE
```

WHEN TO_CHAR(book_date,'Dy')='Mon'THEN'Monday special'

WHEN TO_CHAR(book_date, 'Mon') = 'Jul' THEN 'July special'

END

FROM bookings

Result of <u>first</u> true condition!

Mon	Aug	Monday special
Sat	Jul	July special
Tue	Jul	July special
Mon	Jul	Monday special



FROM bookings

SYNTAX



```
SELECT
TO_CHAR(book_date,'Dy'),
TO_CHAR(book_date,'Mon'),
CASE
WHEN TO_CHAR(book_date,'Dy')='Mon'THEN'Monday special'
WHEN TO_CHAR(book_date,'Mon')='Jul' THEN 'July special'
END
```

No condition met => [null]

Wed	Jul	July special
Fri	Jul	July special
Tue	Aug	[null]
Thu	Aug	[null]
Mon	Aug	Monday special

```
SELECT
TO_CHAR(book_date,'Dy'),
TO_CHAR(book_date,'Mon'),
```

CASE

WHEN TO_CHAR(book_date, 'Dy') = 'Mon'THEN 'Monday special'

WHEN TO_CHAR(book_date, 'Mon') = 'Jul' THEN 'July special'

ELSE 'no special'

END

FROM bookings

ELSE => result if no condition is met

Wed	Jul	July special
Fri	Jul	July special
Tue	Aug	no special
Thu	Aug	no special
Mon	Aug	Monday special

```
SELECT
total_amount,
TO_CHAR(book_date, 'Dy'),
CASE
WHEN TO_CHAR (book_date, 'Dy') = 'Mon'THEN 'Monday special'
WHEN total_amount < 30000 THEN 'Special deal'
ELSE 'no special at all'
FND
FROM bookings
```

```
SELECT
total_amount,
TO_CHAR(book_date, 'Dy'),
CASE
WHEN TO_CHAR (book_date, 'Dy') = 'Mon'THEN 'Monday special'
```

WHEN total_amount*1.4 < 30000 THEN 'Special deal'

ELSE 'no special at all'

FND

FROM bookings

numeric (10,2)	to_char_text	case text	
265700.00	Wed	no special at all	
37900.00	Fri	no special at all	
18100.00	Tue	Special deal	
131800.00	Thu	no special at all	
23600.00	Mon	Monday special	

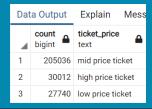


```
SELECT
total_amount,
TO_CHAR(book_date, 'Dy'),
CASE
    WHEN TO_CHAR (book_date, 'Dy') = 'Mon'THEN 'Monday special'
     WHEN total_amount < 30000 THEN 'Special deal'
     ELSE 'no special at all'
FND
FROM bookings
```

You need to find out how many tickets you have sold in the following categories:

- Low price ticket: total_amount < 20,000
- Mid price ticket: total_amount between 20,000 and 150,000
- High price ticket: total_amount >= 150,000

How many high price tickets has the company sold?



You need to find out how many flights have departed in the following seasons:

• Winter: December, January, Februar

Spring: March, April, May

Summer: June, July, August

• Fall: September, October, November

Data Output		Explain
4	flights bigint	season text
1	7596	Fall
2	25525	Summer

You want to create a tier list in the following way:

- 1. Rating is 'PG' or 'PG-13' or length is more then 210 min: 'Great rating or long (tier 1)
- 2. Description contains 'Drama' and length is more than 90min: 'Long drama (tier 2)'
- 3. Description contains 'Drama' and length is not more than 90min: 'Shcity drama (tier 3)'
- 4. Rental_rate less than \$1: 'Very cheap (tier 4)'

If one movie can be in multiple categories it gets the higher tier assigned. How can you filter to only those movies that appear in one of these 4 tiers?

4	title text	case text
1	ACADEMY DINOSAUR	Great rating or very long (tier 1)
2	AGENT TRUMAN	Great rating or very long (tier 1)
3	AIRPLANE SIERRA	Great rating or very long (tier 1)
4	ALABAMA DEVIL	Great rating or very long (tier 1)
5	ALAMO VIDEOTAPE	Very cheap (tier 4)

COALESCE |

Returns first value of a list of values which is not null

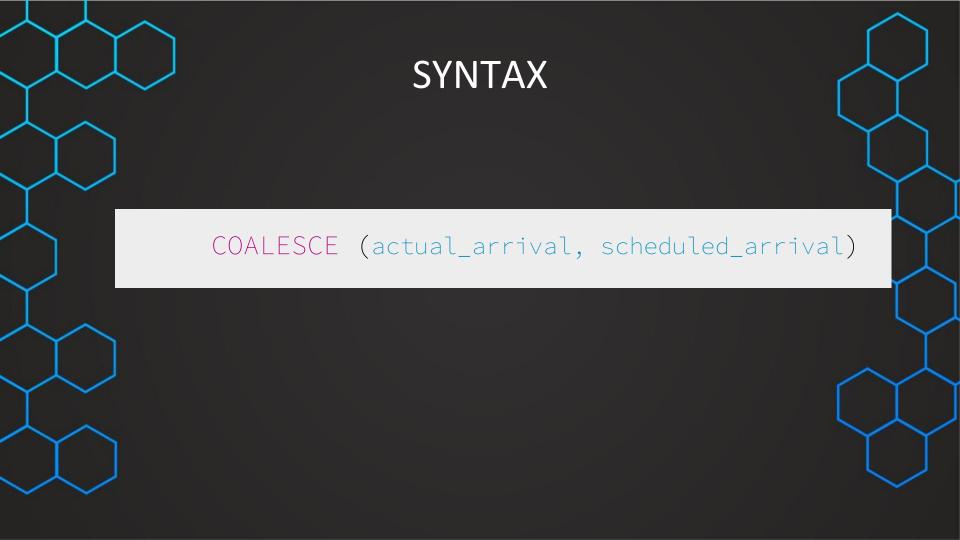
COALESCE(actual_arrival, schedule_arrival)

actual_arrival timestamp with time zone	scheduled_arrival timestamp with time zone
2017-08-05 19:01:00+02	2017-08-05 19:00:00+02
2017-08-05 09:34:00+02	2017-08-05 09:30:00+02
[null]	2017-09-09 12:20:00+02



coalesce timestamp with time zone 2017-08-05 19:01:00+02 2017-08-05 09:34:00+02

2017-09-09 12:20:00+02







actual_arrival	scheduled_arrival	coalesce
timestamp with time zone	timestamp with time zone	timestamp with time zone
[null]	2017-09-10 13:55:00+02	1970-01-01 00:00:00+01



CAST



scheduled_arrival timestamp with time zone

2017-09-10 13:55:00+02

2017-08-25 16:35:00+02

CAST TO TEXT



scheduled_arrival character varying

2017-09-10 13:55:00+02

2017-08-25 16:35:00+02







