TECH
VAULT

WINDOW FUNCTIONS
PART 2
(Frames)

AMR ELHELW
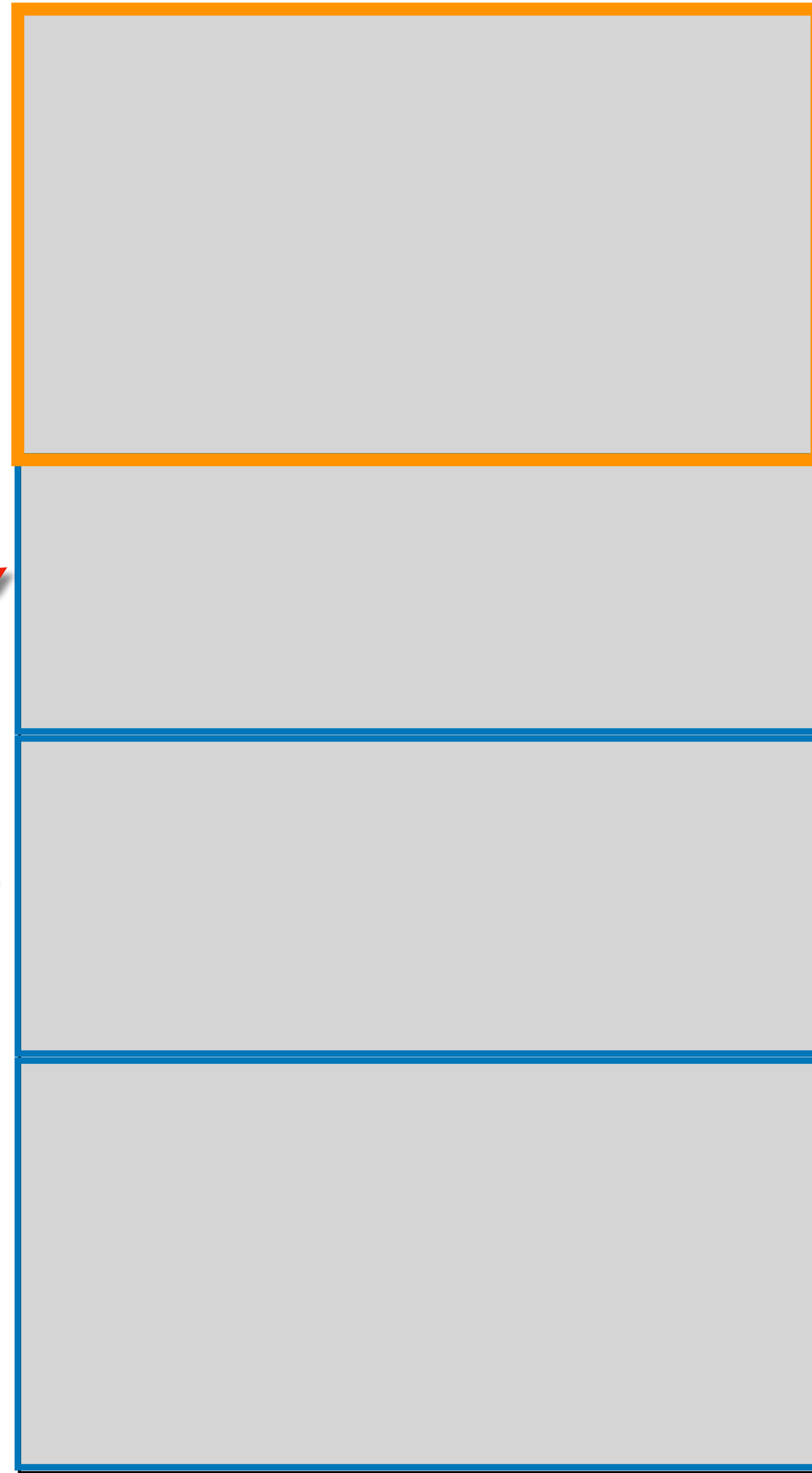
func(\<args\>) OVER (...)

PARTITION BY ...

ORDER BY ...

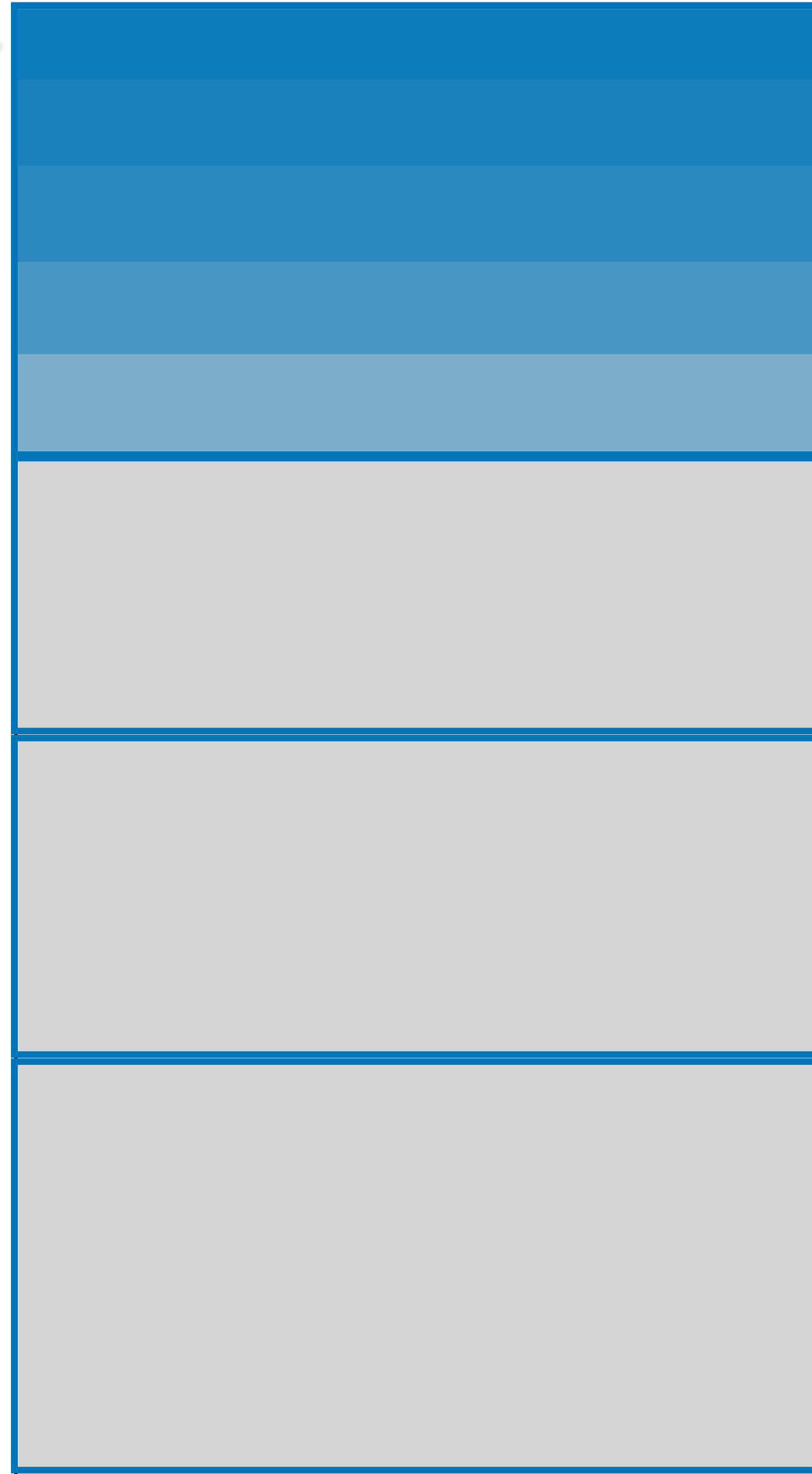**Partitions**

func(<args>) OVER (

PARTITION BY ...

)

Table

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Frame →

func(**<args>**) OVER (

    PARTITION BY ...

    ORDER BY ...

)

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Frame Specification

- **ROWS**
- **RANGE**

ROWS

- Defines the frame in terms of *number of rows* before and after the current row

- **Syntax:**

```
ROWS BETWEEN <frame start> AND <frame end>
```

UNBOUNDED PRECEDING   UNBOUNDED FOLLOWING

N PRECEDING   N FOLLOWING

CURRENT ROW   CURRENT ROW

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ROWS

- **Examples**

```
ROWS BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW

ROWS BETWEEN 2 PRECEDING AND 2 FOLLOWING

ROWS BETWEEN UNBOUNDED PRECEDING AND UNBOUNDED FOLLOWING

ROWS BETWEEN CURRENT ROW AND 1 FOLLOWING

ROWS BETWEEN CURRENT ROW AND CURRENT ROW
```

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RANGE

- Defines the frame in terms of *values* before and *after* the *value* in the current row (current value)

- **Syntax:**

```
RANGE BETWEEN <frame start> AND <frame end>
```

UNBOUNDED PRECEDING   UNBOUNDED FOLLOWING

N PRECEDING   N FOLLOWING

CURRENT ROW   CURRENT ROW

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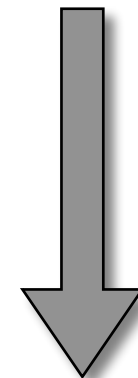**VAULT**

RANGE

```
... OVER(
    PARTITION BY ...
    ORDER BY quantity
    RANGE BETWEEN <frame start> AND <frame end>
)
```

⬇

```
quantity BETWEEN <start_val> AND <end_val>
```

If X is the value of "quantity" in the current row

- CURRENT ROW ⟶ X

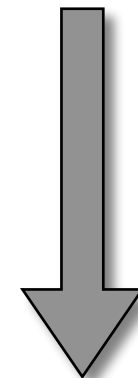- N PRECEDING ⟶ X - N (not N rows before)

- N FOLLOWING ⟶ X + N (not N rows after)

	Quantity	
	...	385 -> 415
	387	
Current ⟶	415	
	420	
	420	
	502	
	...	

```
RANGE BETWEEN 30 PRECEDING
AND CURRENT ROW
```

```
quantity BETWEEN X-30 AND X
```

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RANGE

	Quantity	
	...	
	502	
	420	
	420	
	415	
	387	
	...	

```
... OVER(
  PARTITION BY ...
  ORDER BY quantity DESC
  RANGE BETWEEN <frame start> AND <frame end>
)
```

```
quantity BETWEEN <start_val> AND <end_val>
```

If X is the value of "quantity" in the current row

- CURRENT ROW ⟶ X

- N PRECEDING ⟶ ~~X - N (not N rows before)~~ X + N

- N FOLLOWING ⟶ ~~X + N (not N rows after)~~ X - N

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RANGE

- **Default Frame** (when ORDER BY is used):

```
RANGE BETWEEN UNBOUNDED PRECEDING AND CURRENT ROW
```

- From beginning of partition until row with the same value as current row

- Might include rows after current row if they have the same value