Diving deeper with logical functions

DATA ANALYSIS IN EXCEL

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Customer segmentation

- **Customer segmentation** divides a business' customer base into distinct groups based on their behaviors and characteristics
  - Based on various criteria:
    - Demographics
    - Geographic location
    - Purchasing behavior
  - Gain a better understanding of their customers
  - Improve the product, marketing or services

Nesting logical tests using IF

- **Nesting functions** are a technique where two or more functions are used in a single formula.

Syntax for `IF()`

```
IF(logical test, [value if true], [value if false])
```

Syntax for a nested `IF()`

```
IF(logical test, [value if true],
    IF(logical test, [value if true],
    ..., [value if false]))
```

Nesting logical tests using IFS

Syntax for `IFS()`

```
IFS(logical test 1, [value if true 1],[logical test 2], [value if true 2]...)
```

- Easier than nesting multiple `IF()` s together
- Returns the value for the first TRUE test
- There is no `[value if false]`
  - Returns `#N/A` if none of the tests are true

SWITCHing values

Syntax for `SWITCH()`

```
SWITCH(expression, value 1, result 1, [default or value 2],[result 2],...)
```

SWITCHing values

Syntax for `SWITCH()`

```
SWITCH(expression, value 1, result 1, [default or value 2],[result 2],...)
```

Example: SWITCH the value in cell C1 based on the corresponding list:

Answer: `SWITCH(C1,0,FALSE,1,TRUE)`

Value	Result
0	FALSE
1	TRUE

SWITCHing values

Syntax for `SWITCH()`

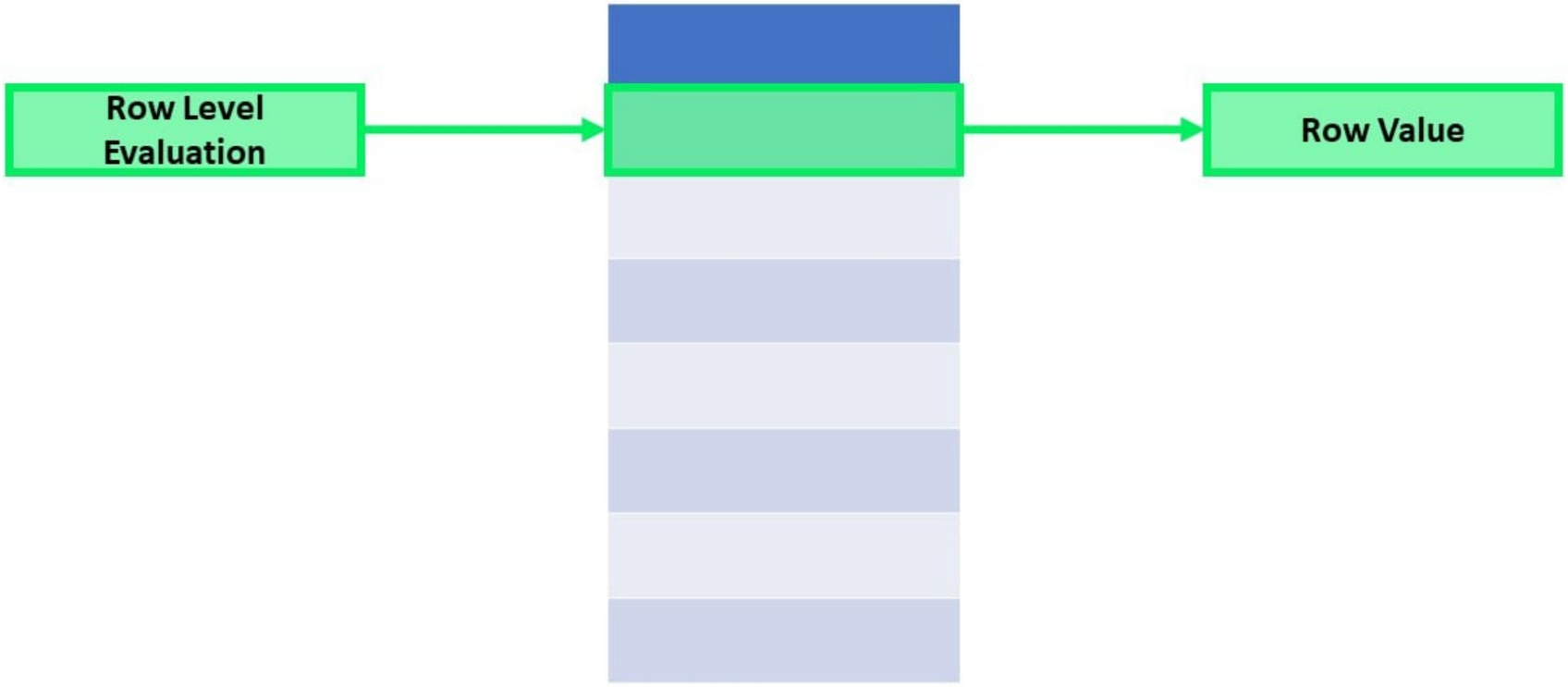
```
SWITCH(expression, value 1, result 1, [default or value 2],[result 2],...)
```

Example: SWITCH the result in `2 - 1` to `TRUE` if it equals `1`, and `FALSE` if it equals 0 or 2.

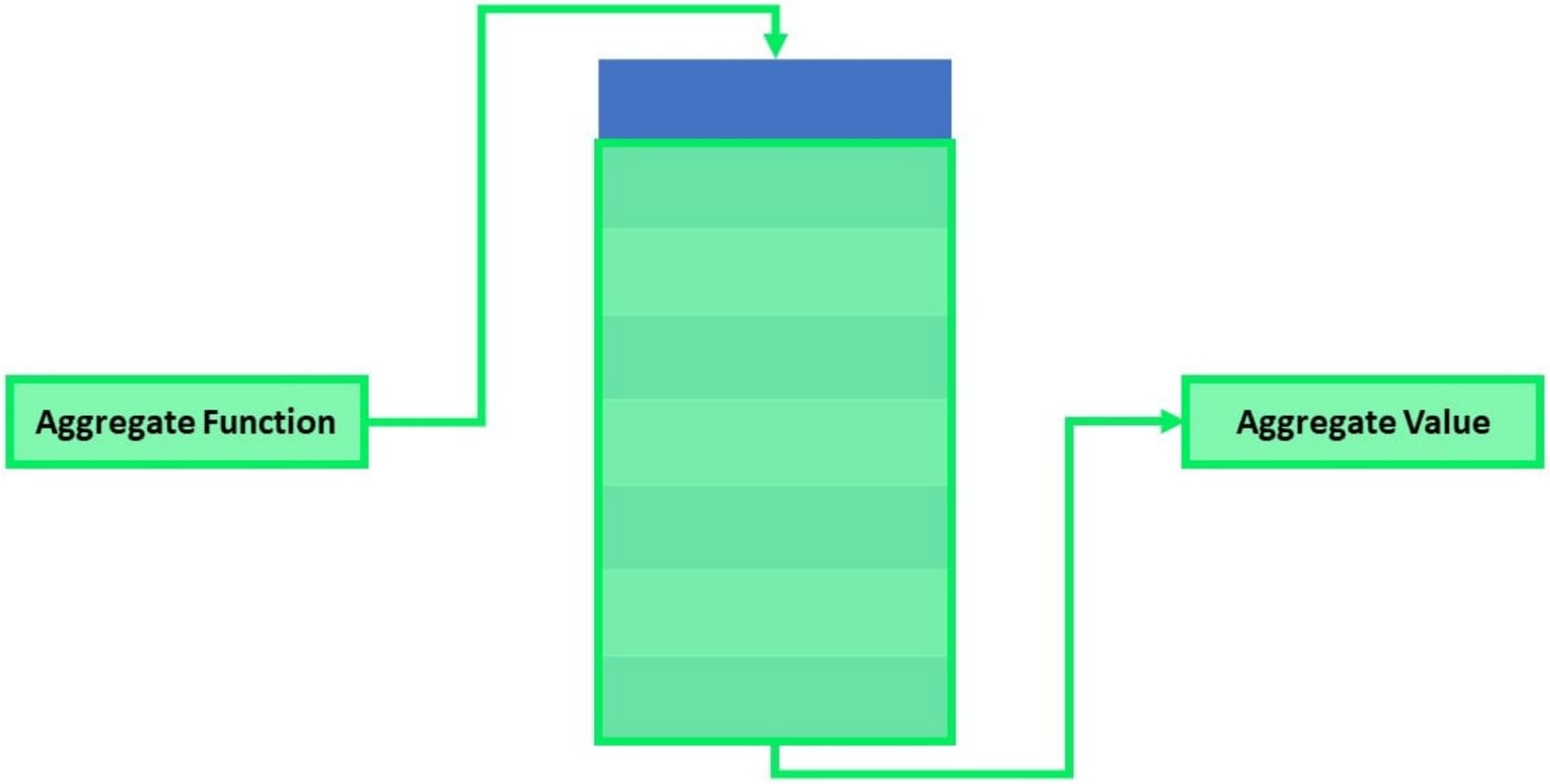
Value	Result
0	BLUE
1	GREEN
2	RED

Answer: `SWITCH(2-1,0,"BLUE",1,"GREEN",2,"RED")` --> `2-1` = `1` --> `Green`

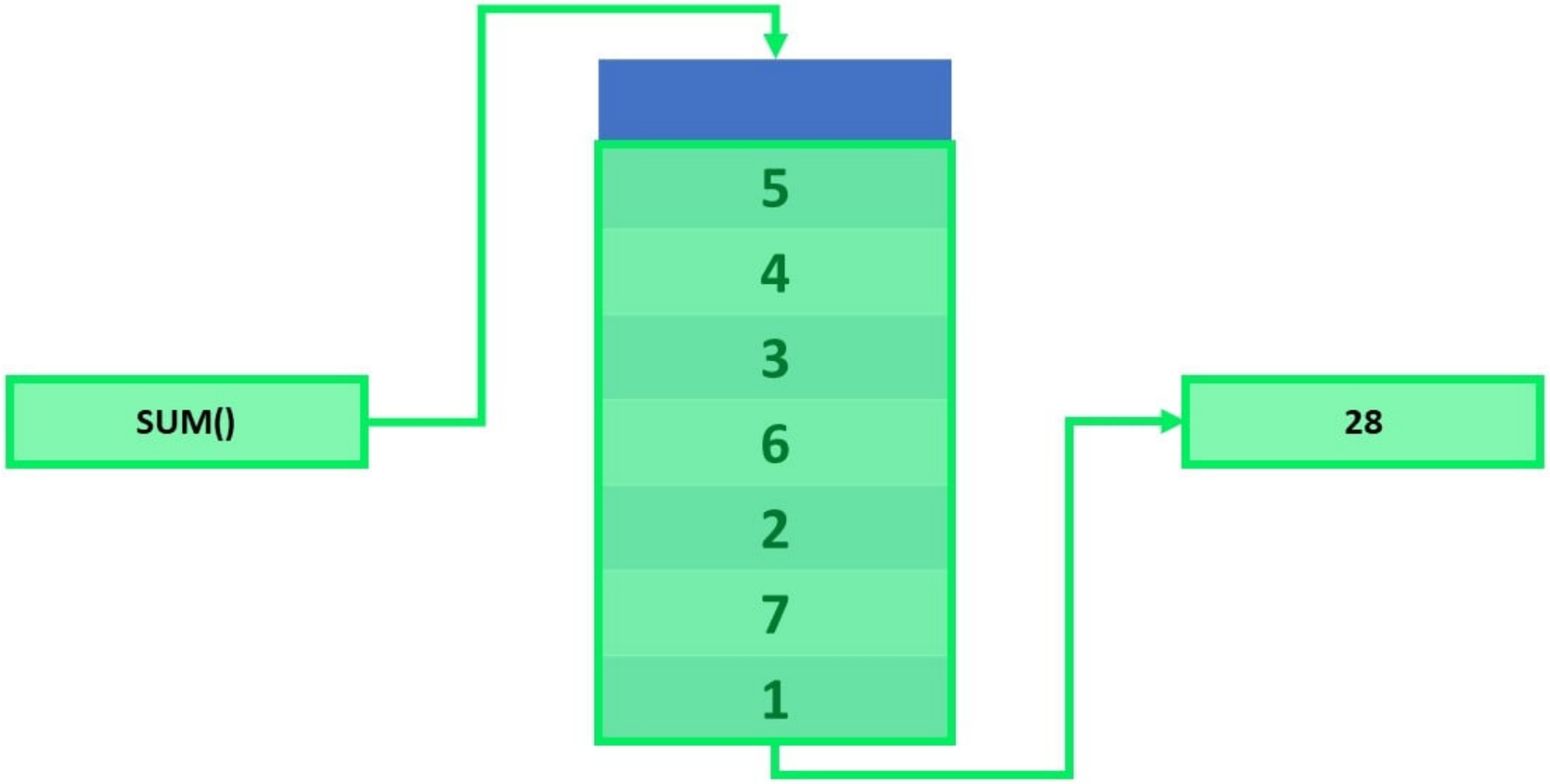
Row level evaluations



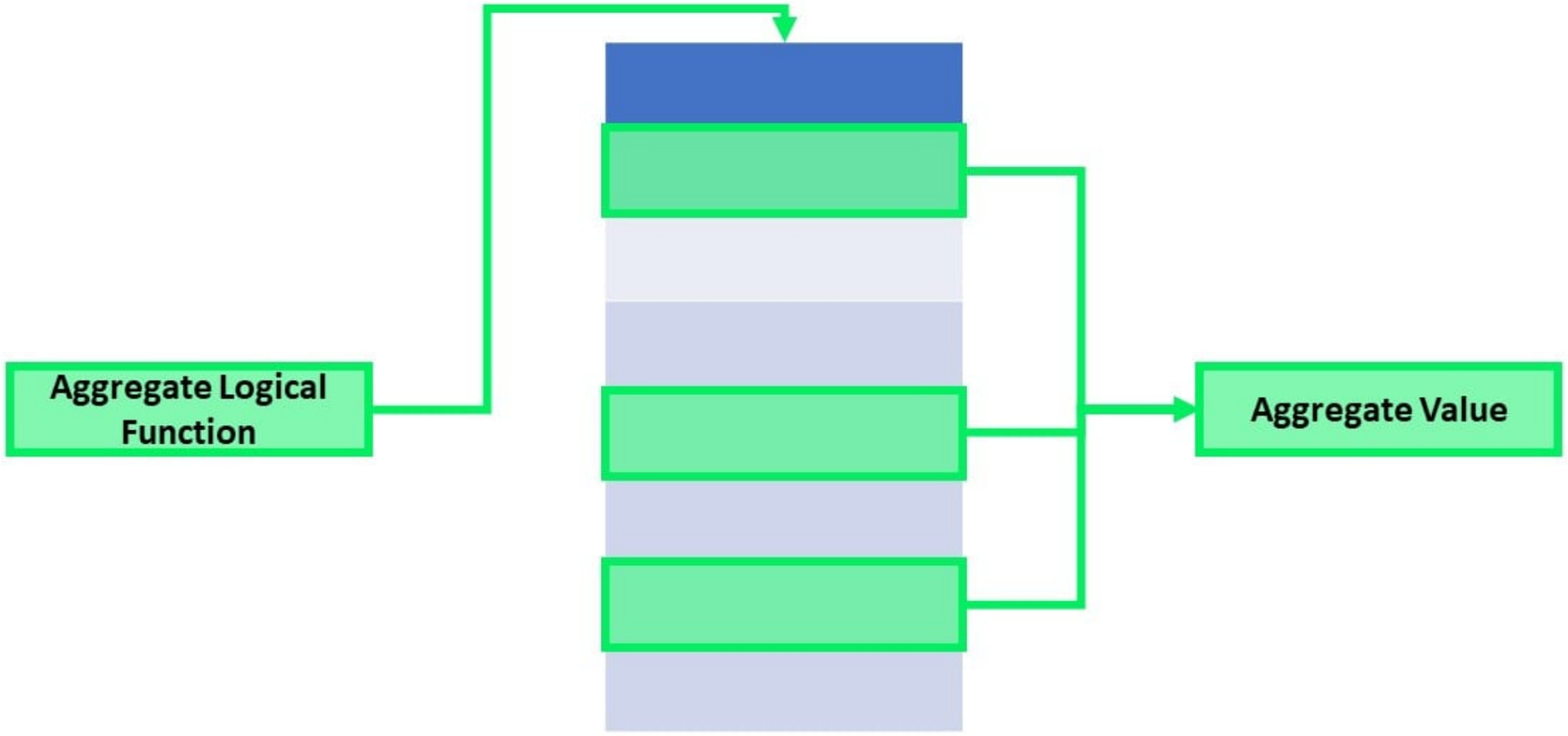
Aggregate functions



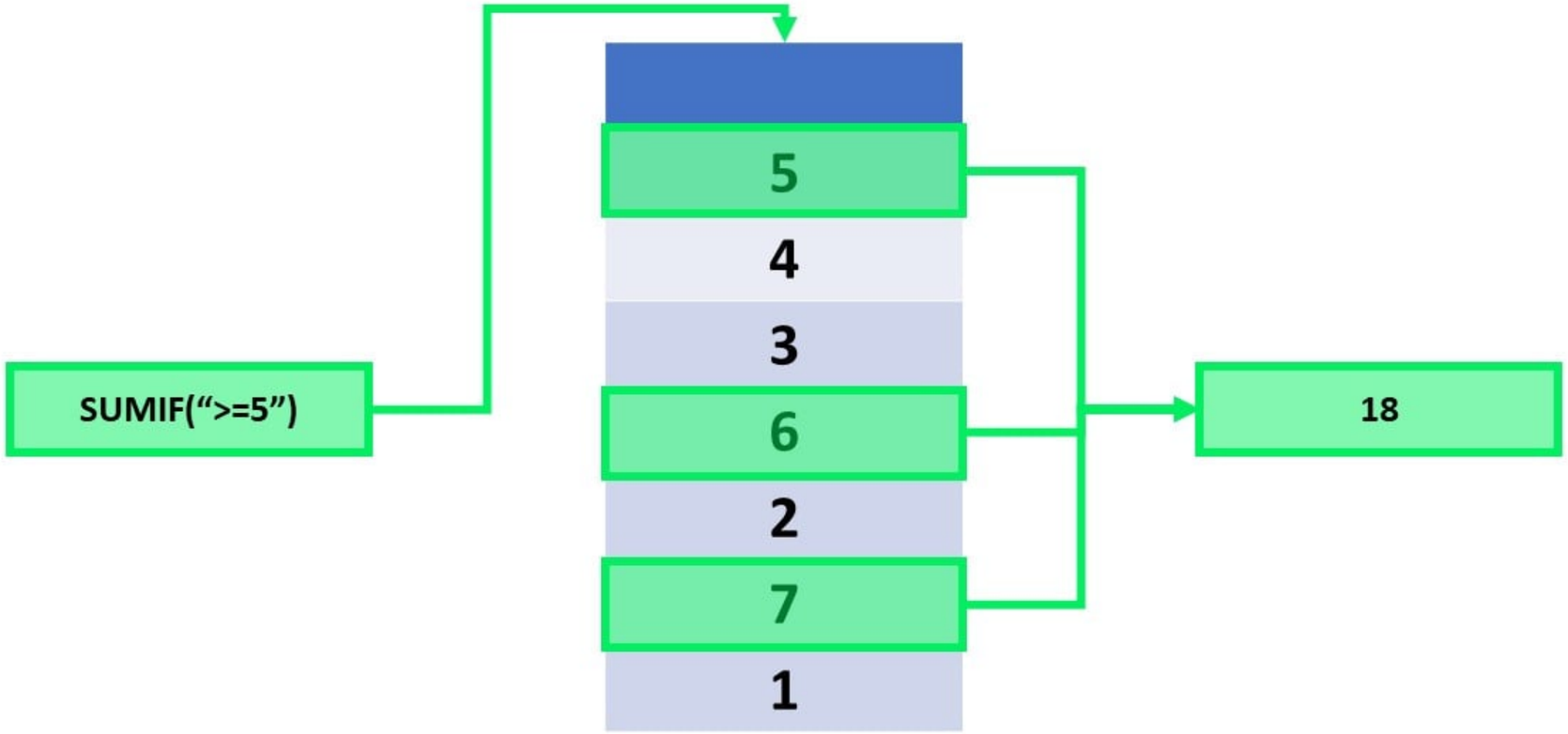
Aggregate functions



Aggregate logical functions



Aggregate logical functions



Syntax for COUNTIF and COUNTIFS

Syntax for `COUNTIF()`

```
`COUNTIF(range, criteria)`
```

Syntax for `COUNTIFS()`

```
`COUNTIFS(range 1, criteria 1, [range 2], [criteria 2])`
```

- Each criteria must be `TRUE`

Let's practice!

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Intermediate logical functions in Excel

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datacamp

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