

VLOOKUP, HLOOKUP & INDEX/MATCH



Objectives:

Know how to

- combine data tables
- look up specific values

using formulas in Excel

=VLOOKUP(lookup value , table , col_# , exact?)

| | A | B | C | D | E |
|---|---|------|---|---|-------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | John | | | 20009 |
| 5 | | | | | |
| 6 | | | | | |

=VLOOKUP(lookup value, table, col_#, exact?)

"John"

| | A | B | C | D | E |
|---|---|------|---|---|-------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | John | | | 20009 |
| 5 | | | | | |
| 6 | | | | | |

=VLOOKUP(lookup value, table, col_#, exact?)

"John"

B1:E6

| | A | B | C | D | E |
|---|---|------|---|---|-------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | John | | | 20009 |
| 5 | | | | | |
| 6 | | | | | |

=VLOOKUP(lookup value , table , col_# , exact?)

"John"

B1:E6

4

| | A | B | C | D | E |
|---|---|------|---|---|-------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | John | | | 20009 |
| 5 | | | | | |
| 6 | | | | | |
| | | 1 | 2 | 3 | 4 |

=VLOOKUP(lookup value, table, col_#, exact?)

"John" B1:E6 4 0

| | A | B | C | D | E |
|---|---|------|---|---|-------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | John | | | 20009 |
| 5 | | | | | |
| 6 | | | | | |

Summary

- **VLOOKUP**: Find “ABC” in the **first column**, returns value ‘X’ columns to the right
- **HLOOKUP**: Find “ABC” in **first row**, return value ‘X’ rows down

Activity #1

- Remember relative references (\$A\$1:\$A\$2) as appropriate
- Don't forget the “exact match” field!

INDEX/MATCH – A better way!

=INDEX (array , row_# , [col_#])

D1:D6 ??? <skip>

| | A | B | C | D | E |
|---|------|---|---|-------|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | John | | | 20009 | |
| 5 | | | | | |
| 6 | | | | | |

=INDEX (D1:D6 ,
↑
MATCH (lookup_value , lookup_array , exact?)
"John" A1:A6 0)

| | A | B | C | D | E |
|---|------|---|---|-------|---|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | John | | | 20009 | |
| 5 | | | | | |
| 6 | | | | | |

=INDEX ("answer"
array , MATCH (What to find , "search"
array , always
exact! (0)))

Activity

- Remember relative references (\$A\$1:\$A\$2) as appropriate
- Watch out for the “exact match” fields!

Advanced

- **When would VLOOKUP fail?**
- **Two Dimensions**
- **Multiple search criteria** – “John” and “Doe”

Advanced

- **When would VLOOKUP fail?**
 - Can't look backwards
 - If you rearrange columns, formulas break
 - Formula audit less clear when inspecting
- **Two Dimensions** – use a **MATCH** in both the 'row' and 'column' fields of **INDEX**
- **Multiple search criteria** – “John” and “Doe”
 - “Helper” columns
 - SUMPRODUCT (if getting numbers)
 - OFFSET