

## Q LANGUAGE - TABLE ARITHMETIC

[http://www.tutorialspoint.com/kdbplus/q\\_language\\_table\\_arithmetic.htm](http://www.tutorialspoint.com/kdbplus/q_language_table_arithmetic.htm)

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In this chapter, we will learn how to operate on dictionaries and then tables. Let's start with dictionaries –

```
q)d:`u`v`x`y`z! 9 18 27 36 45 / Creating a dictionary d
q)/ key of this dictionary (d) is given by
q)key d
`u`v`x`y`z
q)/and the value by
q)value d
9 18 27 36 45
q)/a specific value
q)d`x
27
q)d[`x]
27
q)/values can be manipulated by using the arithmetic operator +-*% as,
q)45 + d[`x`y]
72 81
```

If one needs to amend the dictionary values, then the amend formulation can be –

```
q)@[`d;`z;*;9]
`d
q)d
u | 9
v | 18
x | 27
y | 36
q)/Example, table tab
q)tab:([sym:`;time:0#0nt;price:0n;size:0N)
q)n:10;sym:`IBM`SAMSUNG`APPLE`MSFT
q)insert[`tab;(n?sym;("t".$.z.Z);n?100.0;n?100)]
0 1 2 3 4 5 6 7 8 9
q)`time xasc `tab
`tab
q)/ to get particular column from table tab
q)tab[`size]
12 10 1 90 73 90 43 90 84 63
q)tab[`size]+9
21 19 10 99 82 99 52 99 93 72
z | 405
```

```
q)/Example table tab
q)tab:([ ]sym:`;time:0#0nt;price:0n;size:0N)
q)n:10;sym:`IBM`SAMSUNG`APPLE`MSFT
q)insert[`tab;(n?sym;("t".$.z.Z);n?100.0;n?100)]
0 1 2 3 4 5 6 7 8 9
```

```
q)`time xasc `tab
`tab
```

```
q)/ to get particular column from table tab
```

```
q)tab[`size]
12 10 1 90 73 90 43 90 84 63
```

```
q)tab[`size]+9
21 19 10 99 82 99 52 99 93 72
```

```
q)/Example table tab
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```
q)tab:([ ]sym:`;time:0#0nt;price:0n;size:0N)
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q)`time xasc `tab
`tab
```

```
q)/ to get particular column from table tab
```

```
q)tab[`size]
12 10 1 90 73 90 43 90 84 63
```

```
q)tab[`size]+9
21 19 10 99 82 99 52 99 93 72
```

```
q)/We can also use the @ amend too
```

```
q)@[tab;`price;-;2]
```

| sym     | time         | price    | size |
|---------|--------------|----------|------|
| -----   |              |          |      |
| APPLE   | 11:16:39.779 | 6.388858 | 12   |
| MSFT    | 11:16:39.779 | 17.59907 | 10   |
| IBM     | 11:16:39.779 | 35.5638  | 1    |
| SAMSUNG | 11:16:39.779 | 59.37452 | 90   |
| APPLE   | 11:16:39.779 | 50.94808 | 73   |
| SAMSUNG | 11:16:39.779 | 67.16099 | 90   |
| APPLE   | 11:16:39.779 | 20.96615 | 43   |
| SAMSUNG | 11:16:39.779 | 67.19531 | 90   |
| IBM     | 11:16:39.779 | 45.07883 | 84   |
| IBM     | 11:16:39.779 | 61.46716 | 63   |

```
q)/if the table is keyed
```

```
q)tab1:`sym xkey tab[0 1 2 3 4]
```

```
q)tab1
```

| sym     | time         | price    | size |
|---------|--------------|----------|------|
| -----   |              |          |      |
| APPLE   | 11:16:39.779 | 8.388858 | 12   |
| MSFT    | 11:16:39.779 | 19.59907 | 10   |
| IBM     | 11:16:39.779 | 37.5638  | 1    |
| SAMSUNG | 11:16:39.779 | 61.37452 | 90   |

APPLE | 11:16:39.779 52.94808 73

q)/To work on specific column, try this

```
q){tab1[x]`size} each sym
1 90 12 10
```

```
q)(0!tab1)`size
12 10 1 90 73
```

q)/once we got unkeyed table, manipulation is easy

```
q)2+ (0!tab1)`size
14 12 3 92 75
```