Q LANGUAGE - LISTS

Lists are the basic building blocks of **q language**, so a thorough understanding of lists is very important. A list is simply an ordered collection of atoms *atomicelements* and other lists *groupofoneormoreatoms*.

Types of List

A **general list** encloses its items within matching parentheses and separates them with semicolons. For example −

```
(9;8;7)   or   ("a"; "b"; "c")   or   (-10.0; 3.1415e; `abcd; "r")
```

If a list comprises of atoms of same type, it is known as a **uniform list**. Else, it is known as a **general list** *mixedtype*.

Count

We can obtain the number of items in a list through its count.

```
q)l1:(-10.0;3.1415e;`abcd;"r")      / Assigning variable name to general list

q)count l1                          / Calculating number of items in the list l1
4
```

Examples of simple List

```
q)h:(1h;2h;255h)                    / Simple Integer List

q)h
1 2 255h

q)f:(123.4567;9876.543;98.7)        / Simple Floating Point List

q)f
123.4567 9876.543 98.7

q)b:(0b;1b;0b;1b;1b)                / Simple Binary Lists

q)b
01011b

q)symbols:(`Life;`Is;`Beautiful)    / Simple Symbols List

q)symbols
`Life`Is`Beautiful

q)chars:("h";"e";"l";"l";"o";" ";"w";"o";"r";"l";"d")
                                    / Simple char lists and Strings.
q)chars
"hello world"
```

**Note − A simple list of char is called a string.

A list contains atoms or lists. **To create a single item list**, we use −

```
q)singleton:enlist 42

q)singleton
,42
```

To distinguish between an atom and the equivalent singleton, examine the sign of their type.

```
q)signum type 42
-1i

q)signum type enlist 42
1i
```