

# Binary data

## Primary data types

**Integer**  
(byte, short, int, long)

**Float**  
(float, double)

**Character**

**Boolean**

**Pointer**

## Data structures/collections

### Linear

#### Static

**Array**

**String**

**ArrayList**

**Queue**

- + queue : List
- + maxSize : integer
- + enqueue (element)
- + dequeue ( ) : element
- + peek ( ) : element
- + isFull ( ) : boolean
- + isEmpty ( ) : boolean

**Stack**

- + stack : List
- + maxSize : integer
- + push (element)
- + pop ( ) : element
- + peek ( ) : element
- + isFull ( ) : boolean
- + isEmpty ( ) : boolean

#### Dynamic

**LinkedList**

head : Node

- + add (element)
- + add (index, element)
- addFirst (element)
- addLast (element)
- clear ( )
- element ( ) : element
- get (index) : element
- getFirst ( ) : element
- getLast ( ) : element
- remove ( ) : boolean
- remove (index) : element
- removeFirst ( ) : element
- removeLast ( ) : element
- size ( ) : integer
- isEmpty ( ) : boolean
- 
- insert (element)
- insertAt (element)
- contains ( ) : boolean
- removeAt (index) : boolean
- indexOf (element) : integer
- list ( ) : string

### Non-linear

**Tree**

**BinaryTree**

**Graph**

**Node**

data : data

next : node

setNextNode (Node)

getNextNode ( ) : Node

- **Bit**
- **Nibble** =  $2^2$  bits
- **Byte** =  $2^3$  bits
- **Kilobyte** (KB) =  $10^3$  bytes
- **Kibibyte** (KiB) =  $2^{10}$  bytes
- **Megabyte** (MB) =  $10^6$  bytes
- **Mebibyte** (MiB) =  $2^{20}$  bytes
- **Gigabyte** (GB) =  $10^9$  bytes
- **Gibibyte** (GiB) =  $2^{30}$  bytes
- **Terabyte** (TB) =  $10^{12}$  bytes
- **Tebibyte** (TiB) =  $2^{40}$  bytes
- **Petabyte** (PB) =  $10^{15}$  bytes
- **Pebibyte** (PiB) =  $2^{50}$  bytes
- **Exabyte** (EB) =  $10^{18}$  bytes
- **Exbibyte** (EiB) =  $2^{60}$  bytes
- **Zettabyte** (ZB) =  $10^{21}$  bytes
- **Zebibyte** (ZiB) =  $2^{70}$  bytes
- **Yottabyte** (YB) =  $10^{24}$  bytes
- **Yobibyte** (YiB) =  $2^{80}$  bytes