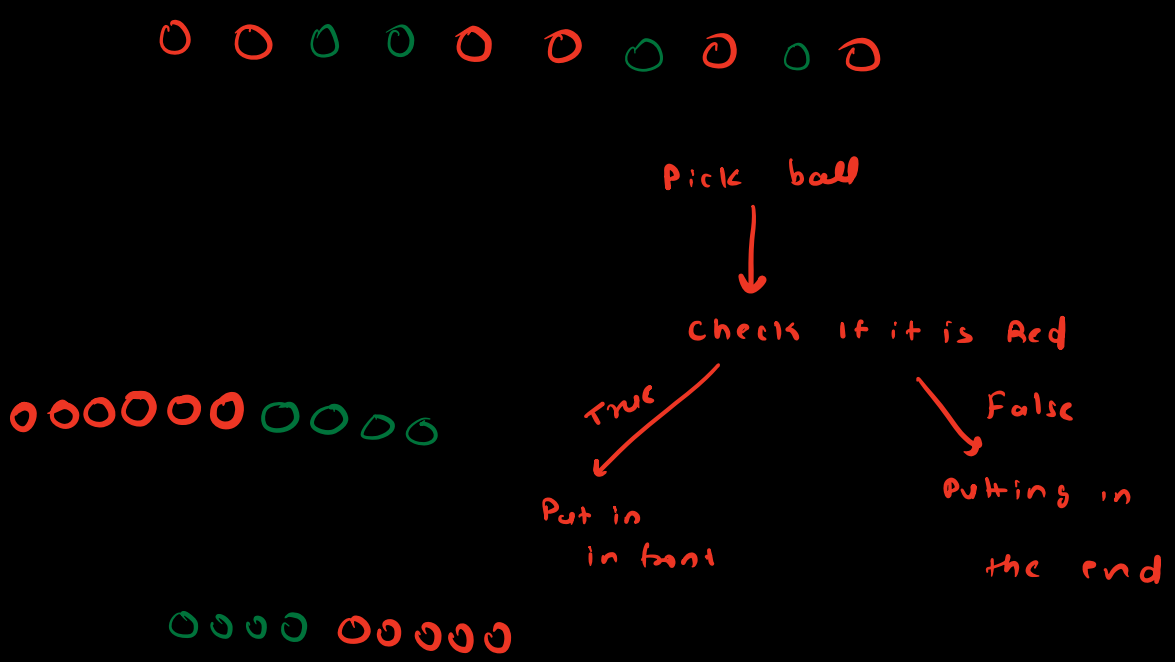
- What is comparator
- how it works
- Implementation
  - → C++
  - → Java
- Sort based on tenth place

Comparator tells you decide the custom parameter for sorting.



Implementation

1. C++

Sorting in ascending gord

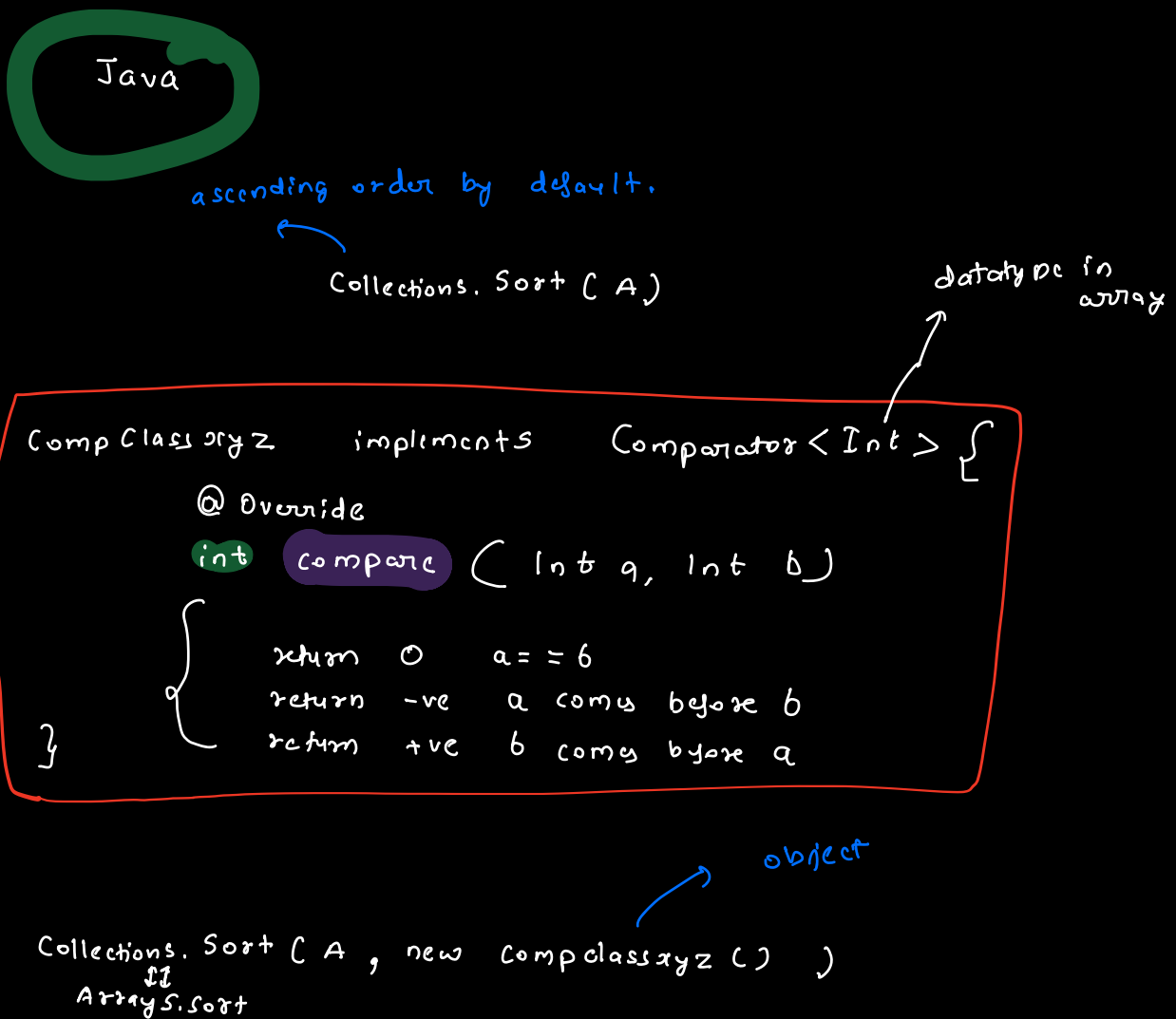
```
int main()
{
    ....
    Sort ( arr.begin(), arr.end() )
    ....
}
```

datatype in array

```
boolean compxyz ( int a, int b )
{
    Return True    a = b , a < b
    Return False   b < a
}
```

```
int main()
{
    ....
    Sort ( arr.begin(), arr.end(), compxyz )
    ....
}
```

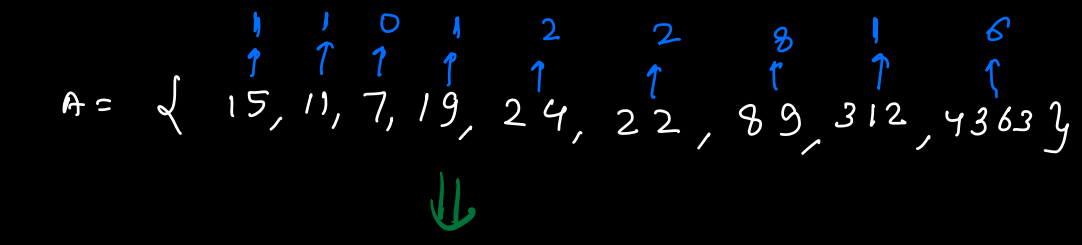
method name



Q. Sort in increasing order of tens place

If number < 10, assume tens digit = 0

If 2 number have same tens digit, larger number comes first.




```
CompClassXyz implements Comparator<Int> {
    @Override
    int compare (Int a, Int b)
    {
        int a1 = (a/10) %10
        int b1 = (b/10) %10
        If (a1<b1) return -1
        If (a1>b1) return +1
        → If (a1!=b1) return a1-b1

        If (a>b) return -1
        If (b>a) return +1
        If (a==b) return 0
        → return b-a
    }
}
```

```
Public Class Solution {
    Public _ Solve ( int[] A ) {
        Sort ( A, new CompClassxyz ( ) ) ;
    }
}
```

any name

Tc for sorting

$O(N \log N * \text{Tc of comp})$

O(1)