



# Implementing Bubble Sort Algorithm in java

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};
```

numbers = [3 5 2]

```
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 5 2]  
swap = true

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
while(swap) true  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
}  
  
//print out the sorted array  
for(int i = 0; i<numbers.length;i++)  
{  
    System.out.print(numbers[i]+",");  
}
```

numbers = [3 5 2]  
swap = true

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 5 2]  
swap = **false**

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 5 2]  
swap = false  
i=1

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  false  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 5 2]  
swap = false  
i=1  
numbers[0] = 3  
numbers[1] = 5

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i]) true  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 5 2]  
swap = false  
i=2  
numbers[1] = 5  
numbers[2] = 2

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 **2** 5]  
swap = true  
i=2

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap) true  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 2 5]  
swap = true

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 2 5]  
swap = false

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i]) true  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [3 2 5]  
swap = false  
i=1  
numbers[0] = 3  
numbers[1] = 2

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
}  
  
//print out the sorted array  
for(int i = 0; i<numbers.length;i++)  
{  
    System.out.print(numbers[i]+",");  
}
```

numbers = [2 3 5]  
swap = true  
i=1

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i]) false  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [2 3 5]  
swap = true  
i=2  
numbers[1]= 3  
numbers[2] = 5

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
while(swap) true  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
}  
  
//print out the sorted array  
for(int i = 0; i<numbers.length;i++)  
{  
    System.out.print(numbers[i]+",");  
}
```

numbers = [2 3 5]  
swap = true

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [2 3 5]  
swap = false  
i=1

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  false  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [2 3 5]  
swap = false  
i=1  
numbers[0] = 2  
numbers[1] = 3

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  false  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [2 3 5]  
swap = false  
i=2  
numbers[1] = 3  
numbers[2] = 5

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  false  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

numbers = [2 3 5]  
swap = false

# Bubble Sort - Java implementation

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap)  false  
{  
    swap = false;  
    for(int i = 1; i<numbers.length;i++)  
    {  
        if(numbers[i-1] > numbers[i])  
        {  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
}  
  
//print out the sorted array  
for(int i = 0; i<numbers.length;i++)  
{  
    System.out.print(numbers[i]+",");  
}
```

numbers = [2 3 5]  
swap = false

Output:  
2  
3  
5

# Practice

```
int []numbers = {3,5,2};  
boolean swap = true;  
  
while(swap){  
    swap = false;  
    for(int i = 1; i<numbers.length;i++){  
        if(numbers[i-1] > numbers[i]){  
            //swap the numbers  
            int temp = numbers[i-1];  
            numbers[i-1] = numbers[i];  
            numbers[i] = temp;  
            swap = true;  
        }  
    }  
  
    //print out the sorted array  
    for(int i = 0; i<numbers.length;i++)  
    {  
        System.out.print(numbers[i]+",");  
    }  
}
```

# Exercise

- Change the int array to a String array and sort it according to the length of the Strings.

# Exercise Review

```
String[] strings = {"apple", "orange", "pear"};
boolean swap = true;

while(swap){
    swap = false;
    for(int i = 1; i<strings.length;i++){
        if(strings[i-1].length() > strings[i].length()){
            //swap the strings
            String temp = strings[i-1];
            strings[i-1] = strings[i];
            strings[i] = temp;
            swap = true;
        }
    }
}

//print out the sorted array
for(int i = 0; i<strings.length;i++){
    System.out.print(strings[i]+",");
}
```