ÇANKAYA UNIVERSITY

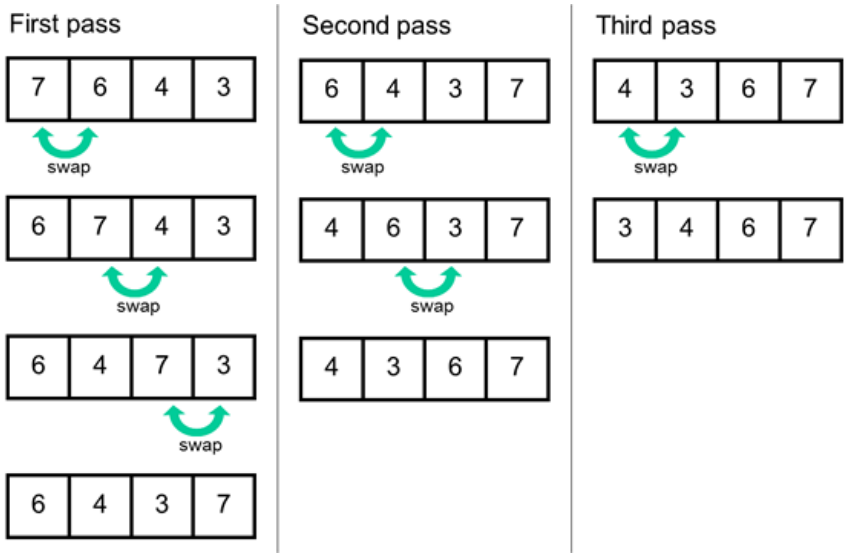
SENG 201 Data and Game Structures

Lab Assignment 3

This assignment is designed to help your understanding for sorting using bubble sort algorithm.

Implement the **Bubble Sort** algorithm. Bubble Sort is a simple sorting algorithm that repeatedly steps through the list, compares adjacent elements, and swaps them if they are in the wrong order. The pass through the list is repeated until no swaps are needed, which indicates that the list is sorted.

Write a function `public static void BubbleSort( int[] arr, boolean reverse )` that takes an array of integers and a reverse flag as input and sorts the array using the Bubble Sort algorithm **in ascending order** if the reverse is false, **descending order** if the reverse is true. Figure below shows how the algorithm works:



You can start with the following template code. Test your code with different integer arrays both with ascending and descending orders!

```
public static void main( String[] args ) {
      int testArray[] = { 4, 12, 3, 26, 18, 1, 55 };

      BubbleSort( testArray, false );

      for( int i : testArray ){
            System.out.print( i + " " );
      }
      // should print 1 3 4 12 18 26 55
}
public static void BubbleSort( int[] arr, boolean reverse ){
      // write your code here
}
```

You should submit one zip file name as **"YourNameSurname_Lab3.zip"** and it should contain the java file you created!