CO322: Data Structures and Algorithms
Sorting Algorithms

Aim: the aim of this laboratory is to implement 3 sorting algorithms and compare their performance when sorting different input sizes with different configurations. In class we have analyzed the algorithms and derived their theoretical run times. Here we would compare the theoretical results with the empirical one (performance you get from experiments).

Your task:

- Download the skeleton code from LMS.
- Implement the bubble, selection and insertion sort algorithms. Make sure your test your implementations before continuing. How would you test your implementation? If your implementation works for a single input is that enough? How would you change the input?
- Measure the performance of the 3 algorithms for different input sizes for the worst and the best cases. Use time functions provided by Java with appropriate care to measure the run-time

What to submit:

- Submit the implementation you used for measurements.
- Submit a report explaining the following;
  - How does the performance vary with the input size
  - Does the empirical results you get agree with theoretical analysis?
  - How did/should you test your code. Explain the test cases you used and the rationale for use them.

You will be given marks for the report and the implementation. Submit the code and report in pdf format via the LMS before the deadline. **Deadline 29/06/2021.**