Motivation

Sorting algorithms, such as bubble sort, selection sort and merge sort, are the most basic algorithms for beginners. To better understand algorithms and related areas in computer science, learning sorting algorithms as the rudiments of algorithms is a great choice.

Our project plan focuses on helping beginners learning sorting algorithms and their correctness. We have found that their correctness is not easy to understand for beginners because of how the algorithms work is not directly perceived. Research has been taken to show that visualising the sorting algorithm might help to solve this problem. Rudder et al. (2007) claimed that animations and visualisations could help present those abstract concepts in an easy-understanding way.

Aims and Objectives

Thus, Team 10 comes up with the idea of creating a game-like learning tool with the animation feature to achieve visualising sorting algorithms. The main picture is that the software will give a taste at the beginning by providing some easy tutorials. After that, it will provide several modules for users to learn different algorithm principles and their correctness in a simplified way. During the process, explanations and guides will be displayed with an animation. Finally, exercises will be provided for them to check whether they understand well enough.

Description of work

As planned, the Agile development process and TDD would be used to ensure everything is expected and under control. One month will be spent on the requirements and specifications. Interview, focus group and other requirement gathering activity will be taken. After that, four months would be spent on designing the software. Finally, two months will be spent to evaluate the quality of code, UI and functions by unit test and maintenance.