# SIT102 Introduction to Programming

## Distinction Task 6.3: Sort Visualiser

### Overview

In this task you will develop a program that sorts an array of random values, drawing each of the steps to visualise the process that the sort algorithm is using in order to achieve the outcome.

#### Submission Details

Use the instructions on the following pages to create a small program to explore the use of arrays.

Submit the following files to OnTrack.

- Your program code
- A link to a screencast of the program in action in a pdf

The focus of this task is on working with an array of values.

## Instructions

Get started by watching the Sort Visualiser video, and following the steps shown to get the simple bubble sort working, and being shown to the screen.

Once you have that working, make the following changes to complete your project:

1. Research some of the different sort algorithms, and select a different algorithm that you will include in your program. Use the following criteria to guide your selection:
    - It must have an average time complexity of O(n log n) - you should find out what this means in your research of the algorithms
    - You need to make sure that your program illustrates the swaps that are occurring within the algorithm as it runs
2. Implement your algorithm, and use a different key stroke to start it (eg. `S` was for bubble sort)
3. Add comments to your sort procedure to briefly describe how it works.
4. Once you have your algorithm working record a screencast and upload to your favourite video sharing service (eg. YouTube). Include the link in the comments at the top of the program file before submitting to OnTrack and also state that link in a pdf submitting to OnTrack.

### Task Discussion

Discuss the following with your tutor to demonstrate your understanding of the concepts covered.

- Explain how your sort algorithms work. Which is faster? why?