Classes and Objects

So far, SIT102 has focused on procedural programming concepts, using control flow, functions and procedures, and structured data to organise our code and instruct the computer on what we want achieved. With these concepts mastered, we are ready to consider a new approach to programming – the object-oriented style of programming.

Learning Goals

To complete this task, you need to demonstrate that you can do the following:

- Explain the difference between a class and an object.
- Create a class that includes constructors, methods, fields, and properties.
- Create and use objects from classes.

Focus

As you work through this task, focus on the following aspects of the unit:

- **Programming concepts:** Focus on how the conceptual idea of an object as something that has an identity and knows and can-do things. Think about how this way of thinking lets you focus on building your digital reality.
- **Programming process:** Focus on how much of the process remains the same, but now we think at a higher-level. Modelling what objects of our classes are responsible for knowing and doing.
- **Coding**: Focus memorising the syntax for class declaration, object creation and object use.
- **Professional competencies:** Focus on your adaptability, look to see how new ideas build on what you already know. Computing is always evolving, so the best professionals are constantly learning new things to stay relevant.

Your Task

For this task you will need to submit the following:

- A PDF document containing:
  - Summaries and reflections.
  - Screenshots of your programs running
  - Learning Journey and Resources
- Source code for your
  - Greeting program
  - Light simulator programs

1. Complete Learning Activities

Work through these steps to develop and demonstrate your understanding. Aim to demonstrate, to yourself and others, that you have achieved the learning goals.

1. Everything you need is in Member Functions from Part 2, and Introduction, Welcome Back to C#, and Classes and Objects from Part 3 of the Field Guide.
2. Follow the Putting it Together instructions to build and run the greeting and light simulator programs.
3. Prepare your summary, making sure to cover all learning goals and related concepts. Remember that this is a personal summary that demonstrates your understanding of the concepts.
4. Prepare your reflections by responding to the following:
   - How do you know you have achieved the learning goals?
   - What is the most important thing you learned from this and why?
   - How does the content or skills learned here relate to things you already know?

5. Capture your learning journey and collate your evidence of study and practice.

2. Upload Your Submission & Engage with Feedback

Mark the task as **Ready for Feedback** and upload the required files. Make sure to keep copies of these in case you need to resubmit. Then actively engage with the feedback process to get the task Complete!