Unit 5: More on Classes

Welcome to Week 5.

This week, we explore the concept of classes in Python further, in the sense of assigning variable values using a constructor, in addition to the use of an abstract class. Our examination of Python continues with an understanding of the modularity of Python, and the approaches to facilitating this using inheritance, aggregation, and composition.

In this unit we shall:

- Consider the modularity of object oriented code and the use of abstract classes to facilitate inheritance.
- Examine the different ways in which inheritance is enabled, using polymorphism, aggregation and composition.
- Realise the role which is played by packages and namespaces in relation to variable naming.

On completion of this unit you will be able to:

- Create a Python program which uses a constructor and abstract class.
- Describe the concepts of polymorphism, aggregation and composition.
- Name variables according to the namespace within which they exist.

Practical work this week will support further understanding of how to extend the development of a Python program by using a constructor and abstract class within a Python program. This will be core to supporting the development required for the coding contribution of the summative assessment.

Lecturecast | 1 hr

In this lecturecast, you will:

- Outline how to create an object-oriented program using Python.
- Recognise the role played by a constructor in a Python program.
- Identify the way in which inheritance supports object orientation (in Python and Java).
- Consider the organisation of an object-oriented program in a namespace and package and the way that this eases the development process across a distributed team.

Classes

Reading | 4 hrs

The reading this week focusses on the use of polymorphism in Python programs.

Unit 5 Reading

Formative Activities | 2 hrs

Prepare for next week's seminar by reviewing the preparation material available in Unit 6.

Pratical Activity - Inheritance | 5 hrs

Review chapter 18 of the '**Think Python**' book to help you understand this week's concepts. to help you better understand this week's concepts. Use card.py to understand the chapter's contents. Review the code by using the guidance in the book.

You can discuss your work with your tutor and save your results in your e-portfolio.

e-Portfolio Activities | 5 hrs

e-Portfolio Activity: Polymorphism