Object-Oriented Programming (OOP)

Report of Contributions

Contribution ID: **1** Type: **not specified**

Day 1: Welcome

Monday 2 December 2024 10:00 (15 minutes)

Contribution ID: **2** Type: **not specified**

Objects

Monday 2 December 2024 10:15 (30 minutes)

Get to know the idea behind the central concept of object-oriented programming.

Session Classification: Lessons

Contribution ID: **3** Type: **not specified**

Classes

Monday 2 December 2024 10:45 (45 minutes)

Abstracting from individual objects, classes can be used to describe data types that share a common structure and behaviour.

Session Classification: Lessons

Contribution ID: **4** Type: **not specified**

Methods

Monday 2 December 2024 12:30 (45 minutes)

Class-related functions can be used to describe the possible operations that can be executed on individual objects.
The constructor is a notable special case.

Session Classification: Lessons

Contribution ID: **5** Type: **not specified**

Exercise: Objects, Classes, Methods

Monday 2 December 2024 13:15 (30 minutes)

Implement your own classes and instantiate objects from them to practise what you have learned so far.

Session Classification: Exercises

Contribution ID: **6** Type: **not specified**

Composition

Monday 2 December 2024 14:30 (1 hour)

Use the concept of composing classes from others to break down complicated problems into more manageable pieces..

Session Classification: Lessons

Contribution ID: **7** Type: **not specified**

Exercise: Composition

Monday 2 December 2024 15:30 (30 minutes)

Pracise the newly acquired knowledge to model a structure composed of multiple individual classes.

Session Classification: Exercises

Contribution ID: **8** Type: **not specified**

Day 2: Welcome

Tuesday 3 December 2024 10:00 (15 minutes)

Contribution ID: **9** Type: **not specified**

Class Attributes and -Methods

Tuesday 3 December 2024 10:15 (45 minutes)

Learn about Attributes and Methods that are shared between (and independent of) the individual instances of a class.

Session Classification: Lessons

Contribution ID: **10** Type: **not specified**

Exercise: Class Attributes and -Methods

Tuesday 3 December 2024 11:00 (30 minutes)

Implement your own class-related members.

Session Classification: Exercises

Contribution ID: **11** Type: **not specified**

Inheritance

Tuesday 3 December 2024 12:30 (1h 30m)

Create specialized cases of the classes with adapted behaviour without re-writing the commonalities.

Session Classification: Lessons

Contribution ID: **12** Type: **not specified**

Exercise: Inheritance

Tuesday 3 December 2024 14:30 (1h 30m)

Try your hand at creating sub-classes to specialize the behaviour of our example setup.

Session Classification: Exercises

Contribution ID: **13** Type: **not specified**

Day 3: Welcome

Wednesday 4 December 2024 10:00 (15 minutes)

Contribution ID: **14** Type: **not specified**

Various Topics

Wednesday 4 December 2024 10:15 (1h 15m)

Various related topics driven by learner interest, including UML Diagrams, Composition-over-Inheritance-Principle, and Design Patterns.

Session Classification: Lessons

Contribution ID: **15** Type: **not specified**

Individual Exercises

Wednesday 4 December 2024 12:30 (1h 30m)

A chance to complete exercises, that you have not done yet while having access to individual feedback. Also a good opportunity to talk about individual questions and get advice on how to approach your individual research software questions.

Session Classification: Exercises