

Further Software Development

Introduction to the module

Introduction

Teaching
Team



NetBeans and
why Java



Overview of
the
assessment

Introduction to the teaching team

Module Leader and Tutor

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Moodle

- **Moodle will be used for:**
 - In Course Assessment submission, feedback, and marking
 - Module announcements
 - Learning materials

What is this module all about?

- In this module you will learn how to program using the Java programming language
 - Fundamentals of programming
 - Introduction to the Java standard API, such as the Collections API
 - Object-oriented Programming (Classes; Abstract classes; Interfaces; and associated concepts)
 - Introduction to a couple of design patterns to help improve architecture
 - Introduction to Graphical User Interface (GUI) programming using the Swing API
- You will learn how to design and implement solutions to a given problem using Java and NetBean an Integrated Development Environment (IDE)
- Anyone can learn programming, but persistence is required
- Programming is a skill that must be practised, like a foreign language
- Always seek help if struggling

Why do we teach you Java?

- Plenty of languages to pick from (C++, C#, PHP, VB.NET, Ruby etc.)
- We picked Java because:
 - It is platform independent (write once, run anywhere)
 - It has a good set of free development tools
 - It is object-oriented (good for teaching OO concepts)
 - It is easier to learn than some other OO languages (e.g. C++)
 - It is used to learn about mobile app development in semester 2
 - It is everywhere
 - It is secure, multi-threaded, robust ...etc.

Java job prospects

- One very important reason - the ability to program in Java is a marketable skill
 - C# and Java are the programming languages the most in demand in the UK
 - The languages are more or less identical
 - If you learn Java you can convert to C# easily, and vice versa
 - We picked the most mature language
 - The average salary for a permanent IT job matching 'JAVA' in the last 6 months was £80,000
 - The average salary for a permanent graduate developer job in the last 6 month was £29,250
- Keep track of IT jobs and in-demand skills [here](#)

NetBeans



Java
Development Kit
(JDK):



Apache NetBeans IDE 22



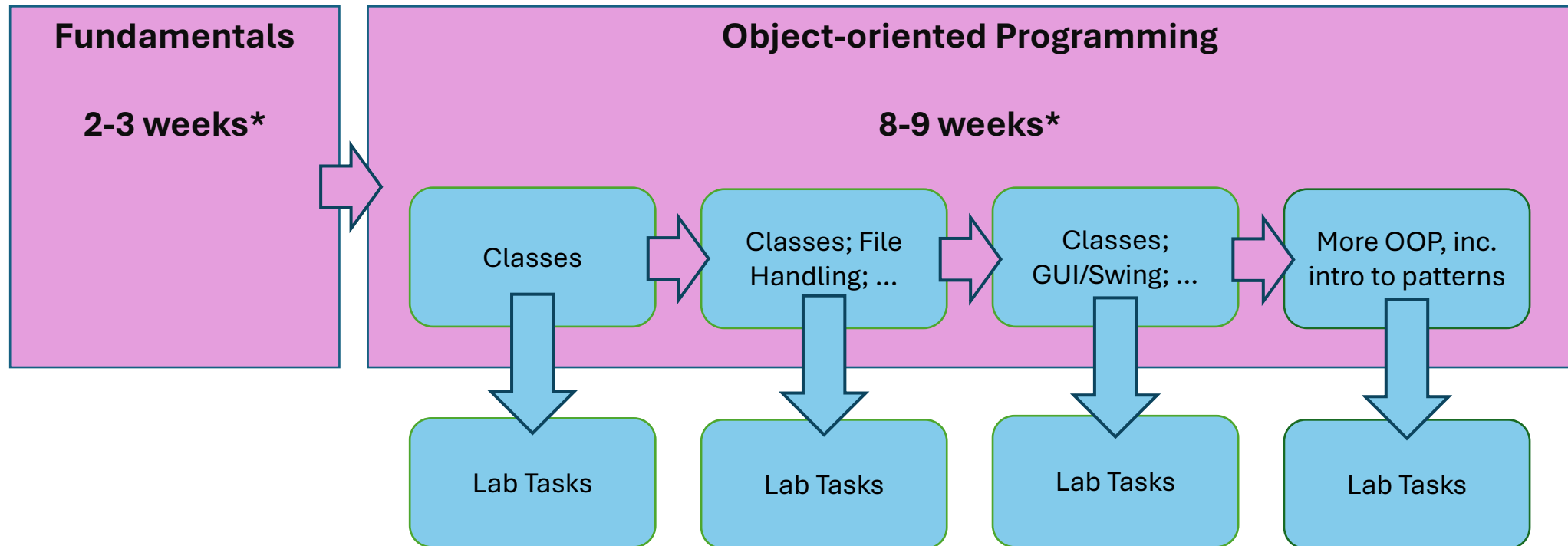
Download -
<https://netbeans.apache.org/download/index.html>



Independent Study Time

- Most of your learning hours for this module do not appear on your timetable
- For every hour spent in class, you are expected to work for 2 hours outside of class.
- This means you should budget for 6 hours of Java ‘independent study time’ per week.
- Why not block out two free mornings/afternoons each week?
 - Study Time should be used for:
 - Practising your programming skills / worksheets.
 - Reading books about Java.
 - Completing practical exercises.

General Structure



***the timings are indicative only – depending on progress during the module**

Case Study 1

[50%]

Individual submission – Artefact and Report

- You will research and investigate a real-world problem, analyse an existing application, and then synthesize your findings into a new application with some functional similarities
- Your goal is to enhance the current application and provide a comparison between the two
- In this project, you will take on the roles of Project Lead, Developer, and Tester

Case Study 2

[50%]

Build the system as an Android Mobile App

You will develop a functional mobile app that satisfies the requirements of the 1st application

Apply knowledge and skill from Case Study 1



100% individual assessment

Programming is craft requiring considerable effort and practice

You must practice

Everyday

You learn programming by programming!

Everyday

We'll sign post what you need to practice

You must practice

Everyday