Pearson Institute
of Higher Education

Basic and Advanced Java Programming

JAVA

Programme duration

128 hours
Option of weekend or evening classes

Qualification description

The basic module introduces students to the basic concepts of Java. This covers basic data structures that Java uses and the fundamental concepts of object-oriented programming.

Moving onto the Graphical User Interface in Java, the module looks at how Swing components in Swing containers using custom layout managers can be used to create Graphical User Interfaces. The ability to attach events to components enables functionality to be added using the Event Delegation Model and AWT Components as well as writing an application in a threaded environment. This section also looks at how to write a basic applet/application that makes use of images and animation, and the HTML code necessary to run an applet in a browser.

Building on the basics features such as exceptions and how to handle them, the Collections framework and Collections hierarchy, how to use Sets, Maps, and Lists, regular expressions and what they are used for as well as how to use the various Pattern and Matcher classes. Students will also look at Java packages and classes including how access modifiers work, how they influence programs, and how to use packages to organise programs. The final part of the section looks at Java Beans and what they are used for, and which development tools are used to create Java Beans.

The advanced module builds on the basic module. Students are introduced to Java Enterprise Edition technologies for web development. Students also learn how to create applications for use on Android mobile devices. Students will combine a wide variety of web-related technologies to develop dynamic web-based applications. Students will learn all the basic techniques and elements used in JavaServer Pages (JSP), and will also learn how to write their own JSP custom tags, and how to retrieve records from databases and display them in JSPs. Taking students through how to create Web Services. XML parsing and JSON are compared leading to Java API options for SOAP web service delivery and the implementation of REST-ful architecture.

The final element of the module will focus on building applications for use on Android devices, using the Android Studio.

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