

“Object-Oriented Programming in Java” Course Content

Day	Topics	Sub-Topics	Learning Outcomes	Trainer	Duration (hrs/min)
1	Fundamentals of Java	Classes, static methods, primitives and arrays, variables, if and switch, for, while, do / while, assertions	The trainee will write simple Java applications which create meaningful text-mode output	Avinash Meetoo	3:00
	Input/Output	Classes and objects, variables and instances, java.io, exceptions	The trainee will write Java applications which interact with the user in text-mode by using the facilities found in the java.io classes and by handling exceptions	Avinash Meetoo	3:00
2	String Manipulation	String, StringBuffer and StringBuilder, java.text, java.util.regex	The trainee will write Java applications that can handle strings of characters and manipulate them in various ways including searching for content using regular expressions	Avinash Meetoo	3:00
	Collections	Primitive wrapper classes, autoboxing and unboxing, java.util, collection classes, hashCode and equals, Generic Set, List, Map, navigable sets and maps	The trainee will write Java applications which use the predefined Java collection classes like sets, lists and maps to manage data so that sorting and searching are efficient	Avinash Meetoo	3:00
3	Object-based programming	Classes and objects, non-static methods, constructors, garbage collection and finalize, JavaBeans conventions	The trainee will write object-based Java applications which feature tight encapsulation, loose coupling and high cohesion	Avinash Meetoo	3:00
	Object-oriented programming	Inheritance, overriding and overloading, polymorphism, Unified Modeling Language (UML)	The trainee will write object-oriented Java applications which use inheritance and polymorphism to promote code reuse	Avinash Meetoo	3:00
4	Design Patterns I	Structure, Creational, Structural and Behavioral patterns, Singleton, Façade	The trainee will write Java applications based on design patterns which are general reusable solutions to a commonly occurring problem in software development.	Avinash Meetoo	3:00
	Design Patterns II	Observer, Composite, Java object serialisation	The trainee will write Java applications managing complex graphs of objects using advanced design patterns and which use the Java object serialisation facilities for persistence	Avinash Meetoo	3:00
5	Generics	parameterized types, wildcard types, bounded wildcards, generic methods	The trainee will write generic classes and methods to improve the readability and robustness of large applications	Avinash Meetoo	3:00
	Concurrency	java.lang.Thread, java.lang.Runnable, states and transitions, object locking, wait, notify and notifyAll	The trainee will write concurrent applications with multiple threads of execution using the facilities found in java.lang	Avinash Meetoo	3:00