Environment/Tools

● JDK 1.8

● Eclipse-JEE or Spring Tool Suite

● JUnit 4.x

● Maven 3.x

● Git

Monday

● Installation: IDE

● Installation: Git

● Introduction to Java: Why Java?

● OOP concepts in depth: Polymorphism, Encapsulation, Inheritance, and Abstraction

● First Java Program: HelloWorld, new, naming conventions

● JVM, JRE, JDK

● Garbage Collection

● Constructors

● Methods and parameters

● Scopes of a variable in Java

● Control Statements

● Intro to Git (git add, push, pull, commit, clone)

Tuesday

● Array

● varargs, for each loop

● Packages and Imports

● Access Modfiers

● String API

● StringBuilder and StringBuffer

● Exception Handling- try, catch, finally

● Checked vs Unchecked Exceptions

● Wrapper Classes

● Reflection

● Method Overloading and Overriding

Wednesday

● Inheritance

● Interfaces

● Abstract classes

● Read from console(Scanner)

● File I/O: FileReader/FileWriter

● Serialization

● Introduction to Maven

● Maven Repositories

● Maven Project Object Model (POM)

● Introduction to unit testing

● J-Unit Introduction

● assert methods

● Annotations with J-Unit

● Paired programming intro

Thursday

● Collection Framework

● List, Set, Map Interfaces

● Using the iterator

● Comparing Objects

● Generics

● Object class

● equals and hashcode

Friday

● Creational design patterns: Singleton and Factory

● Java 8 concepts- Lambda & Functional Interfaces

● Thread model

● Runnable Interface and Thread class

● Multithreading

● Using isAlive() and join()

● Synchronization

● Deadlock

● Producer/Consumer Problem