Sapient Exercise Code Example

Lift Engine Simulation

0 Overview

0.1 Purpose of this document

This document is meant to give detailed information of the Lift Engine Simulation Coding and Testing Process Process. It provides a brief explanation application and software stack and coding practices.

## 0.2 Definitions, Acronyms and Abbreviations

|  |  |
| --- | --- |
| LFE | Lift Engine Simulation |
|  |  |
|  |  |
|  |  |
|  |  |

## Coding Exercise document

##### [Lift Simulation\_Sr\_Associates\_and\_above.pdf](Lift%20Simulation_Sr_Associates_and_above.pdf)

# Application stack

## IDE

Eclipse Version: Kepler Service Release 2

Build id: 20140224-0627

## build Tools

Maven 3.X

Reporting and Cobertura Plugins

Dependency Administration

JAR Package and Console Application

## Java version

Compiles 1.7+

## Java Features

Java Core

Java Collections and Concurrent

List, ArrayList in Thread Safe Operations

CopyOnWriteArrayList in Concurrency Operations

Java Threads

## other frameworks

Spring 4.x

Dependency Injection

Memory Administration

Java Based Configuration xml-less

Unit Testing support

JUnit and Mockito

Unit Testing

Apache Commons

String Thread Safe and Null Safe Operations

Log4J

Log diagnostics to Console

## Some Desing Patterns

Singleton based in Spring Beans

Listener based in Shared Objects

MVC Approach with some variations

Consumer-Producer approach and synchronization

## Some coding best pratices

Uses of Interfaces rather than Abstract Classes

Adding Unit Testing to most of the modules

Use of Concurrent Data Structures and Coding in Thread Safe Mode

# class diagram

## 

# build process

## pre-conditions

* Java 1.7+ installed
* Maven 3.x installed or install from <https://maven.apache.org/download.cgi?Preferred=ftp://mirror.reverse.net/pub/apache/>
  + Make sure you add %MAVEN%\bin to your Path

## Build steps

* Unzip the file to the folder of your preference
* CD to your Folder
* Type the following instruction: **mvn clean install**
  + This instruction will compile the code and will execute the testcases
* Once finished the past step, please type the following instruction: **mvn cobertura:cobertura**
  + This instruction will create a full Test Unit Coverage report under the folder **Your-Path\target\site\cobertura\index.html**

# Execute THE PROGRAM

