Micro Services For JEE

Lab Book

Document Revision History

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| --- | --- | --- | --- |
| Date | Revision No. | Author | **Summary of Changes** |
| January 2020 | 1.0 | Rahul Vikash | Created new lab book as per course contents |
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Table of Contents

*Getting Started..……..…………………………………………………………………………… 4*

[Overview 3](#_Toc30190626)

[Setup Checklist for Microservices 3](#_Toc30190627)

[Instructions 3](#_Toc30190628)

[Lab 1. Micro Service with Spring boot 6](#_Toc30190629)

[Lab 2. MicroService With Eureka & Circuit Breaker Pattern- Hystrix 7](#_Toc30190630)

[Lab 3. MicroService With Swagger, Actuators, Profiles 8](#_Toc30190631)

[Lab 4. MicroService With Spring Boot with Thymeleaf 9](#_Toc30190632)

[Lab 5. MicroService With Spring Boot with Thymeleaf with Spring Security & Outh2.0 10](#_Toc30190633)

Getting Started

## Overview

This lab book is a guided tour for learning Microservices For JEE version and above. It comprises ‘To Do’ assignments. Follow the steps provided to work out the ‘To Do’ assignments given.

## Setup Checklist for Microservices

Here’s what is expected on your machine for the lab in order to work.

Minimum System Requirements

* Intel Pentium 90 or higher (P166 recommended)
* Microsoft Windows XP, Windows 7 or Windows 8
* Memory: 2GB of RAM (1GB or more recommended)
* Google Chrome 36.0 or Mozilla Firefox 31.0 or Internet Explorer 10 or above

Please ensure that the following is done:

* A text editor like Notepad or Notepad++ or Eclipse Luna is installed.
* STS should be installed

## Instructions

* Create a directory by your name in drive <drive>. In this directory, create a subdirectory Microservices \_assgn. For each lab exercise create a directory as lab <lab number>.

**Case Study Problem Statement**

A new age e retailer SunHome.com is looking to build a ecommerce website. This scenario focuses on building microservice for shopping cart functionality which can be used with various user interfaces like web, mobile Design a Microservice architecture based Shopping cart solution.

Shopping cart should have following functionality

1) Product Catalogue

2) Price

3) Stock

4) Build a Recommendation based on items in shopping cart

You have a functional shopping cart except the point of checkout. Solution Hints: Apply the various rest and Microservice principals we have gone though. Consider you have web front end available to user to place the requests, you do not need to design that.

Our focus area should be to identify the business functional and entities and their interactions.

✓ You will search the catalogue

✓ Select a product

✓ Check its price

✓ Add it to the cart

✓ Recommend similar products based on what is added to the cart.

Solution Deliverable Outcome should identify all business entities and their communications. Break the business functions in appropriate Microservice and define the communication style between them.

1. Micro Service with Spring boot

|  |  |
| --- | --- |
| Goals | * Understand the Microservice with spring Boot with H2 Database |
| Time | 180 minutes |
|  |  |

Create an Spring Boot with Micro service Application as per the **Case study Given Above ,**

Create a Rest End Points & all End Point will be access from main Spring boot Application

1. We need to first check all REST EndPoint using POSTMAN
2. Call this End Point from Spring Boot Main Application

## 

1. MicroService With Eureka & Circuit Breaker Pattern- Hystrix

|  |  |
| --- | --- |
| Goals | * Eureka & Circuit Breaker Pattern |
| Time | 180 minutes |

Apply Eureka & Circuit Breaker Pattern in Lab1

Configure All your REST End Point on Eureka & apply Circuit Breaker Pattern (using Hystrix)

1. MicroService With Swagger, Actuators, Profiles

|  |  |
| --- | --- |
| Goals | * Swagger, Actuators & profiles |
| Time | 90 minutes |

Apply Swagger, Actuator & Profiles in Lab2

Configure All your REST End Point with

1. With Swagger(do documentation)
2. Add Logger
3. Check all REST End Point health
4. Create 2 Profiles dev, prod , Development will use H2 Database & Production will Use Mysql

1. MicroService With Spring Boot with Thymeleaf

|  |  |
| --- | --- |
| Goals | * Spring boot With Thymeleaf |
| Time | 180 minutes |

Create Spring boot MVC Application with Thymeleaf as Front end which consumes all REST EndPoint . All REST End Points will be same as Lab 3

1. MicroService With Spring Boot with Thymeleaf with Spring Security & Outh2.0

|  |  |
| --- | --- |
| Goals | * Spring boot With Thymeleaf ,Spring Security & Outh 2.0 |
| Time | 180 minutes |

Create Spring boot MVC Application with Thymeleaf as Front end which consumes all REST EndPoint . Do Login with

1. Using Spring Security User Name & Password coming from MySql DB
2. Login using Outh 2.0 (either Google or Amazon or FaceBook or GitHub)