

Name: Jimmy Palma ID:610756

### **Situation:**

JVMConsultant is a software company which its main brand is located in Warren Michigan. JVMConsultant has different clients as General Motors, and so on.

I work for General Motors as Full Stack Developer. My manager is Marco Carnevale, who works from Canada, and I work with 9 more people. Depending of the task complexity, we work in pair programming or individually.

General Motors has different teams focused in many areas like mobile, sales, etc. The team I belong to is called onStar Home, but our team works in pair with two other teams called Mobile onStar and onStart Tool.

### **Project: Mobile OnStar**

General Motors has a product called onStar which provides direct communications with the clients by the smartphone. The communications could be oriented in man and areas like in vehicle security, emergency services, navigation and remote diagnosis for many problems related with the car.

The project has Front end and back end. The front end works for Android, iPhones devices and web developed in Angular.

The back-end is developed in Java with Framework Spring boot.

The users register by the smartphone to the onStar product with different options. Trial, is free for one month, and regular which is for three months.

The Mobile team develops mobile applications in native Android and iOS.

The onStart home develops the web application and back-end spring boot application.

The onStart tools is in charge to develop external services used in Spring boot.

The workflow is basically from the devices, the users can access all the offers and subscriptions offered by General Motors. When the user selects and wants to register in one type of subscription, the android/ iOS displays a web view which calls and shows the angular project to register and, depending of the offer, pay for the subscription.

There are some types of offers, a trial that is one month free, this one no need credit card and in fact no need to pay. So, the user as soon select this offer, the angular project automatically registers the user for one month free.

The others options require credit card so the angular project displays the payment component to save a credit card and pay for the offer.

**Task:**

As Full stack developer, I work in the front end and back-end tasks. I develop the subscription microservices. In the back-end, the task is to register the users in the different plans. In the front-end consume the microservices.

The system has been developed for a couple years; therefore, the system is available now for the users. Now in production there are available some services such as register for plans.

The main purpose for the project is to increase the access to the services, increases the benefits.

Besides the microservices in Spring boot, I work in the Angular project in the front end. My current task is to obtain the offering codes sent by mobile application and, in the back end, distinguish the offer type and return the proper information to Angular project. In the case of some flags, the angular projects routes to the correct screen. If the offer does not require credit card, the back end register the user and return the flag false to the front end. With this field false, the angular shows a success message.

In the case the offer requires credit card, the back end returns true to the front end and with this flag the angular project display the payment component where the user has to register the credit card and pay for the offer.

**Action:**

In this project, the topics studied in Enterprise Architecture, help me in the process to develop applications in Spring Boot and Microservices. For this purpose, I have applied subjects like RestController, Spring Security and all the topics related to Web Services.

For the front end, I based all my knowledge in the Modern Web Applications, where I studied all related to Node, Angular and Typescript and the communications with the Back end.

In the angular project I have to extract the offering codes from the URL sent by mobile application, the way to access the URL params is with `window.location.search`. Once the offeringCodes are extracted, they are stored in the chrome storage so the angular project can get them anytime needed.

The offeringCodes are sent by HttpClient to the back end to process them and verify all the information needed from the front end.

The back-end process all the information needed for the offer and return the fields required, so the front end can validate the fields and display the correct screen to the users.

General Motors works with agile methodologies, we work with Scrum and we have all the roles explained in Software Engineering such as Project Owner, Scrum Master and developers. For Scrum, we have scrum meeting every morning to say all the Tasks we worked yesterday and the tasks we will work today. In these meetings, we discuss possible solutions for problems and ask the Product Owner about the business.

**Result:**

The users can access all the services from General Motors from the devices Android and iPhone. All the Microservices are published in the Azure Cloud.

The users can contract two plans, the first one is one month trial and the other plan is three months plan.

Currently the team is testing the mobile application in the last Operative Systems like Android 12. The OnStar application is not android or iOS native so it should not have problems but the QA team tasks is to test it.

To test all the workflow, every team has to work together because the data belongs to all the teams. If the mobile team pass the test, this data passes to onStart home project, if all the test passes, the data goes to the back end to finish the process. This is a big work team to test all the workflow.

Besides, unit tests are developed, so every time the application is published in Azure Cloud, it runs all the unit test, if all passes, then the pipeline finished with a success code, otherwise, it shows an error and the application is not deployed. Therefore, we assure only good code is released.