Full stack Development in ITGI IOB Portal

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***Abstract*—During the course of Our BTP, we have worked on the development of ITGI Website, a General Insurance Company for Motor Insurance,Health Insurance,Home Insurance and many more. ITGI needs some additional features to be implemented in their website.During our internship we worked in teams. Both Rohith and Umesh were part of the front-end team where as Smit was a back-end developer. As a part of the front-end team, Both members had to work on Change Requests, Changing the UI of the website, Adding new fields in each of change requests, Validating Different Functionalities, etc. created an addtional forms to fetch details of change requests from user and used it to update that information to back to database. As a back-end we work on to add IDIT web services into back-end code and updated back-end code for change request feature to make feasible for new fields.**

***Index Terms*—ITGI, API, Front-end, HTML, CSS, Angular-6, Java, Spring boot**

I. Introduction

ITGI is an insurance company that provides car, home, health, two-wheeler, and travel insurance. Their portal serves as Management Information System for their agents where in they can view details regarding their commission, renewals, New Intermediary On-Board,change request,Termination Re-instatement,Request Tracker, policies, etc. Now, with the addition of new features to the portal, the agent can view the policy-wise details for rewards,commissions, upload bills to claim rewards, commission, GST, download TDS certificate, upload lower TDS certificate, etc. which will be helpful to their agents as well as their employees.

In the beginning of the internship they planned training for us.The front-end is developed using Angular Framework while backend is developed using Spring Boot Framework, and it uses Oracle and IBM-DB2 as its Database.for that we had to learn all the technology that need for it. we were part of the ITGI-IOB team. At that time, we were Learning the tech stack and get exposure of development while Contributing to ongoing project.

For the Project, we had
1. Daily Scrum Meetings / Daily Sync-up meetings with the team members, mentor and manager to discuss the various issues faced in the project development.
2.Weekly Meets to Knowledge Transfer with the client to ensure rewriting the code becomes easier and to ensure development as per their requirement.

II. Tools and Technologies Used

A. HTML, Sass

The finest tools for creating static User Interfaces for any web application are HTML [1] and Sass [2]. HTML (Hyper Text Markup Language) is the most fundamental component of the Internet. With the help of HTML, we can define the structure of the web content Tags in HTML include paragraphs, divisions, headings, images, and more. We can display our stuff on the web browser with the help of these tags. We can then style the information using Sass (Syntactically excellent style sheets). Sass is a CSS extension that allows you to use variables, nested rules, inline imports, and other features. It also aids organisation and allows you to produce style sheets more quickly.

B. JavaScript

If HTML specifies the meaning and structure of web content and Sass styles it, then JavaScript brings logic to the sites. It's what gives life to the web pages. It was first used in the Netscape Navigator browser in 1995 to add logic to online pages. Interfaces were static before JavaScript, and there was no way to make them dynamic. Both the client and server sides of the problem were solved with JavaScript. We can use JavaScript to make our web application more interactive. It can be utilised to improve functionality such as form validation, animation presentation, and business logic execution.

C. AngularJS

AngularJS is a structural framework for building different dynamic web applications. It allows you to utilise HTML as your template language and enhance HTML's syntax to represent the components of your application clearly and effectively. Different concepts like Data binding, dependency injection in AngularJS eliminate a lot of the repetative coding you'd have to write.

D. Java

Java is a widely used language in enterprise systems. It is used to write code for the back-end side of the application. Its Object-Oriented capabilities make easier to design and manage system code. So, it is important to familiarize with java basics to write clean code.

E. Spring boot

Spring boot is a project that is built on the top of the Spring Framework. It provides an easier and faster way to set up, configure and run web-based applications. Spring boot is used in most of java projects because of its high level features of dependency injections, embedded tomcat server, easy to use third party libraries.

III. WORK INVOLVED

These are the tasks that was needed to be done at ITGI/IOB portal,

- Change Request
- Changing UI of ITGI/IOB portal
- Add IDIT web services call.
- Resolving dependencies issues and setup db

A. Change Request

Updating already implemented Change request forms by adding new fields such as Other Documents and changing fields such as Remarks and Attachments. Adding New Change Request forms with new fields that was asked by client for different request types. here are some of the changes asked by the client.

1) Validating the File size, File Type for Attachments and Other Documents field.

- maximum size of a file cant exceed 5MB.
- Only pdfs can be uploaded for every field.
- Only one document can be uploaded in every upload section such as Attactment and Other Documents.
- Valiadting every fields such as ”Enter Pan No” , where we can only enter in the typical format of Pan Number and ”Enter Aadhar No” , where we only enter a 12 digit number.

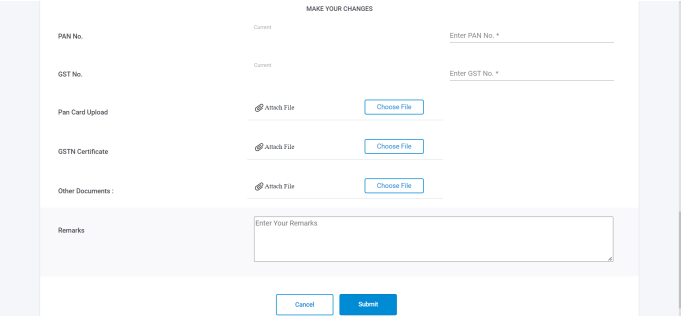

Fig. 1. Form for Change in PAN No and GST No.

2) Implement new Request Types such as

- Renewal for IRDA types such as POS, IA, MISP, etc
- NEFT Updation
- Termination/Deactivation/NOC/Reinstatement/suspended/ under review/Change expiry date,
- different field level updations such as Change in Channel Mapping, SP Details Name, Change in Aadhar Number, Change in PAN no and GST No, etc.,

3) Creating radio button for all the newly implemented change requests.
4) Add ”Other Documents” field in the form.
5) Add Dropdown list of SBU contacts for deletion of SBU.
6) Change the ”Remark” field in each form of change request to textarea.
7) Changing ”Attachment” to suitable name based on the change request.
8) Only a single document can be uploaded both for Existing and the New Change Requests.
9) Service call to soft delete required SBU.

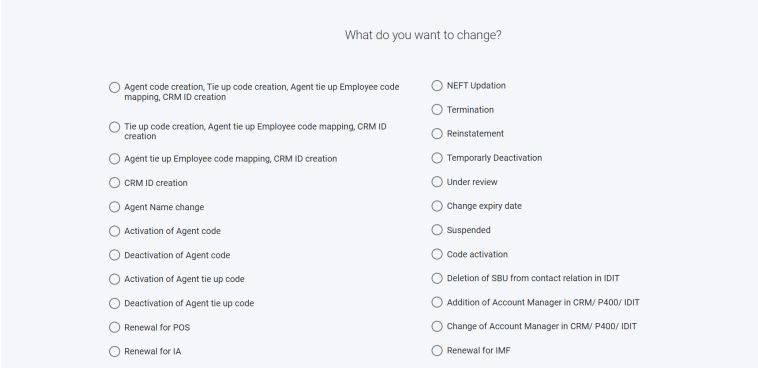

Fig. 2. An image of a radio buttons of different change requests.

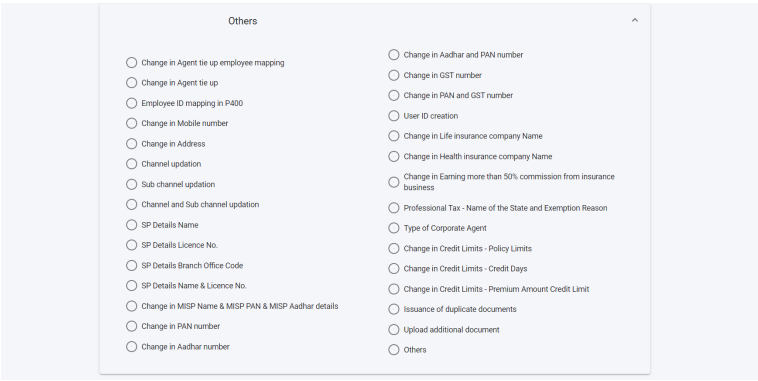

Fig. 3. An image of a Others section.

B. Changing UI

Client asked us to change some UI in the website so that it looks good and simpler for finding the required change requests. here are some of the changes which we had to change.

1. Adding sticky search button on main page
2. Change the font size for main page
3. Change the location of ”Other” in the UI
4. Other section should be collapsible
5. Arranging the radio buttons in order
6. Arranging everything including ”Others” expansion panel to two columns.

C. Resolving dependencies issues and setup db

Initially back-end code has some errors regarding the dependencies. So task was resolve this dependencies issues. To solve that we had to add these packages manually. And after that task was to setup database on virtual machine and connect this database with spring boot application.

D. Add IDIT webservices call

The flow for change request was like, first user will login with id and password, then select the change request tab, then select the type of request where change is required, then seach contact will fetch data from p400 portal. So the task was to replace these p400 call with IDIT call. To complete this task first things is to do is consume a SOAP service in spring boot code. For each service WSDL file was given.A WSDL(web services description language) is an XML document that describe a web service. WSDL file describe how service can be called and what parameters are expected and what is the return type of data. This WSDL file was used to generated java stub using jaxb plugin. After generating java stub task was to implement the end-point in the back-end code which uses this IDIT call(instead of p400) to fetch the data.

IV. DIFFICULTIES FACED

- Working on an existing project is much more difficult than working on a project from scratch. Firstly, we have to understand the logic of the existing code and then write the new code.
- The code-base was large due to which finding a particular code file and understand the flow of code is a bit challenging
- After integrating a new feature, we have to rigorously test and make sure that my code fits well with the existing flow of the code and did not changes any other feature of the web application.
- Migrating from the academic level programming practices to industry level programming practices is always challenging

V. OTHER WORKS

While team is learning Angular and Java. Our mentor Lavneet singh assigned a small task to try to clone a website called Dental Leap. We tried to do that individually. we had to replicate every part of the UI similiar to the website. During this, we got to learn different concepts and functionalities of Angular such as Angular Material UI, Routing and Navigation, Binding, etc., For the backend we had developed small project which uses the concept of Spring boot, REST API, Spring JPA, Postgres Database.This small projects laid a foundation for the ITGI Project. We had to use many concepts we learnt during these Project in the project of ITGI.

VI. LEARNING

- We had a daily scrum meeting in which we can discuss our problems and we'll get tasks for the next day. By attending these scrum meetings, we got to learn how things should be done in a business environment.
- We had to show all the work we done in a week every thursday to the client and Manager. We used to get remarks for our work, what mistakes we did and where we can improve upon. By this, our tasks used to get updated and we get to learn how simply and effectively we can solve the problem.
- We got to learn how a team works. Two of the three members of the team has to work on Frontend part of the project. We both had to work together so, there wont be any irregularities between the work and there wont be any extra work. We had to work with Smit for merge our work with Backend of the project. We got mentored by Both Lavneet and Rishabh. By this, we got to learn how to work as a team.
- We got to learn about different technologies like HTML, CSS, Angular for front end and Java, Spring boot, SOAP API, db2 database for backend.

VII. CONCLUSION

- This internship gave us chance to work on live project.
- We were able to make necessary changes for the change request feature. Change request feature is now supporting the update in many fields which were not previously.
- Data for search contact request is now served from IDIT web service.

VIII. ACKNOWLEDGMENT

The internship with ITGI IOB has been as amazing experience. We would like to thank on-campus mentor Prof. Lavneet Singh for this great opportunity to work on live project and Mr. Rishabh Jadwani for support during the project.

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