Curricular Practical Training (CS 703)

(Fall Internship - Midterm Report)

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Course Section: **CS 703-A**

Abstract

I am pursuing my fall internship at Siemens Corporation. Currently, I am implementing front-end technologies and experiencing the workflow in a technical department of the company. Since I have some experience with web development, my lead has assigned me to develop a dynamic user interface. This report contains what I am currently working on and what are the future expectations during this internship.

Profile Introduction

At Siemens, I am working in the corporate technology department as a Front-End Development Intern in a team with a visual designer and interaction designer. The person to whom I reported to is Michael Golm, he is the Department Head. Every morning, we set daily goals, and in the evening, we deliver our daily work report to him.

During this internship, I am expected to develop some of the major components to enhance the functionalities of the user interface. My primary responsibilities are to implement visual effects and to develop user interface framework, menus, data forms, and tables. To create component designs and graphics, I am working with HTML5, CSS3, D3Js, in company's framework, and to develop the functionalities of these components, I am working with JavaScript ES6 in the Angular framework.

I have worked on some front-end projects in the past, but none of them had this magnitude of functionalities to handle. The sizes of the projects on which I have worked on were very small and needed only a few members, but the components I am working on in the internship are a lot bigger and with a lot of functionalities. At Siemens, the number of people working on a front-end development isn't much, but the availability and knowledge are the important aspects of the project.

Company's Introduction

Siemens Corporation is a German conglomerate company and it is the largest industrial manufacturing company in Europe. Siemens is a global technology powerhouse that has stood for engineering excellence, innovation, quality, reliability and internationally for more than 165 years. Siemens is rigorously leveraging the advantages that this setup provides. The company is organized into nine divisions: Power and Gas, Wind Power and Renewable, Energy Management, Building Technologies, Mobility, Digital Factory, Process Industries and Drives, Healthineers and Financial Services.

Current Responsibilities

My current responsibilities in the internship are:

1. **Google Maps:**
   The primary task is the re-defining of the Google Maps' functions and properties. In this task, I am implementing Google Maps onto the browser with customized features and functionalities such as customized markers, different view at different zoom levels, markers grouping based on geographic locations, etc.

2. **Dynamic Graphs:**
   In the dynamic graphs task, I am working on an algorithm to extract and prepare data for dynamic graph drawings. The data should be extracted from the server API each time and needed to be cleaned and formatted at the client side. The data preparation should be robust as the same dataset should be capable of drawing different graphs on a browser with the change in the filters or views.

3. **Responsive Design:**
   I am also working on the responsive design of the front end components. I have to make sure that all the components (such as customized Google Map) are compatible with every screen size, orientation, and resolution. The implementation of the responsive design should be done in the company's defined framework.

Future Plans

My future work expectations in the internship are:

1. **Dashboard:**
   In this task, I will be implementing a responsive front-end design for user dashboard. In this dashboard, I would be developing forms, animations, screen layering, menus, tables and writing scripts for user input validation.

2. **Google Maps Control Panel:**
   This task will be the advance extension of current Google Maps implementation. In this implementation, I will be developing Google Map controls which would add other dimensions in the Google Maps such as auto zoom in and zoom out functionality, auto user activities tracing, and control to restore the state of the map to the previous state.

3. **Dynamic Google Maps and Draggable Panel:**
   In dynamic maps and panel, I will work on a draggable panel over the Google Maps. The Google Map will be self-adjustable, which should adjust its size, zoom level, marker positions on the screen depending upon the position of the draggable panel.

4. **Packages:**
   This will be the last task as I will be responsible for creating a package of all components in the module-based framework and to deliver it to the backend team for production. I may also have to assist the team in package implementation.