SMU
MEDITERRANEAN INSTITUTE OF TECHNOLOGY

Junior Project

ISS Report

SMU Career Center

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ABSTRACT

The SMU Career Center is eager to provide its students and alumni with distinctive services, aimed to help them de ne and reach their career goals also assist them in addressing their challenges in terms of recruitment needs.

The proliferation of technology and the continuous need of digitization has prompted asset owners to search for solutions to facilitate the employment process. In order to ensure the continuous improvements, The SMU Career Center proposes to build a platform using the MEAN stack technology for internships applications , job applications and for the workshops and conferences so that its students can address to this platform in order to nd a suitable position.

Keywords: MEAN Stack, AGILE

Student Declaration

By submitting this report, the students promise on penalty of failure that

- they have cited any source from which they used data, ideas, or words, either quoted or paraphrased (e.g. parts of the report that is copied/pasted from the Internet, design or construction performed by another person, etc.);

- they have not received unpermitted aid for the project design, construction, report or presentation;

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Chapter 1

Project Overview

1.1 Introduction

This report is a short description of our ISS project fulfilled with the SMU Career Center department.

Our live, especially after the Covid-19 pandemic, depends on digital services, everything must be digitized as it improves the e ciency of business processes.

In order to achieve that goal, which is digitization, we had to understand the needs of the SMU Career Center, so we build a suitable software for them.

Nowadays, industry depends on informatics and telecommunications for almost every activity and service, coping with the new era is a must to survive and improve.

The present report gives a complete overview of the steps undertaken and the implementation made throughput this project. It is organized in chapters which resume the main activities held in order to achieve the stated goal.

1.2 Description of the Project

With the SMU Career Center as our client, we agreed to build a platform where we share SMU events, job and internship positions and the possibility to apply for them. As a second part we will include the Alumni and the SMU foundation part.

1.4 Goals

Our goal is to build a platform that share events, workshops, job and internship opportunities At the end of the course I will be comparing your product with this statement!.

1.5 Conclusion

The project is a platform that facilitates the interaction between the SMU Career Center and the students and/or professionals.

Chapter 2

Project Management

2.1 Introduction

The project Management is mandatory in order to achieve a goal. It is the practice of leading the work of a team while meeting success criteria at a specified time. Scope, quality and budget are the main constraints. Complying the client's objectives need a clear reconciliation between the client and the mangers.

2.2 Deliverables and Division of Tasks

The division of tasks was not that obvious in our case. The use of MEAN Stack was challenging. This is why we started together watching tutorials, we basically did every task together to learn as much as we can about these technologies and we succeeded to do so but it took us a lot of time. Our deliverables were suitable to our clients and we still have features to develop.

2.3 Tasks and Time Line

Our project took 12 weeks to be completed. We organized ourselves thanks to the participatory tool which was AzureDevops.

The first 7 weeks were for the sprints. Each sprint took us 5 business days. The Covid-19 crisis was a genuine incentive that helped us to be more involved in the project.

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2.3.1 Methodology: Agile

Nowadays, Agility is a must in order to implement a successful project. The collaborative efforts of the teams and the advocacy of applying adaptive planning and evolutionary development encourage smooth responses to modify.

2.3.2 AzureDevops

Azure Devops is a Software is a service platform from Microsoft that provides an end-to-end DevOps toolchain for developing and deploying software. It was such a convenient tool for us to overview our project schedule including important assessment and deliverables, it was crucial for us to organize the work.
On a weekly basis, we mentioned our new user story in the TODO section, discussed with the product owner in order be sure of what he needs, then reshape it finally add it to the approved section . I will end up being done.

2.4 Conclusion

Project management is tremendously important, and agility is such a double-edged weapon that may attenuate the process of the project when it is not conveniently done and may also accelerate it when the process is done correctly.

Chapter 3
Technical Considerations

3.1 Introduction

This section is an important part to start with knowing everything that is concerned with the technical perspective such as restrictions, operating environment, design and implementation restrictions.

3.2 Technical Limitations

The technical limitations we faced were diverse. Starting by the first time we use the MEAN Stack, this lack of knowledge in software development tools. How to start, how to manage time and divide the work between team members.

3.3 Operating Environment

The system will be operated just the laptop, computer, etc... That means it will be a desktop application used in every type of operating system such as Windows, Linux, and IBM's OS/2.

3.4 Design and Implementation Constraints

- Software implementation platform with Angular
- Software implementation with Html, css, Type Script Language
- Express and Node framework
- Database Management System Mongo DB

3.5 Assumptions and Dependencies

For using the system, the users must have anything has Android OS for first version and the device must connect internet with 3G or Wi-Fi.

3.6 Conclusion

After watching so many tutorials we finally caught our starting point and started working efficiently and effectively.

Chapter 4
Requirements Specification

4.1 Introduction

Requirement engineering is the process of gathering and defining what should be done in the system. It defines documents and maintains requirements in the engineering design process.

4.2 External interface requirement:

4.2.1 User interface requirements:

User friendly interface.

Login interface that provides the security management system.

Clear explanation of what the user should do in order to add/update/delete, participate/apply in a event/job.

The user input should be displayed in the screen.

4.2.2 Hardware interfaces:

SMU Careen Center does not use any hardware.

4.2.3 Software interfaces:

The application should run on any browser in any Operating system. Since the application needs a database to store all the details, Mango DB would be used. CSS and HTML will be used for coding and creating the application.

4.2.4 Communication interfaces:

Our web application should support all type of browsers. It will communicate to the database directly.

4.3 Functional Requirements:

The system shall give the possibility to the user to either login if he already has an account, or to create a new account.

Create an account:

In case of creating a new account, the system shall register the entire user's information in the database. If there is an invalid or incorrect data, the system shall display an error message.

Login:

In case of a simple login, the system shall verify the authenticity of the username and password that the student has provided and let him enter his account.

Handling wring username/password error: In case of a wrong username or password, the system shall display a clear message to the user asking him to re-enter them again.

Once the login is done, the system shall let the user see the offers provided.

Entering the user details:

The system shall let the user choose a workshop that suits his needs.

4.3 performance requirement:

The system shall support only one terminal.

The system shall support only one simultaneous user on each machine User satisfaction: Our system shall stand to the user expectations.

Response time: Our system should not take too long to response to any operation. This can be possible by careful programming.

Error handling: Our system should response to any user errors. In most cases, the system will display a message to inform the user about that error.

User friendliness: the application should be easy to use and understand for every user.

4.4 **Logical Database Requirements**

The system must store all the user account information.

All the data shall be stored. For each user account, the username, first name, last name, password, email address shall be stored in one file.

4.5 Design Constraints:

All coding will be done using HTML and CSS.

4.6 Software system attributes:

4.6.1 Reliability:

If there is an error the system will ask the user to make a new account. If there is a fatal error the system shuts down without crashing the computer, it is running on. the system should safeguard against undesired events without human intervention.

4.6.2 availability:

-The system will allow the user to restart the application after a crash.

-All data beyond the last save point will be lost.

-After the system has been restarted, the user will be able to load his/her data file and continue using the system.

4.6.3: portability:

The product will be able to run on Mac OS X and Windows. The software will be written in a platform independent programming language for portability; there will be no platform specific code.

4.7 Organizing the specific requirements:

-User classes: Will be used by the system and how each of them will benefit from using it. So, in this part of our project, there are many functions which provides the user at the beginning to put his username and his password, once it's correct he will be move to another function which is to the workshop and or job.

-Objects/functions:

Are also called services, methods or processes.

-Feature: Is an externally desired service by the system that may require a sequence of inputs to effect to the output. In this case, due to the lot of use of our application from the users, makes the application well known, and have a certain level of efficiency.

-Stimulus: Nowadays, everybody uses the new technology such as the smartphones, etc…, which can help the user.

4.4 Conclusion

Requirements need a set of pertaining data to achieve the goals and the objectives of the software: How will it work and what are the properties that must have to provide the results needed.

Chapter 5
Design

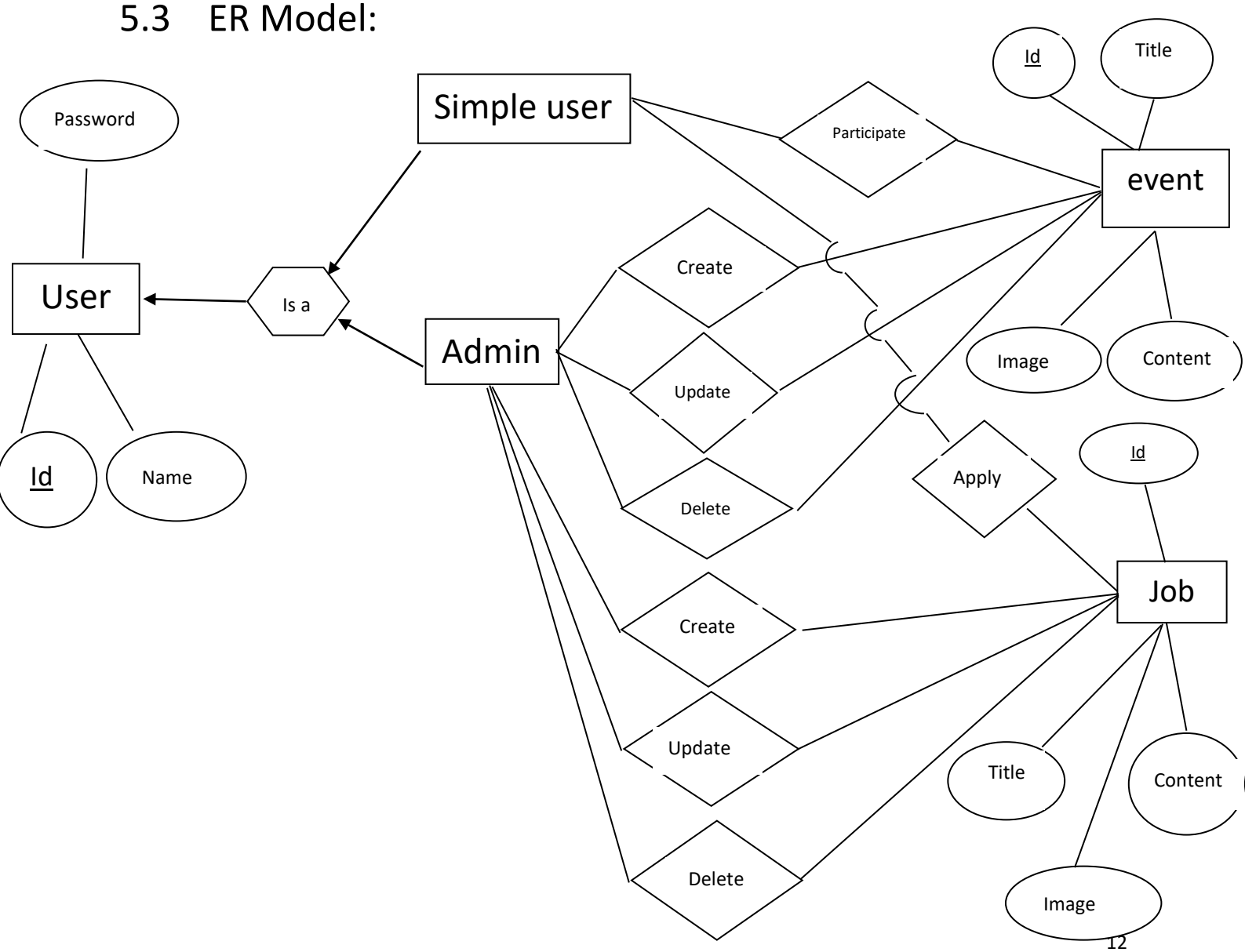
5.1 Introduction

Software Design is the process that transforms the user requirements into convenient designs to adapt the software coding and implementation. It is a primordial step in software development life cycle.

5.2 High-Level Design

In the High -Level Design, we divided the system into sub-systems. The focus was on the implementation. The main purpose of our system was the high cohesion and the low coupling

5.3 ER Model:



5.4 UI Design

In this section, we provided the “User Interfaces” and described the functionality of each user interface in details.

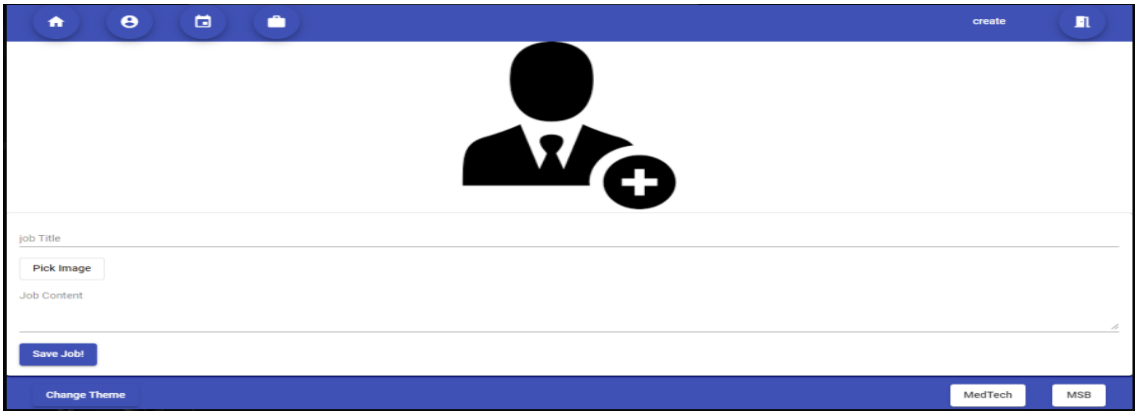


Fig1: Sign up

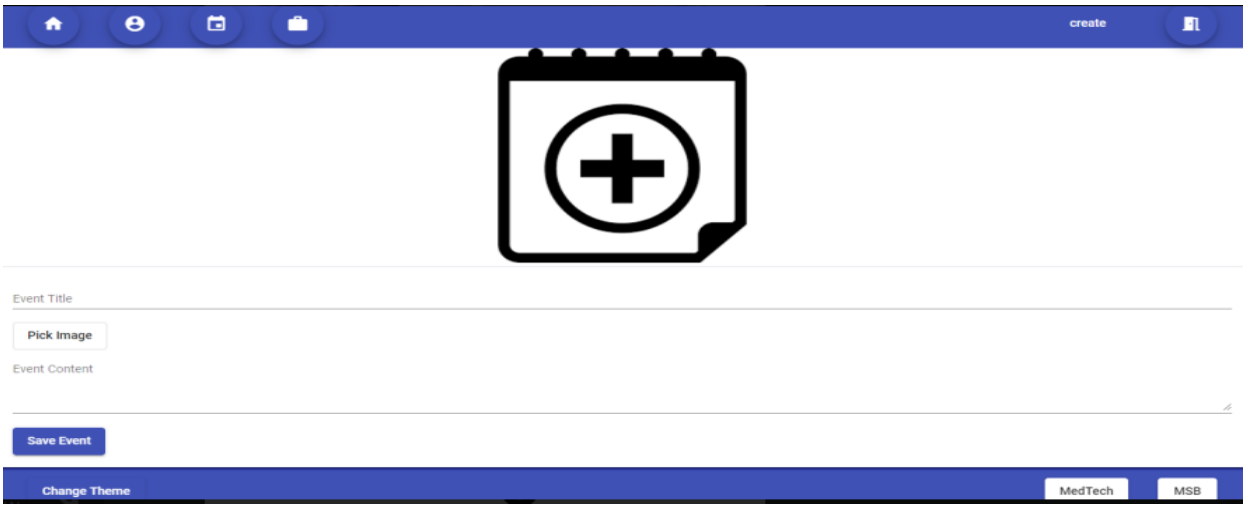


Fig2: Add an event

5.5 Conclusion

User friendly Design is the main purpose to deliver a good product. It design is one the main characteristics of a good UI.

Chapter 6
Implementation

6.1 Introduction

For the implementation of the ISS project, we used several technologies and tools , such Angular (JavaScript framework) the client side , and NODEJS for the server side , we used express as a middleware.

6.2 Implementation

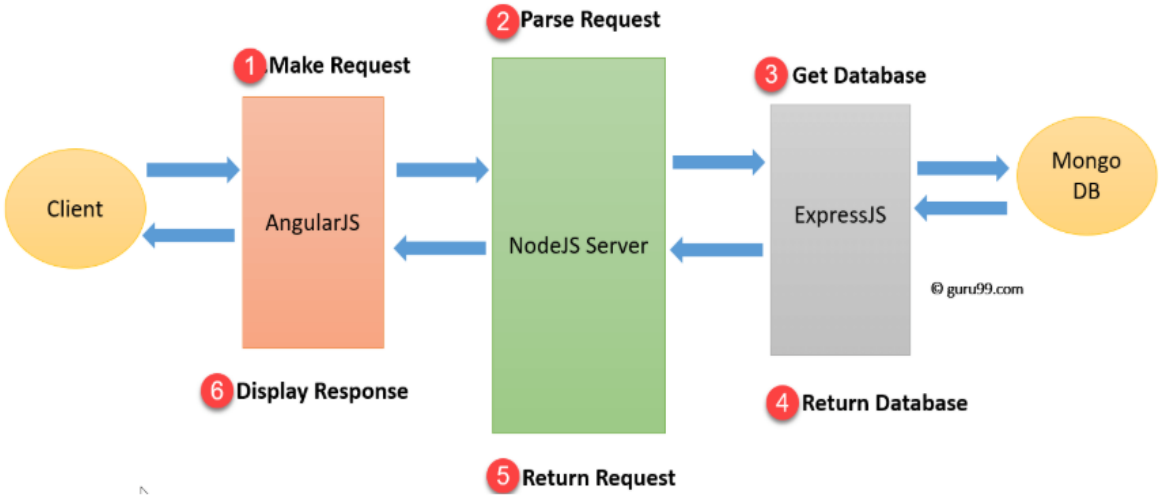
6.2.1 Hardware

As hardware we only needed our laptops

6.2.2 Software:

For software we used MEAN stack for development:
Mongo dB: is a schemaless NoSQL database system. MongoDB saves data in binary JSON format which makes it easier to pass data between client and server.
Express.js: is lightweight framework used to build web applications in Node. It provides a number of robust features for building single and multi page web application.
Express is the framework for Nodejs
Angular: Angular JS is a JavaScript framework. AngularJS allows us to use HTML as a template language. Therefore, you can extend HTML's syntax to express the components of your application.

NodeJS: It's a server-side JavaScript execution environment.



Mean Stack Architecture Diagram

1. Firstly, the client makes a request which is processed by the AngularJS
2. After that, the request moves to NodeJS which will parse the request.
3. ExpressJs will make calls to MongoDB to get or set data.
4. MongoDB will retrieve the requested data and return that request to the Express JS
5. NodeJS will return the request to the client.
6. At the client side, AngularJS to display the result fetched from MongoDB.

6.3 Acceptance Criteria:

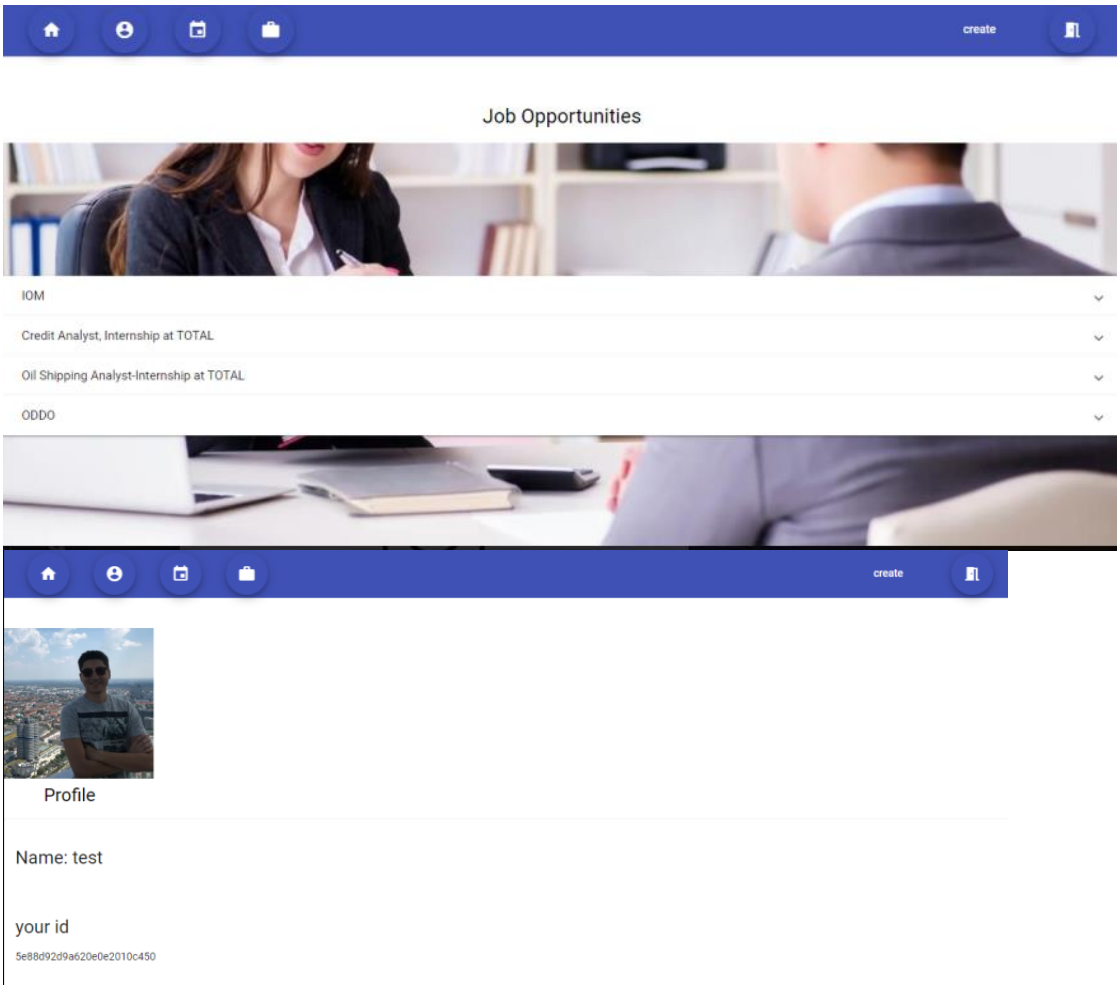
User satisfaction: our application shall stand to our client expectations.
friendliness: the application should be easy to use and understand for every user.
The user should be able to signup, login, read, write, update, and delete jobs and events he created.
Response time: the application should not take too long to response to any operation.
Error handling: our system should respond to any user errors. In most cases, the system will display a message to inform the user about that error.

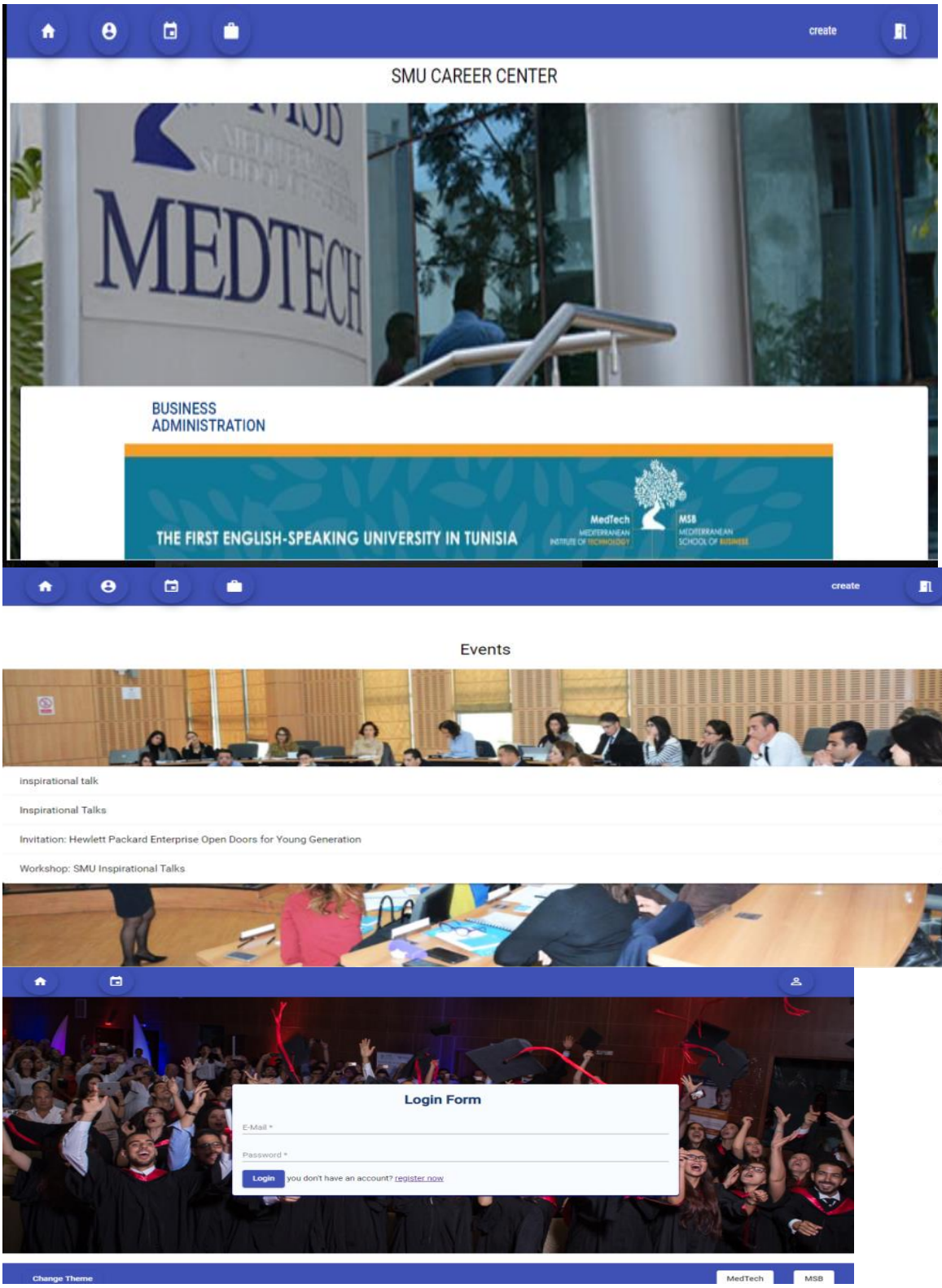
6.4 Conclusion

All turn around the convenience of the implementation phase. Succeeding the implementation is the primordial objective of the project.

Chapter 7
Results and Discussion

7.1 Introduction
After a lot of hours of work, we almost reached our goal and our client is satisfied and still asking for more of features each time.
The user is able to signup sign in , see the available jobs/ events , add/update/delete them and see his profile.

7.2 Main Screen




7.3 Conclusion

We succeeded the sign in, sign up pages, the home page, the events page the job pages and we are still working on the part of applying to the job and participate in an event in the internships suggestions.

Chapter 7

1. Conclusion

The workload was heavy, but we had so much fun learning and working together. We have a pleasant clients that were flexible with us which helped us eliciting the requirements.
Even though this is our first time with mean stack as a tool for development, The guidance of our professor played a major role in the smooth running of our project and we succeeded to guarantee a progress in work all over the semester.

Acknowledgements

We finish our report by expressing our sincere gratitude to the people that helped us during our internship.

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