Course Name: WEB ENGINEERING

Course Code: SE-206

PROJECT REPORT

"Elegant Clothing 1.0"

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Links:
Website: http://elegant-clothing.web.app/
Frontend Repo: https://github.com/Sarahmdawood/clothing-app
Backend Repo: https://github.com/Sarahmdawood/clothing-app-api

INTRODUCTION

Due to the metamorphosis of technology, it has become a necessity to transfer everything from the real world to a digitally equipped, more modernized world i.e. the Web. Therefore, in order to provide people with a virtual platform to shop, we have come up with our own brand,
'Elegant Clothing 1.0.'

ABOUT OUR PRODUCT

"Elegant Clothing" is our take on an e-commerce website with the resources we had to provide users with a smooth experience of shopping online along with a visual aesthetic. The basic aim of this website is to come up with an idea that deals with the transactions that solely revolve around the web. The aspiration behind building and developing Elegant Clothing is to have a platform that not only allows its users to make purchases but also makes browsing and navigation easier. In this way, users can find their favorite products conveniently, only a click away!

FIRST ITERATION

The first iteration of any web application starts off with the communication phase where all the developers, stakeholders come together to discuss and negotiate requirements before moving on to the second and third phase i.e. modeling and planning.

I. Requirement Specification

After much communication between all stakeholders, the following requirements were outlined:

A. Functional Requirements:

- Users will be able to sign up themselves for an account by providing their name, email and password.
- Users will be able to sign in after registration using their email and passwords.
- Users can sign out of their accounts once they are done using the website.
- Users can visit the "About Us" section to know more regarding the service they're investing in.
- Users can browse in different categories provided by the brand and find items with pictures, descriptions and prices for reference to help them in choosing the product they want to buy.
- Users can also use the search bar as per their convenience to find items.
- Users can click "buy now" for the item they want and proceed to the payment method page.
- Users will be given a final bill once they confirm their order and payment method.

B. Non-Functional Requirements:

- The website should always be available to its users.
- The website should have minimum response time.
- Information of each user should remain secure.
- The website should be user friendly.

II. Planning

ELEGANT CLOTHING

WE PROJECT

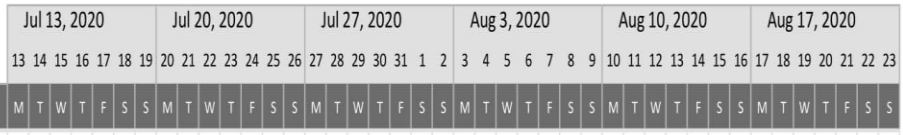
SIMPLE GANTT CHART by Vertex42.com

https://www.vertex42.com/ExcelTemplates/simple-gantt-chart.html

Project Start: Mon, 7/13/2020

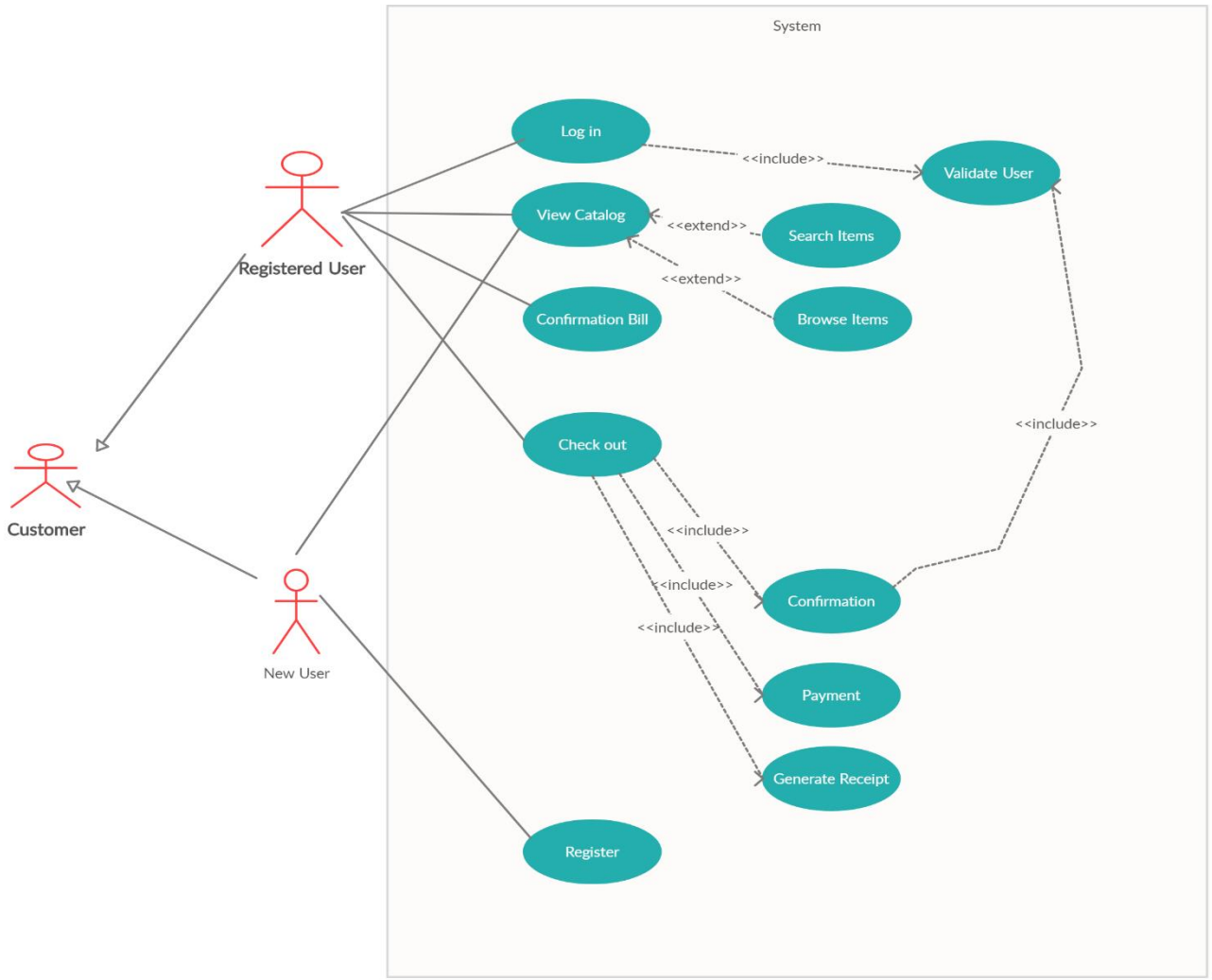
Display Week: 1

TASK	PROGRESS	START	END	Duration
Phase 1 FRONT-END				
Basic Design Plan	100%	7/13/20	7/14/20	1
Home-Page	100%	7/14/20	7/19/20	5
Sign-Up Page	100%	7/19/20	7/21/20	2
Sign-In Page	100%	7/21/20	7/22/20	1
About-Us Page	100%	7/22/20	7/23/20	1
Product Display Page	100%	7/23/20	7/27/20	4
Single ProductPanel	100%	7/27/20	7/30/20	3
Billing Form	100%	7/30/20	8/1/20	2
Confirmation Page	100%	8/1/20	8/2/20	1
Success-Page	100%	8/2/20	8/3/20	1
Phase 2 FRONT-END DEPLOYING				
Combining Components	100%	8/3/20	8/7/20	4
Deploying	100%	8/7/20	8/9/20	2
Phase 3 BACK-END				
Setting Up Database	100%	8/9/20	8/10/20	1
Setting Up Routes	100%	8/10/20	8/12/20	2
Backend for Sign in/up	100%	8/12/20	8/16/20	4
Backend for purchasing	100%	8/16/20	8/19/20	3
Phase 4 DEPLOYMENT And TESTING				
Construction	100%	8/19/20	8/21/20	2
Deploying	100%	8/21/20	8/23/20	2
Testing	100%	8/23/20	8/23/20	0
Documentation	100%	8/23/20	8/23/20	0

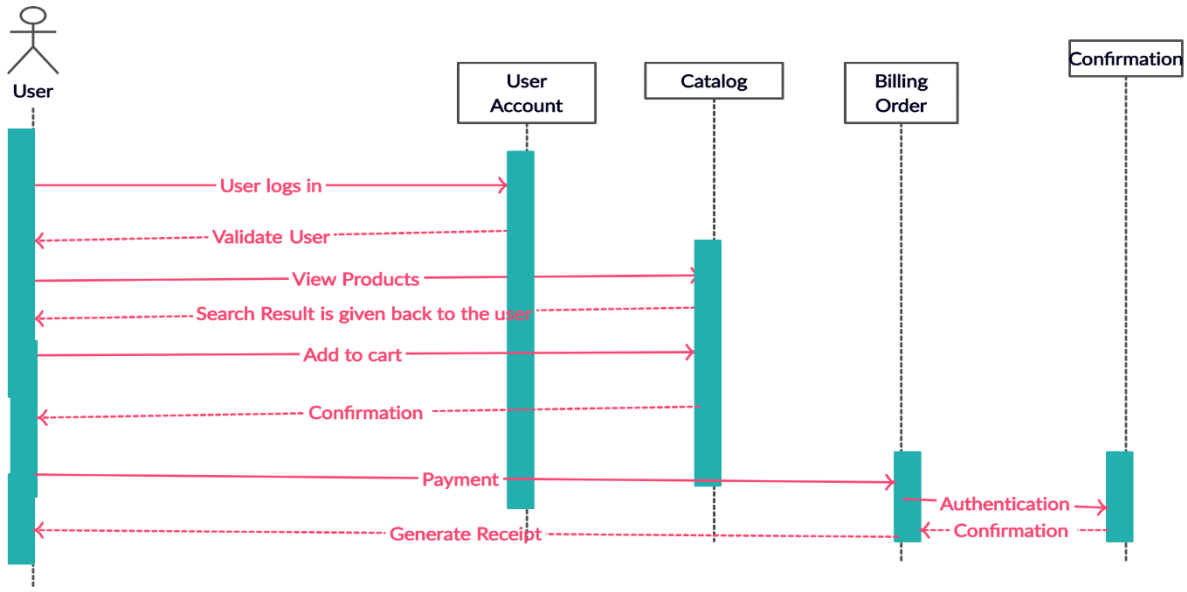


III. Modeling

A. Use Case Diagram:



B. Sequence Diagram:



SECOND ITERATION

Once again, all the requirements were communicated between all stakeholders and after observing no changes in requirements or design of the web application, the construction phase of the website was initialized.

IV. Construction

Technologies that were used in the different areas of the website are as follows:

A. Client-Side Technology:

- HTML was used to display website content.
- SCSS was used for styling of the website.
- JavaScript paired with framework React was used to enhance user interaction.

B. Server-Side Technology:

- **Backend:**

Node JS and Express JS were used at the backend to develop the functionality of the website. Moreover bcryptjs was used for hashing the passwords to protect the confidential user information.

- **Database:**

SQL was used on the database management system POSTGRESQL to create and manage our database. Images were stored in the database by storing them on Amazon Web Services S3 Bucket.

C. Deployment:

- Firebase was used to deploy the frontend of the project.
- Amazon Web Services (ec2) were used to deploy the backend of the project
- Amazon Web Services (rds.) were used to deploy the database of the project.

V. Deployment

The steps followed in deployment of each aspect of the website are as follows:

A. Frontend Deployment:

- Create a new project on the firebase console.
- Back in the react app terminal, we used the following commands

1. 'Npm run build' to produce a build folder ready for deployment.
2. 'Firebase login' to login to the firebase console.
3. 'Firebase init' to initialize firebase in the repo. It led to a series of questions.
4. 'Firebase deploy' to finally deploy it.

B. Backend Deployment:

- In the AWS console, an ec2 instance was launched.
- The instance was made public, and we were provided with a SSH key.
- Since the ec2 instance was based on Linux, we had to connect that ssh key to our Linux terminal(WSL) with the command 'ssh -i ec2-user@public-domain-provided-by-aws

- This command connected us to the ec2 instance. In that instance, we downloaded npm and node and git. Connected our Github repository to the instance
- We downloaded pm2 to make the server run 24/7 and finally started our server with the command 'pm2 start server.js'

C. Database Deployment:

- We created an rds instance.
- Just had to update the settings to allow public access. AWS gave us a public database domain which was then easily connected to our PostgreSQL.

Testing Activities

The website was done in a step by step, incremental procedure where requirements were first outlined and finalized, a design was made to visualize the look of the specific function we wanted to implement before moving on to the construction.

- Time for component testing was allotted for each functionality as mentioned in the Gantt chart in order to validate the working of each component. This ensured that all components were up to mark with respect to user experience.
- Once all the components were connected, time was also allotted for integration testing to check the working of the website as a whole.
- The last bit of testing was done once the frontend and backend of the web application were deployed to ensure smooth working.

CONCLUSION

Due to the evolution of the internet and technology, everything has changed its course towards the digital platform. In this contemporary aeon, the world is metamorphosing itself into a digitally equipped and modernized self, making it even harder for the human beings to keep up with its pace. Electronic commerce or e-commerce has made it easier for the people to shop online from the comfort of their homes and get their products delivered at their doorstep. Owing to the pandemic situation, the need for having online sites that cater to the user's needs is quite in demand. Therefore, with this platform we have tried to provide users with the best online shopping experience in a convenient manner where they are given multiple clothing and accessories alternatives. However, we plan on developing 'Elegant Clothing 1.0' to have even more convenient and modern features for the user as well as the administration such as addition of shopping cart, integration of an admin block in frontend and backend for dynamic functionality of the website and most importantly, make it secure for the users in the versions that will follow.