

Master AI Team Project Fall 2020

E-Markt Fulda

(Group 4)

Milestone 2 - Nov, 27 2020

Members:

Muhammad Adnan muhammad.adnan1@informatik.hs-fulda.de	Team Lead Frontend lead
Muhammad Waqas Hussain Lakhani	Backend lead DBA
Ahmed Shahid	Git Master
Bansi Jivani	Documentation
Muhammad Ziam	
Bilal Mehdi	

Version History:

Submission Date	Revision Date
27-Nov-2020	N/A

Contents

1. Functional Requirements - (Prioritized)
2. List of main data items and entities
3. UI Mockups and Storyboards
4. High level Architecture, Database Organization
5. High Level UML Diagrams
6. Key Risks
7. Project Management

1. Functional Requirements (Prioritized)

PRIORITY 1 - Must have features

User Group: Non-Registered User

1. Users should only be able to register with their University's email address (emails with suffix, "hs-fulda.de").

1.1 With this feature we will be able to authorize just user from the Fulda University

User Group: Registered User

2. Only registered users should be able to login to the platform.

2.1 With this feature other users wont get access to this platform and just with the registration we can get to know if the user is a member of the Fulda University and in that way it will maintain the decorum of the concept of our application.

4. Users should be able to search for products or services by a keyword. 4.1 This feature allows users to find the product they are looking for.

5. Users should be able to filter items by category and price range.

5.1 With this feature, users will be able to filter the item, so that it may help them to find the optimum product if it's available.

6. Users should be able to sort items by posted date and price in ascending or descending order.

6.1 With this feature, Users search will become easy and will be able to find the item or service more easily.

7. Users should be able to view the details of items on the website.

7.1 With this feature users will get to know the better function and feature of the product and it is always better to know the description of the product you are buying.

8. Users should be able to send and receive messages between each other.

8.1 With this feature, if a user likes the product or wants to know more about the product, he/she can contact the seller and talk with him/her.

9. Users should be able to list their product/service on the platform.

9.1 With this feature the seller can post the item or service he/she offers and so if there is any suitable buyer he/she can buy it.

10. Sellers should be able to change the status of an item as sold, unavailable, available.

10.1 With this feature, users can easily know the status of the product i.e. if it is still available or is it for limited time or sold, etc.

11. Sellers should be able to edit ad (price, images, description. etc).

11.1 With this feature, if the seller's product is not selling or if he/she has missed some details to add, this feature would be helpful to make changes by editing it.

User Group: Admin

12. Admin will review before publishing an ad to the website.

12.1 This will allow to maintain the good environment of the application as there are sometimes where people do mischievous activities which should be avoided.

18. Admin should be able to block/unblock users.

18.1 With this feature, admin can control the good environment of the application if someone tries to cheat or does some activities that users shouldn't do.

PRIORITY 2 - Desired feature

User Group: Registered User

3. Users should be able to update a profile.

3.1 With this feature, the user will be able to update details of himself/herself.

13. Users should be able to report another user.

13.1 This feature enables users to notify if there is some inappropriate activity from another user which will help to make a good environment for the application.

17. Users will be able to review sellers.

17.1 With this feature, users will be able to give reviews to the seller which will reveal for other users how credible is the seller and how was his/her experience in dealing with the seller.

20. Sellers can add FAQs of listed products so they don't have to give answers to commonly asked questions to every person.

20.1 This feature would help users to get know more about the product and not disturb the seller unless necessary and also save time of both seller and user.

PRIORITY 3 - Opportunistic feature

User Group: Registered User

14. If a user is inactive for a certain time, then he will be automatically logged out from the application.

14.1 This would create less traffic and will be easy to handle.

15. Users will be able to see their recently viewed products.

15.1 With this feature, users will be able to track the item that he has recently in his wish list or he is keeping track of.

16. Showing similar or related products in the product page.

16.1 This feature will enable users to consider new options.

19. Users can request for a product/service they want to buy.

19.1 There can be this feature where users can request for a product/service he wishes for.

21. Sellers can create a duplicate ad of their product/service.

2. List of main data items and entities

E-Markt Fulda is a marketplace for Fulda students. There will be multiple types of users and have different privileges using the application.

Administrators

- Administrators will have full privileges of the application.
- They can block users in case of any violation of terms
- They can approve/decline products posted by users.
- They can delete products from the marketplace.

Registered Users

- *Sellers can post/update a product request in the marketplace.
- Seller can only delete his approved product from the marketplace.
- All registered users can browse/search the marketplace.

*Products will be available on the marketplace after approval from the Administrator.

Users will have certain attributes associated with them.

- Email: only email with postfix of "hs-fulda.de" will be allowed to register.
- Username: name of registered user
- Type: type can be Admin or Normal user. Can be modified by any Admin.
- Products: products offered by users. (approval needed from admin)
- Id: unique identifier for user
- Status: status of user, it can be active or inactive.

Products:

There can be two types of products. Either it will be a physical item to be sold or a service to be offered.

Product will have these attributes associated with them.

- Type: it can be Product or a service
- PaymentType: it can be either one-time or hourly.
- User: user who is offering this product
- Amount: amount for which user is offering the product.
- Pictures: optional attribute where seller can attach pictures of the physical item to be sold.
- Id: unique identifier for product.
- Description: description provided by seller.
- Title: a title of product.
- Timestamp: date and time when product is added.
- Status: status of product. It can be pending, onsale, sold, inactive.
- Category: category of item where product lies. It can be "electronics", "mobile" etc.

Chat:

As a buyer can contact the seller using private chat.

A chat can have following data.

- Message id: unique id of message
- Product id: product for which chat is initiated.
- Senderid: unique id of sender of message.
- Recieverid: unique id of receiver of message.
- Timestamp: date and time of message sent.
- Message: message sent by sender.

3. UI Mockups and Storyboards

Use Case 1 – Register a user:

In this scenario, users will register on the site, after clicking the Register button, another page will open where he/she needs to enter required information and press register button.

Fulda e-Market

Login

Login

Password

Sign In

Register

Fulda e-Market

Register a user

First Name

Last Name

Email

Password

Repeat Password

Register

Use Case 2 – Sell an item:

In this scenario, after the login process users can **Place an order**, they need to press **Place an order** button, and select the category, if user want to sell a **Service** then user needs to select Service category, he/she can add photos. Contact details would be mandatory.

Fulda e-Market

Hi, John

What are you looking for?

Find

Place an Order

Fulda e-Market

Hi, John

What are you looking for?

Find

Place an Order

Place an order

Category

Title

Price

Address

Contact Details

Description

Add Photos

Place order

Use Case 3 – Buy an item:

In this scenario, after the login process users can **Buy any item**, either they can search by Category or Click on any latest ads on the Main page, after that they can contact the Seller by phone, or using the site “chat” functionality. Chat Portal will open by clicking on “Contact Seller” button.

Fulda e-Market

Hi, John

What are you looking for?

Find

Place an Order

Categories


Apps

Games


Movies

Books


Newspapers




Test Item 1



Test Item 1



Test Item 1



Test Item 1


Fulda e-Market

Hi, John

What are you looking for?

Find

Place an Order



Test item 1

Item details

Price

Address

Posted date

Seller details

First Name, Last Name

Contact Seller

Fulda e-Market

Hi, John

What are you looking for?

Find

Place an Order

Chat

Seller 1

Buyer 1

Seller 2 ▶

Buyer 4

Buyer 2

Chat history

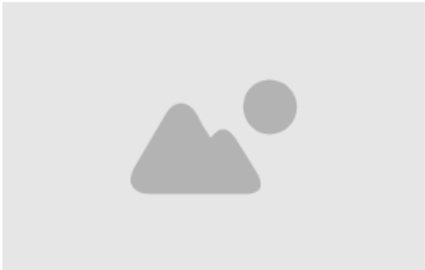
Message

Send

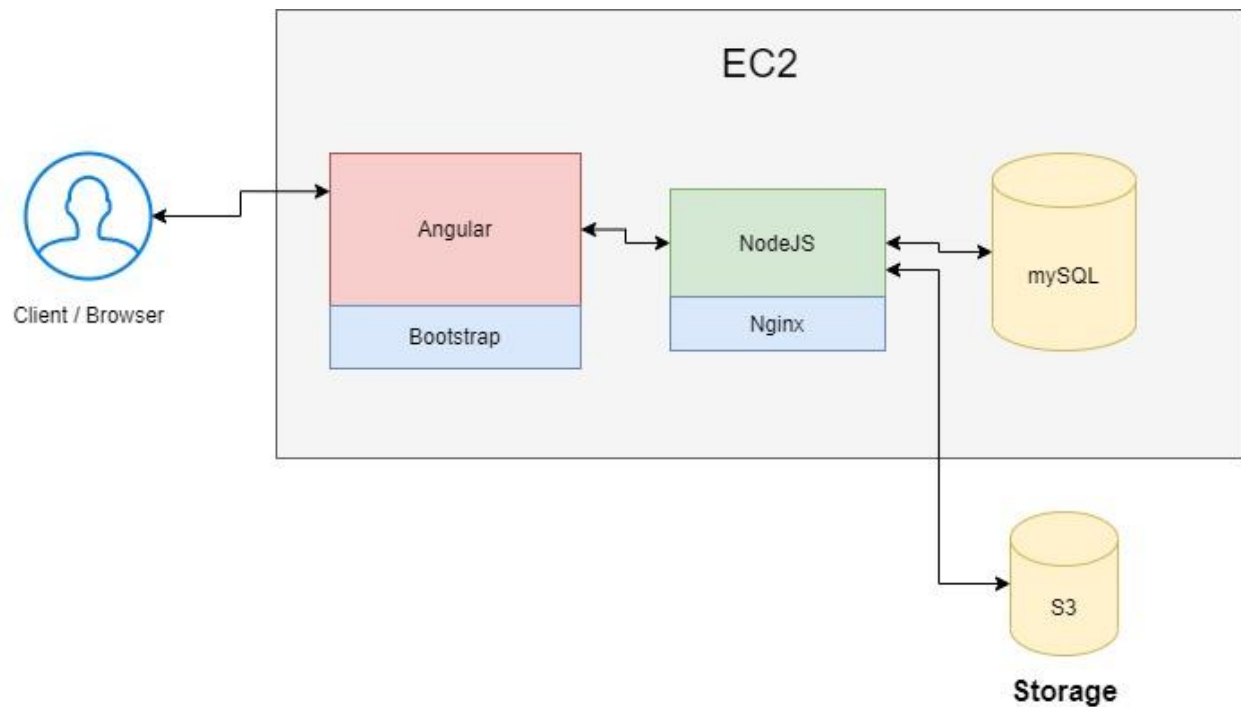
Use Case 4 –Approve Pending orders:

In this scenario, administrator can **Approve Pending orders**, After the login he/she will land on the Admin portal, from where he/she will open Pending orders section, from where he opens any specific Order and can **Approve or Deny** any order based on the given data.

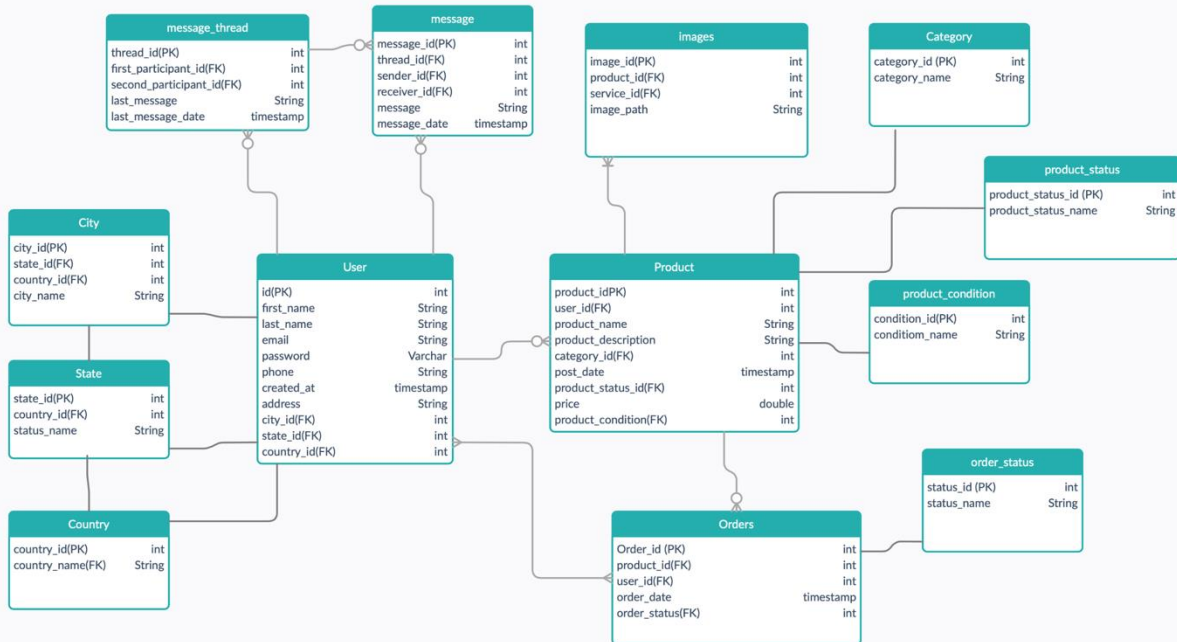
Fulda e-Market		Hi, Administrator
Dashboard	<h2>Pending Orders</h2> <div>Order 1 ></div> <div>Order 2 ></div> <div>Order 3 ></div>	
Orders		
Pending Orders ▶		
Settings		
Sign Out		

Fulda e-Market		Hi, Administrator
<h2>Order 1</h2>		
	<div>Seller details</div> <div>First Name, Last Name</div>	
<h2>Test item 1</h2>		
<div>Item details</div> <div>Price</div> <div>Address</div> <div>Posted date</div>	<div>Approve</div> <div>Deny</div>	

4. High level Architecture, Database Organization

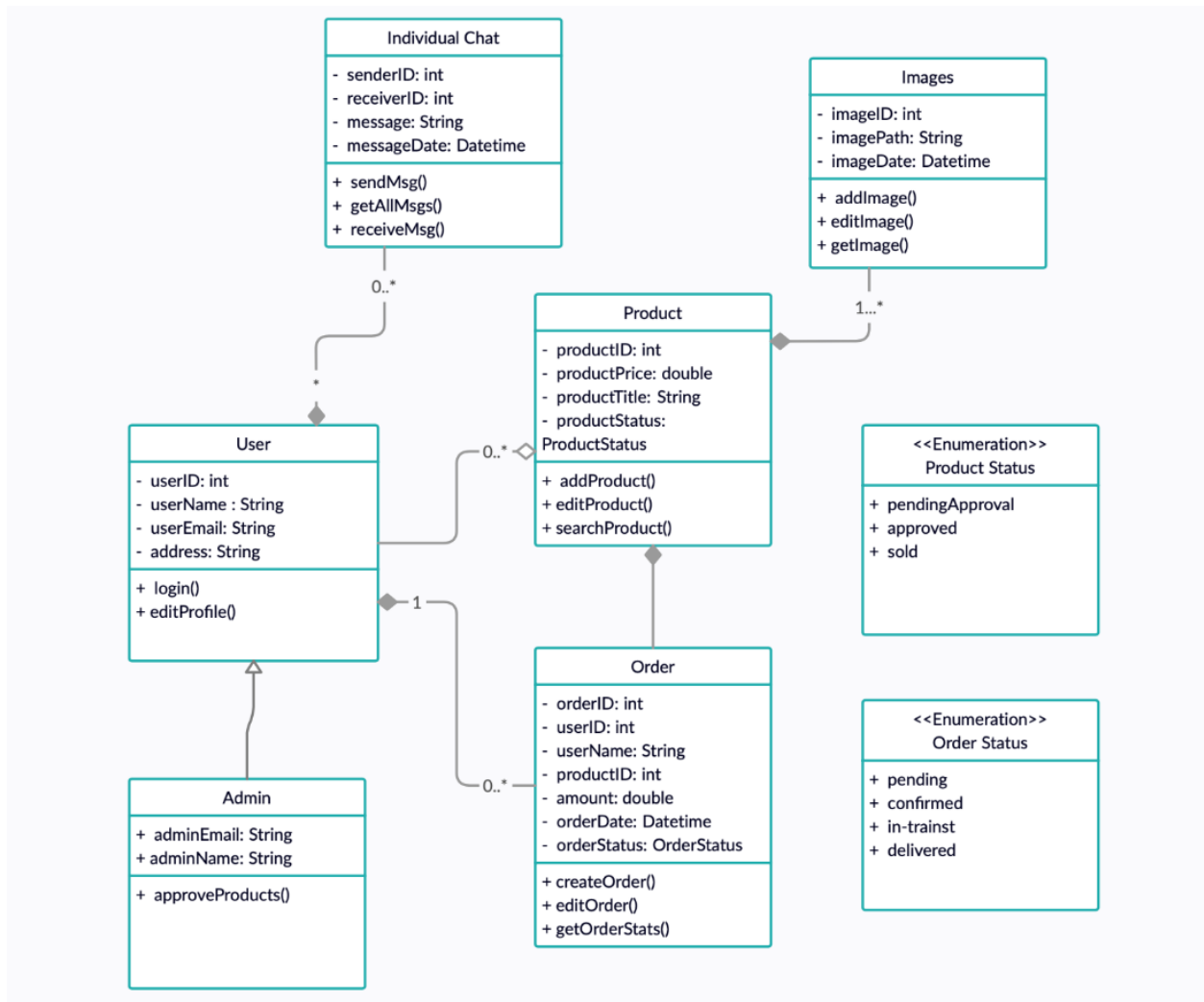


Above diagram illustrated the high-level architecture of application, in which Application would run on Amazon EC2 instance and we would be using Amazon S3 Storage for our images, in addition as per the diagram Client/Browser would interact with Front end application build on Angular and Bootstrap, back-end services and logics would be the in NodeJS which would get data from mySQL database.



- Above image shows the high-level basic database schema, with necessary tables and entities
- For Media storage, file system would be our choice as it's less complex to implement and read/write to a DB is always slower than filesystem.
- As describe in our functional requirements users can use filtration on the bases of many properties such as category, price, product posted date etc. For the search, we will be using MySQL '%LIKE' feature on the product name to fetch the any product which contain searched text.
- For the sake of simplicity, we will not use any fancy algorithm for rating, ranking or prioritization of products or user. But will store product rating and review in database for future analyses and for future admin approval of products.

5. High level - UML diagram



6. Key Risks

Skills risks (do you have the right skills),

Actually, we are the beginners to the technology of the Node JS and we will be learning and implement by working parallel so we can understand each and everything of the module and then implement it. We made to learn from the basics level and help to understand the nature how to undergo for a work in an effective way. So, as we are working and learning these problems may be reduced. The main and the major issue which we can is of skill risk is that we are new to the technology Node JS.

Schedule risks (can you make it given what you committed and the resources)

The schedule risks which we can face during the project completion comprises of the meetings of the group members in time. As the second wave of COVID 19 is going on some of the team members are physically present and some among them are not present due the difference of time. Our team members mostly reside in India and Pakistan and there is the difference of time zone. Although we will manage the timing of each team member as per all members schedule requirements and work accordingly. Though it is tough but sometimes we have the issues due to time zone different but we managed and understand the tough time and overcome these schedule risks

Technical risks (any technical unknowns to solve),

Although, there is not such a big technical issue or risk during the working of the project. The technical issue which we can face may be of the learning of the new software and it tools as we are at the beginner level of learning Node. Moreover as some of our team members are not with us. They back in their countries so the issues of connectivity may happen as they live in 3rd world or not. Having the compatible software for this purpose. But the chance of this risk is not Much hence we are trying to gear up and use the software which is helpful for all of our team Members.

Teamwork risks (any issues related to teamwork)

As listed in schedule risk we are having teamwork issues because some of our team mates are not with Us because some of our team member are in home countries due to COVID 19 in Pakistan India etc. So we will be Having the biggest issue of time zone as some of our team members may not report on time. The other issues may arise May the version of software used may not be the same. We are making a strategy that We are looking and counter these issues and work and set it accordingly, to make our project successful.

Legal / content risks (can you obtain content/SW you need legally with proper licensing, copyright).

Our team members will take full care of the content risks and legal risks. If any kind of such risk is found we will mention in our project that we believe that doing such thing is an offensive measure. The legal / content risks may occur the software issues that there time we need to pay their fee. So, we will have to make sure in each and every case that there must not be any kind of the legal rights. The project will be tried to kept plagiarism free so that there must not be issues of such kind that will not occur in the project.

7. Project Management

E-Markt Fulda is being developed by a diverse team of six people from different educational and social backgrounds, including Adnan, the team lead and front-end lead, Waqas is back-end lead and he is also responsible for administrating database, Ahmed is the GitHub master, Bansi is the documentation expert, Ziam and Bilal are front-end developers. A lot of technologies are being used, including AWS as Cloud provider and EC2 instance will be used as the server for web hosting. We also need a web server, after analysis and consensus, Nginx web server was decided to be leveraged. Database is one of the most important components of any project, for this purpose, we will use MySQL server.

Now we come to languages and frameworks. For the front-end, HTML, CSS, JavaScript will be used and Angular and Bootstrap shall be employed to make E-markt Fulda a responsive and user-friendly e-commerce platform. For the back-end development, NodeJS along with the express framework shall be used.

To keep the team on one page and keep the updated version of this project, Trello is being used where everyone is obliged to update his/her work status. Each task of Milestone is equally divided into team members and everyone's opinion is respected. Regular group meetings are organized, for which Skype is used. The team regularly communicates using WhatsApp group. For the future, same plan will be executed for dividing and performing the tasks to develop and run E-Markt Fulda within time.