

Master AI Team Project Fall 2020

E-Markt Fulda

(Group 4)

Milestone 1 - Nov, 18 2020

Members:

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1. Executive Summary

During recent times, the demand for e-commerce has exponentially increased. COVID has forced people to do businesses from online resources as well as people also prefer to do purchases for their groceries from online sources. This gives motivation to build a platform for the users to buy/sell or exchange any product or provide a service to the other users of the application.

E-Markt Fulda is an e-commerce web-based platform to provide buy/sell services to the users. Users will be able to post classified ads to sell anything or provide any service to other users of the application. The users will be able to see the ads posted on the platform and can communicate with the poster of the ad. Users will be able to search the marketplace to find the required products and will be able to filter the results within the user's price range.

This platform can be used by only students, Faculty and staff of HS Fulda University of Applied sciences. These users will be able to get in touch with each other to discuss the product/service or to ask any further questions.

Users can easily use the app on any web browser from their Desktop/Laptop computers as well as mobile phones.

To develop the application, a group of students team up from different origins of the globe for the MS program at HS Fulda. This diverse team includes a senior developer Muhammad Adnan as Team Lead & Frontend lead, Muhammad Waqas Hussain Lakhani as Backend lead and UI/UX lead, Ahmed Shahid as Git Master, and Banshi Jivani, Muhammad Ziam, and Bilal Mehdi as developers.

2. Personae and Use Cases:

Key Personas:

Category 1: Students

General Characteristics: Responsible, Self-Awareness

Goals: Cheap products, find a room, find a tutor for a specific course, find a part-time job.

Skills: Intermediate computer skills, Familiar with mobile UI

Pain points: They want a website, where he/she can find cheap products, room. In addition, there is no portal in the city to find a tutor for some courses offered in the university. In addition, they want to find a job which is offered in the University to save time as much as possible.

Persona example: Mohsin is a 20y old student, newly arrived in Fulda city from Asian region, He want to complete his Masters from the university, However, He is from poor family and apart from his studies he wanted to earn money but without wasting time on other odd jobs in the market, Apart from his studies he is trying to find a job in the university. Moreover, he just got his room without some mandatory furniture so he is looking for any help in the city to find him good and cheap furniture.

Category 2: Admin Staff

General Characteristics: Confidence, Teamwork

Goals: Sell unused items in the university, posting available jobs

Skills: Basic computer skills, Microsoft Office

Pain points: They want a facility, where they can sell unused items from the university, because every year the university scraps too many things, and they think that it can be useful for most of the students, Moreover, they want to post university jobs so that only their university's students can hire.

Persona example: David is one of administrative person, he used to post university related jobs on other ecommerce websites for only Fulda University's students, however, its very hard him to manage too many applications because most of the applicants are from other universities, so he finds a solution to post jobs for only University's students.

Category 3: Faculty Member

General Characteristics: Responsible, Mature

Goals: Selling products and services

Skills: Expert computer skills

Pain points: They want a website, where they can buy products and sell their services e.g. teaching.

Persona example: Lynette is a PhD professor, she is very good in Programming and in the lecture-free period she wants to teach programming to students and wants a platform to advertise her teaching services.

Use Cases:

Selling an Item: A user from the university wants to sell any item on the website, he/she has credentials to log in into the application, he login to the application and go to the sell item page, where he adds some details about the item and some pictures and submit the form.

Buy an Item: University student wants to buy a cheap sofa for his room, he comes to the side and goes to the “furniture” category in the site and finds a cheap sofa, then he contacts the person who is selling it by phone that is mentioned in the ad. After that they decided to meet at some place because the buyer wants to see the sofa condition, after evaluation he buys the sofa.

Find a tutor: University student wants to find a language teacher, he come to the site and search a tutor, he got some results but he tried to find a teacher that resides in the Fulda city, he finally go the right contact and he contacted the person through a form on the website, he get respond after some time from the tutor and finalize the fees and time table.

Forgot Password: A user forgets the password and wants to recover the password, he goes to the site and enters his/her email address and get a recovery process on his email address to recover his/her password.

Add a Service: A PhD student working as a teaching assistant is good at programming and wants to teach students in his available hours. He will add an hourly service to teach programming. The interested students can contact him through chat and can discuss further.

3. List of main data items and entities – data glossary/description

User: id, name, dob, email, registeredDate, password, image, isActive

Product: id, name, description, price, sellingType, category, images, isSold, isActive, dateAdded

Message: id, sender, receiver, message, timestamp

SellRequest: id, userId, productId, timestamp, amount.

4. Initial list of functional requirements

- i. Users should only be able to register with their University's email address (emails with suffix, "hs-fulda.de").
- ii. Only registered users should be able to login to the platform.
- iii. Users should be able to update a profile.
- iv. Users should be able to search for products or services by a keyword.
- v. Users should be able to filter items by category and price range.
- vi. Users should be able to sort items by posted date and price in ascending or descending order.
- vii. Users should be able to view the details of items on the website.
- viii. Users should be able to send and receive messages between each other.
- ix. Users should be able to list their product/service on the platform.
- x. Sellers should be able to change the status of an item as sold, unavailable, available.
- xi. Sellers should be able to edit ad (price, images, description. etc).
- xii. Admin will review before publishing an ad to the website.
- xiii. Users should be able to report another user.
- xiv. If a user is inactive for a certain time, then he will be automatically logged out from the application.
- xv. Users will be able to see their recently viewed products.
- xvi. Showing similar or related products in the product page.
- xvii. Users will be able to review sellers.
- xviii. Admin should be able to block/unblock users.
- xix. Users can request for a product/service they want to buy.
- xx. Sellers can add FAQs of listed products so they don't have to give answers to commonly asked questions to every person.
- xxi. Sellers can create a duplicate ad of their product/service.

5. List of non-functional requirements

- i. Application shall be developed, tested, and deployed using tools and servers approved by Class CTO and as agreed in M0 (some may be provided in the class, some may be chosen by the student team, but all tools and servers must be approved by class CTO).
- ii. Application shall be optimized for standard desktop/laptop browsers e.g., must render correctly on the two latest versions of two major browsers.
- iii. All or selected application functions must render well on mobile devices.
- iv. Data shall be stored in the database on the team's deployment server.
- v. No more than 50 concurrent users shall be accessing the application at any time.
- vi. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users.
- vii. The language used shall be English (no localization needed).
- viii. Application shall be very easy to use and intuitive.
- ix. Application should follow established architecture patterns.
- x. Application code and its repository shall be easy to inspect and maintain.
- xi. Google analytics shall be used (optional).
- xii. No email clients shall be allowed. Interested users can only message to sellers via insite messaging.
- xiii. Pay functionality, if any (e.g., paying for goods and services) shall not be implemented nor simulated in UI.
- xiv. Site security: basic best practices shall be applied (as covered in the class) for main data items.
- xv. Media formats shall be standard as used in the market today.
- xvi. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development.
- xvii. The application UI (WWW and mobile) shall prominently display the following exact text on all pages "Fulda University Software Engineering Fall 2020. For Demonstration Only" at the top of the WWW page. (Important to not confuse this with a real application).

6. Competitive Analysis

Features	E-Markt Fulda	Ebay	OLX	FB Marketplace
Product listing	YES	YES	YES	YES
Service listing	YES	YES	NO	NO
Home Delivery	NO	YES	YES	NO
Online Payments	NO	YES	NO	NO
International Shipping	NO	YES	NO	NO
Messaging	YES	YES	NO	YES
Audience	HS Fulda Students/Staff/ Faculty	Everyone	Everyone	Everyone

As our target audience is very specific, Students, Staff and Faculty can easily buy/sell or exchange any product or service within Fulda. It will be easier for users as they know that other users are also related to HS Fulda. Just like other platforms, our application will allow users to add product/service listings. Our product has all the required features as of our competitors the other key features are not added because of limitations and scope of the project

7. High-level system architecture and technologies used

Hosting server and solution: We are using AWS as a cloud provider for the hosting service, and a EC2 instance will be used as the server to host the web application.

Programming languages and frameworks: We are using NodeJs for the backend framework along with Express framework. Bootstrap will also be used in the frontend to help with the responsive design of the HTML pages.

Database Server: We are using MySQL database server for the web application.

Web Server: Nginx web server.

8. Team Roles

Member

Role

Muhammad Adnan	Team Lead/Front end(lead)
Muhammad Waqas Hussain Lakhani	Backend(lead)/DBA
Ahmed Shahid	Backend/Github
Bansi Jivani	Frontend/Documentation
Muhammad Ziam	Frontend
Bilal Mehdi	Frontend

9. Checklist

So far, all team members are engaged and attending WebEx sessions when required.	DONE
Team found a time slot to meet outside of the class.	DONE
Back end, Front end leads, and GitHub master chosen.	DONE
Team decided and agreed together on using the listed SW tools and deployment server.	DONE
Team ready and able to use the chosen back and front-end frameworks and those who need to learn are working on learning and practicing.	DONE
Team lead ensured that all team members read the final M1 and agree/understand it before submission.	DONE
GitHub organized as discussed in class (e.g., main branch, development branch, folder for milestone documents etc.).	DONE