

Global Distributed Software Development

## Master AI Team Project WS2020

Global Software Development

Project

# FuldaMarkt

### *Milestone 1*

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## Team 2

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### Revision History

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# 1. Executive Summary

We, the students of Hochschule Fulda are assigned to design a system in Global Distributed Software Development course for students, faculty and other staff of the university. As the life-after-Covid employs, the acceptance/adoption of online solutions are drastically increased all over the world. Especially for the educational institutes and ecommerce applications. This study aims to establish a preliminary assessment, evaluation and understanding of the characteristics of online shopping experience for the students, faculty and university staff.

This system named “FuldaMarkt” includes online solutions for the above-mentioned target group. Users may offer their passed down goods or services for sale and to search for goods or services available by other users to purchase. FuldaMarkt also allows users to offer online tutoring sessions or extracurricular activities for students and faculty. The credibility of this process is ensured by the administrative approval of every goods or services.

## 2. Personae and main Use Cases

### 2.1 Personae

In this section, the categories of users who are likely to use the application will be discussed, along with the use cases in which the application will be useful. The application usage will assume that all users accessing it have a stable internet access and a PC/Laptop to allow for adequate viewing of the website.

#### **Category 1: Students:**

This application will be a portal for all students of Hochschule Fulda (probable expansion to SFSU in the future) to buy, sell and exchange goods and services, if the items presented are approved by a website administrator. The goal is to provide a trustworthy place for students to exchange common goods and equipment that will likely aid them in their studies or research.

#### **Category 2: University staff and faculty members:**

In addition to students, staff and faculty members can use the website to organize extracurricular activity or tutoring sessions through a separate section on the website. This way, students are more aware of how and when these activities are taking place and do not need to scroll through their emails or moodle posts to know what kind of events are taking place at their university.

### 2.2 Main Use Cases

#### **2.2.1 Use Case 1:** A student looking to replace their webcam

During his studies, a student of Hochschule Fulda is having difficulties using his laptop webcam to communicate with his tutors in the online class sessions. He is on a tight budget and cannot afford to buy a brand-new webcam from an electronics store. He decides to browse the exchange website to look for good-condition webcams to use in his online classes. After finding a post of another student selling his/her webcam online. They start organizing a meeting via the website chat service to complete the transaction.

#### **2.2.2 Use Case 2:** A student looking to sell their laptop

After upgrading to a better machine, a student of Hochschule Fulda is looking to sell/giveaway her old laptop to a trustworthy student from the same university. She had previous bad experiences using other e-commerce solutions and wants to make sure the transaction is as safe as possible while benefitting other students in need of a good laptop.

### 2.2.3 Use Case 3: International office trip

The international office of Hochschule Fulda wants to organize a trip for newly enrolled students and other students who are interested to get to know each other. They can post an announcement on the events section of the website to let students know about when the event is taking place and the activities of the event, in addition to fees to be paid for admission. Students can then use the contact details provided in the announcement to register in the event.

### 2.2.4 Use Case 4: Preparation courses

The faculty of applied informatics is looking to host a preparatory/practice session for newly enrolled students or students looking to refresh their skills in subjects such as mathematics or programming. They can post an announcement on the events section of the website. The announcement includes the time and place of the session, fees, contact details and possibly the current number of free seats available for the session.

### 2.2.5 Use Case 5: For students, by students

An outstanding student has noticed that his classmates are struggling in understanding one of the courses they are enrolled in. In order to help his fellow classmates, he has decided to host an online session outside of class times to do more practicing, for a simple fee. He can use the application to post an advert about the time of the session and the fee of registration.

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

In this section, the types of users who will be implemented and their privileges will be discussed. Additionally, a general description of the data that will be attached to users and their posts will be laid out. This section outlines general information and is highly subject to change as the application development progresses.

Below is a table that describes the website users and their privileges:

User type	Create post in “Event” Section	View post in “Events” Section	Modify post in “Events” Section	Delete post in “Events” Section	Create post in “Market” Section	View post in “Market” Section	Modify post in “Market” Section	Delete post in “Market” Section
Admin	Y	Y	Y(A)	Y(A)	Y	Y	Y(A)	Y(A)
Student	N	Y	N	N	Y(*)	Y	Y(*)	Y
Faculty	Y	Y	Y	Y	Y	Y	Y	Y

- Administrators have full privileges on the website.
- They can create posts on both sections of the website and modify or delete any posts.
- Students can only view posts on the “Events” section. On the “Market” section they can (\*) post and modify their posts but only after administration approval.

- Faculty members can create and view a post on both sections but can only modify and delete their own posts.
- All users can message each other via the website chat service.

Users have the following data attached to them (can be modified in the future):

- Username: The username that is created at first log-in.
- Type: The type of user can be modified by the admin.
- Email: The email has to end with “hs-fulda.de”. No email verification will take place.
- Posts: Posts that the user has posted. Possibly viewable when clicking on the username.

Posts have the following data attached to them (can be modified in the future):

- Post section. Can be either “Events” or “Market”.
- User who created the post.
- Post picture(s).
- Post text.

## 4. Initial list of functional requirements

1. All users should be able to browse for available items on the website.
2. All users should be able to search for items on the website.
3. All users should be able to filter items on the website by category.
4. All users should be able to sort items by posted date and price in ascending or descending order.
5. All users should be able to view the details of items on the website.
6. Users who provide emails with suffix, “hs-fulda.de” should only be able to register for the website.
7. Registered users should be able to login to the website.
8. Registered users (Sellers) should be able to post items for sale.
9. Registered users (Sellers) should be able to post items that can either be physical products or services.
10. Registered users can be of two types, Student and Faculty of HS Fulda.
11. Registered users should be able to view the contact details of the Seller.
12. Registered users (Buyers) should be able to send message to the seller to buy available items posted by the seller.
13. Registered users (Sellers) should be able to reply to messages sent by the buyers to sell items.
14. Registered users (Buyers and Sellers) should be able to view list of messages sent and received.
15. Registered users (Buyers) should be able to request to buy an item.
16. Registered users should be able to mark an item as ‘favorite.’
17. Registered users should be able to unmark an item from ‘favorite’ list.
18. Registered users (Sellers) should be able to mark an item as sold, unavailable, available etc.
19. Registered users (Buyers and Sellers) should be able to see the list of items they bought or sold.
20. Admin User should be able to approve or disapprove an item posted by a registered user (seller).
21. Admin User should be able to delete inappropriate items posted by a registered user (seller).
22. Admin User should be able to delete/block registered users from the system.

## 5. List of non-functional requirements

1. Application shall be developed, tested and deployed using tools and servers approved by Class CTO and as agreed in M0.
2. Application shall be optimized for standard desktop/laptop browsers. It will render well on two latest versions of two major browsers: Google Chrome and Firefox.
3. All or selected application functions must render well on mobile devices
4. Data shall be stored in the database on the team's deployment server.
5. No more than 50 concurrent users shall be accessing the application at any time.
6. Privacy of users shall be protected, and all privacy policies will be appropriately communicated to the users.
7. The language used shall be English.
8. Application shall be very easy to use and intuitive.
9. Application should follow established architecture patterns.
10. Application code and its repository shall be easy to inspect and maintain
11. Google analytics shall be used (optional)
12. No e-mail clients shall be allowed. Interested users can only message to sellers via in-site messaging.
13. Pay functionality, if any shall not be implemented nor simulated in UI.
14. Site security: basic best practices shall be applied for main data items
15. Media formats shall be standard as used in the market today
16. Modern SE processes and practices shall be used as specified in the class, including collaborative and continuous SW development
17. 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.

## 6. Competitive analysis

	<i>FuldaMarkt</i>	Amazon	Udemy	eBay Classified
<b>Product Listing</b>	Yes	Yes	No	Yes
<b>Service Listing</b>	Yes	Yes	Yes	No
<b>Target Group</b>	Student/Faculty/Staff	Everyone	Students/Faculty	Everyone
<b>Chat</b>	Yes	No	No	Yes
<b>Delivery/Shipping</b>	No	Yes	No	Yes
<b>Feedback/Rating</b>	Only user feedback	Yes	Yes	Yes
<b>Online Payment</b>	No	Yes	Yes	Yes

There are many well recognized online platforms available in the market which offers ecommerce solutions. *FuldaMarkt* also offers ecommerce features in this market and have relatively limited features due to the project scope, but it covers almost all core features. *FuldaMarkt* is like a hybrid system which provide solution for both the ecommerce and online tutoring.

## 7. High-level system architecture and technologies used

### Technology Stack

- Server Host: Amazon AWS EC2 1vCPU 1 GB RAM
- Operating System: Ubuntu Server 20.04 LTS
- Server Database: MySQL v.14.14 Distrib 5.7.27
- Web Server: Apache v.2.4.29 (Ubuntu)
- Server-Side Language: PHP 7.2.24

### Additional Technologies

- IDE: IntelliJ Idea 2020.1
- Web analytics: Google Analytics
- Frontend Library: Bootstrap 4.5

## 8. Team and roles

Team member	Role
<b>Syeda Tasneem Rummy</b>	Team Lead, GitHub Master, Document Master & Backend Lead
<b>Syed Sumair</b>	Frontend Lead
<b>Ahmed Abdullah</b>	Backend Developer
<b>Chowdhury Amlan Barua</b>	Frontend Developer

## 9. Checklist

SI #	Item	Status
1.	So far, all team members are engaged and attending WebEx sessions when required	OK
2.	Team found a time slot to meet outside of the class	OK
3.	Back end, Front end leads, and GitHub master chosen	OK
4.	Team decided and agreed together on using the listed SW tools and deployment server	OK
5.	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	ON TRACK
6.	Team lead ensured that all team members read the final M1 and agree/understand it before submission	ISSUE: Did not get confirmation from <b>Chowdhury Amlan Barua</b> if he read the M1 document.
7.	GitHub organized as discussed in class (e.g. master branch, development branch, folder for milestone documents etc.)	ON TRACK