Global Distributed Software Development
Fulda Fall 2019

Project

LetStuffGo

Milestone 01

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Team G6

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Revision History

Revision	Status	Date
Version 0.1	Created	05-11-2019
Version 0.2	Updated	12-11-2019

CEO & CTO: **Prof. Rainer Todtenhoefer,** Fulda University, Germany

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1. Executive Summary

We the students of Fulda University of Applied Science studying Global Software Development were selected by our class CTO and CEO as a team of 5 members in the course Global Distributed Software Development. Our team came up with the idea to develop a Buy/Sell website platform named, "LetStuffGo" to sell 'used' furniture, electronics, books, clothes etc. to buyers who would find it easy to browse the website and look for useful items on sale. We were motivated to build this web application because it is a very common practice among students with limited monthly budget to look for cheap reusable items and buy them for personal use. The concept of buying/selling of used items is not a new concept in the web platform, but developing a website that is specially designed to fulfill users' needs considering users' convenience to find a required item is quite rare and challenging. Our website's goal is to provide a platform to unite our interested buyers and sellers of "used items" so that they can do business with each other peacefully and confidently without being concerned about scammers or spammers.

Our website aims to allow our university students and teachers to be able to login to the system and post their "used" furniture items. They would be able to sell items by communicating with the buyers using our web interface. Our website would allow users to search for items on sale, view details and request information from the seller. Our buyers need to create an account and login to the system in order to send messages to seller. The products would be displayed by separating them into categories for easy search and sort functionality. The newly added items on sale would be highlighted for the users to see. For security of our buyers and sellers we would have an administrator to manage the posting of items before it can be made visible to users in general. The process of buying and selling items would be made as convenient and simple as possible resulting in development of trust between buyers and sellers.

Our team of 5 members are unique in their capabilities to develop a web application for the buy/sell business. Some of us are good in developing good user interface while some are expert in designing and implementation of business logic, database technology and application deployment in web server. Together as a team we hope to deliver a functional and useful web application that fulfills our project goal.

2. Personas and main Use Cases

2.1 Personas

Our website will have 5 types of users as described below:

a. **Anonymous user:** Anonymous users are users who visits or browse the website without logging in.

Bob is a first semester student at Fulda University of Applied Science in the Bachelor Program, Gesundheitstechnik of 'Pflege und Gesundheit' department. He recently came to Fulda, Germany, from his home country. His new flat has only minimal furniture given by the flat owner. He has no idea what other furniture he could need in his new flat. He would like to look for cheap furniture near his area but has no immediate plan for buying. He received a website URL link from his friend Terry to look for used items on sale. He thinks he should visit the website to see what it has.

b. **Seller (Student):** 'Seller (Student)'s are users who are students of Fulda University of Applied Science and are interested to sell items on the website by creating an account and logging in.

Alex is a third semester Master student at Hochschule Fulda, studying Economics. He has experience browsing the internet from his laptop computer as well as mobile phone. He wishes to sell his old smartphone hoping to earn some pocket money reliably with minimal effort to anyone who is interested to buy from him in person.

c. **Seller (Faculty):** 'Seller (Faculty)'s are users who are lecturers and professors of Fulda University of Applied Science and are interested to sell items on the website by creating an account and logging in.

Professor Leibnitz is a faculty of Hochschule Fulda and has been teaching for more than 7 years in the department of Economics. He has collected some rare books and is interested to share them with his students where students would buy them at a cheap price.

d. **Buyer:** Buyers are users who are students and faculties of Fulda University of Applied Science and are interested to buy items from the website by creating an account and logging in.

e. **Admin user:** Admin user is a user with all privileges to view/add/edit/delete products, users and any item or artifact that is required to run the business of the website. Admin users can also approve or disapprove a posted item for sale on the website.

2.2 Main User Cases

Following are some high level use cases for our application which covers the major functionality and scenarios:

User Case 1: Browsing for items by Anonymous User

Bob wants to browse and checkout our website to see what is available to buy. He opens his browser of his computer and types in the URL of our website, “LetStuffGo” and in home page he finds some recently added items and a list of categories such as ‘Furniture’, ‘Electronics’, ‘Clothes’ etc. He browses to the ‘Furniture’ category and sees a list of images of furniture with some related information. He can further browse the items page by page and select an interesting one to see it’s details, price

User Case 2: Posting an Item for sale by a Student

Alex wishes to sell his old smartphone. Being advised by his friend Maria, he starts using our sites.First,he creates an account as the buyer.Then,by publishing his product to our app and waiting for potential customers to show an interest,he accepts one of the bids and successfully sells his product.

User Case 3: Posting an Item for sale by a Professor

Professor Leibnitz is a faculty of Hochschule Fulda and has been teaching for more than 7 years in the department of Economics. He has collected some rare books and is interested to share them with his students where students would buy them at a cheap price.

In the class, the professor mentioned about that. On that time Alex suggests Professor to upload his books in LetStuffGo. After came to know about LetStuffGo professor open an account as a seller and upload all information of his books required to sell in website.

Use Case 4: Messaging a Seller to express his/her interest in buying a particular item

One of the most important aspects of the application is communication between seller and buyer. If a buyer interested in a particular item of a seller through our application he will be able to contact him/her successfully using a chat-like feature within the application or using email.

Use Case 5: Approve a posted item for Selling.

If a seller wants to sell his/her product through "LetStuffGo" he/she should submit a registration form as a seller. After that he/she will able to sell products in "LetStuffGo". Every posted item by a seller will be verified by the admin section before publishing it to the public.

User Case 6: Search product

All users of the site can be able to browse and search products after publishing it by the admin section. Products can be searched by its name or category.

Use Case 7: Selling an Item to an interested Buyer

After browsing or searching for a product, user can be able to buy the products and if interested can make an order. Payment can be completed using a payment gateway or customers can pay the bill as cash on delivery method.

Use Case 8: Contact

There will be an exclusive service. Every single item, displayed on our website, contains details about the owner of the item, so the buyer has option to contact user via mobile phone before or after making an order and contact directly through website.

Use Case 9: Reviews

After a successful purchase, a buyer can provide a review of the product and the service. Reviews including star-based rating where 5 is the highest-rated while 1 is the least rated. There may also be a comment section for feedback.

3. List of main data items and entities / Data Definitions

Product: Product is any item that will be sold on our website that has a name, image, price, description, category and a possessor/owner.

Category: Category is a name to categorize the posted product item selected by the registered user from a pre-defined list of category names.

User Type: User Type is a name used to categorize the type of users interacting with the system based on their privileges.

Anonymous User: Anonymous User is someone who can only browse and view the products of the website without logging into the site.

Registered User: Registered User is someone who can not only browse and view the products posted on the website, but also post a product, send private messages to other users who has items on sale on the website and view own user dashboard.

Buyers: Buyers are registered users who can request to buy an item from another user by sending them private messages.

Sellers: Sellers are registered users who can respond to buyer's messages to sell their product

- **Administrator**
- **User Dashboard**
- **Admin Dashboard**
- **Private Message**

4. Initial List of Functional Requirements

- Users should be able to register for the website
- As a consequence,users should be able to login
- Registered users should be able to post items for sale
- Buyers should have an opportunity to seek items
- Buyers should have a functionality allowing them to filter items by classification(that is,category)
- The ability to put an item to a shopping cart must also be implemented

5. List of Non- Functional Requirements

- When developing an application, we all should stick to tools and the software stack highlighted in M0 and approved by Class CTO
- Some application functions must be renderable in mobile devices
- Data should be stored in our database of choice on our deployment's server
- Privacy of every used should be attended to
- The usage of an application should be easy to use and intuitive
- The medium of communication should be English

6. Competitive Analysis

Nowadays people are so much interested to buy products online, as a result, the number of online platforms is increasing day by day. That is happening because of the awareness about online shopping amongst the customer. Anyone can find thousands of e-commerce sites on the internet. "LetStuffGo" is also an e-commerce application where students and faculty members of Hochschule Fulda can able to sell and buy their used products. We are analyzing other e-commerce platform's strengths to make "LetStuffGo" user-friendly.

Features	eBay	Amazon	Media Markt	LetStuffGo
Faculty & Students can sell item	✔	✔	✖	✔
Review and Rate item	✔	✔	✔	✔
Sellers contact information	✔	✖	✖	✔

Product search	✔	✔	✔	✔
Local community support	✖	✖	✖	✔

The table shows a comparison of 4 e-commerce applications. Our product can make an impact on the varsity community. It will improve good relationships amongst the students and faculty members. Students can earn some extra money. On the other hand, faculty members are able to share their notes and books with students. This is the main difference between LetStuffGo and other e-commerce companies.

7. High-Level System Architecture

- Server Host: **Amazon AWS EC2 1vCPU 1 GB RAM**
- Operating System: **Ubuntu Server 18.04 LTS (HVM), SSD**
- 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:

- Web Framework: **Laravel 6**
- IDE: **PHPStorm JetBrains**
- Web Analytics: **Google Analytics**

8. Team

- **Syeda Tasneem Rumy** (Team Lead & Backend Lead)
- **Emin:Gasimov**, (GitHub Master)
- **Md Firoj Kabir,** Frontend Lead
- **Haseeb Safdar**, Frontend
- **Muhammad Naeem Afzal**, Frontend

9. Checklist

Checklist Item	**Status**
➢ Team found a time slot to meet outside of class.	DONE
➢ 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.	ON TRACK
➢ 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. master branch, development branch, folder for milestone documents etc.).	ON TRACK