REQUIREMENT AND DESIGN DOCUMENT

V1.0

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In fulfillment of

Network Based Application Development (Fall 2018-ITCS 4/5166)

Master of Science (Information Technology)

University of North Carolina at Charlotte.

CONTENTS

Abstract

The project started by having a requirement of choosing a content swapping domain of interest to each individual and was expected to develop our own unique site with branding, categories, and items representative of that domain. The domain in this project chosen was about creating a swapping website named as “N” item Swap using which any one can place their item as a giveaway or expect an item as a part of swapping process. The process is defined transparently, and care has been taken of each item of the user. Various other requirements were provided during each phase of assignments and all the functionality was achieved up to the expectations along with focusing on code quality and its best practices. The document talks about the requirements provided during each phase of assignments, the design implemented, site map, page design and ER diagram for persistent database. Thus, the objective of the coursework towards being expert on market trending technologies of MEAN stack development was achieved.

1.PROJECT OVERVIEW

In our day to day life, we use many tools and technologies for human survival. The tools range from bicycle, cellphone, home furniture, utensils and many other. We almost make use of any of the item everyday which is a need of the hour. It is hardly possible that a person could survive and live normal human life without using it. And at the same time there are sometimes situation where you do not use an item, or you feel that the item is no longer of use for yourself. But there could be someone who needs that and wants to use it. For example, let's say you have a lamp at your home and some how you do not use it. This may be because you didn't like it and got another or may be, there is no need for it for you. But there is someone one in your community or other community who desperately needs a lamp for studying. So, here we come in picture to help both. What if you got another item which you need and wanted to use in exchange of lamp? That's interesting right. So, our web portal i.e. N item swap intends to solve this problem by helping both to swap the items and use it. Thus, helping all similar kind of individuals and making the community happy and saving waste.

Talking about the project specifically, the "N item swap" helps individual who are having certain items and want to get some other item in exchange of it. The user just must sign up with the portal and browse the items which he/she needs. Once the item is added to cart, just confirm the swap with available items in own bucket and hurray!! You are good to go. We take care to notify you via mails about the shipment and all other tracking stuff.

That target audience for the web portal is all individuals who are working in offices, students and all other people who just have some items to let you for others to use in return of some other items which you feel would help you. Our goal is to help all people and lessen the wastage of the materials/items which normally you would throw out in a garbage.

In general following were the requirements assigned during the coursework and its status at the time final deliverable.

Assignment Requirement Number	**Requirement description**	**Status**
1	This requirement at first step was to develop a web application by creating a set of static HTML5/CSS pages for several core parts of the application flow.	Achieved
2	Moving ahead in the project, the requirement was to familiarize students with designing an MVC web-based application delivered through a web server. The same was supposed to be implemented in the site portal with proper logics and control segregated.	Achieved
3	Later it was required to get familiarize with delivering dynamic views and using sessions to maintain state in your web application.	Achieved
4.1	As the requirement was crucial in the project, the requirement was divided into two milestones. The first milestone of the project was to focus on persistent data. Here, it was required to implement mongo database and populate different documents in order to store the project information.	Achieved

4.2	In the second part of the milestone, it was required to connect our newly created database to the application. Making sure all the functionality works fine like earlier and storing all the requirement information in the mongo DB documents.	Achieved
5	The last piece of the project was intended to get familiarize of implementing security measures to enhance the application robustness to security attacks. This is one of the vital features of the application project as it focuses on the security layer of the project.	Achieved

2.SITE MAP

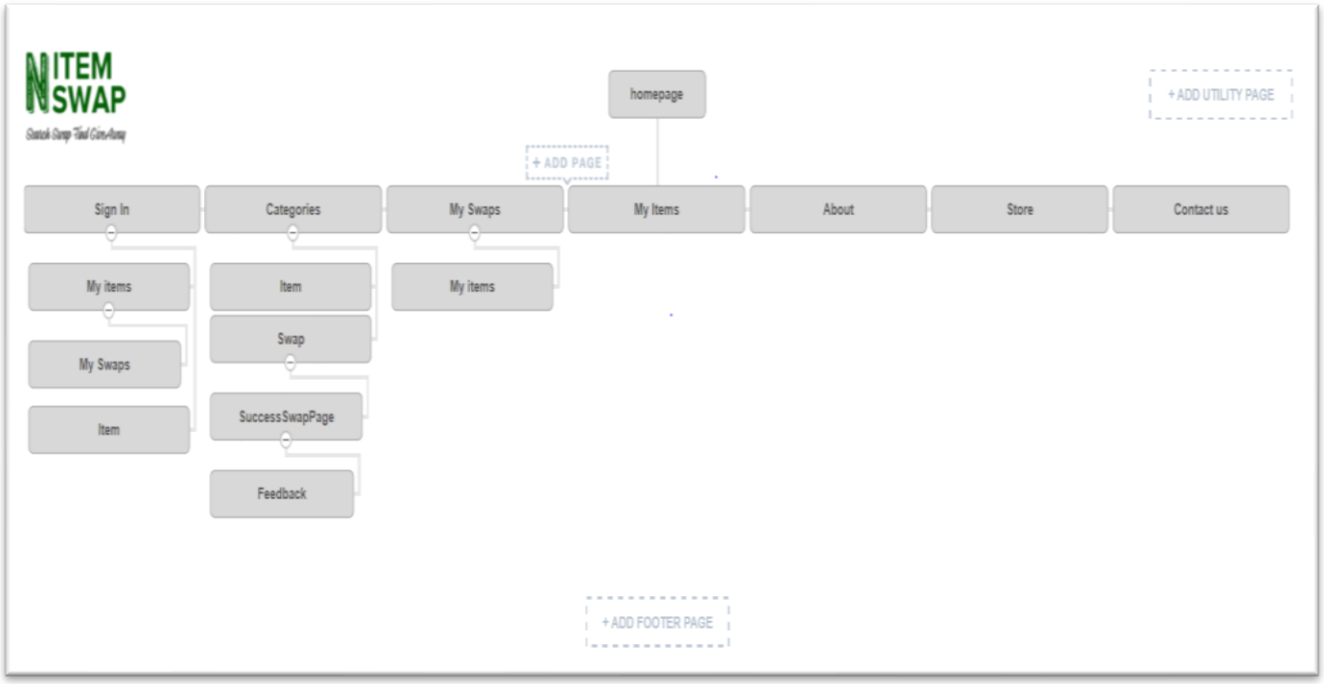

Figure 1. Site map for N item Swap.

The above is the sitemap for the “N item Swap” portal. There are totally 11 pages connected to each other via different user pathways.

User specific pages (User needs to be registered)

- My swaps
- My items
- User categories
- Item
- Swap
- Feedback

Public view pages (User do not need to be registered)

- Homepage
- Categories
- Contact us

3. PAGE DESIGN

3.1 Page Name: Homepage

o Purpose: The page servers as the home for the application web portal.

o Audience of Page: All the general users as well as registered users of the web portal.

o What data (fields) will be presented on the page based on what logic?

The static content having a brief description about the web portal is present on the page. The frame work used to present is EJS. No other dynamic fields are populated on this page.

o What validations (if any) will exist on page? (of data fields above).

No validations for home page.

o What buttons or hyperlinks will exist, and what actions will be taken when clicked

Sign in – Will render to the login page where user can login to individual profile.

Links to all other pages present in the web portal.

o Special notes regarding page (if any)

None.

3.2 Page Name: Categories

o Purpose: The page servers as the page for listing out all the categories of the portal where user can browser and select which ever items required for swap.

o Audience of Page: All the general users as well as registered users of the web portal.

o What data (fields) will be presented on the page based on what logic?

The page is completely loaded dynamically from database documents. The collection “categories” has all the information regarding categories and its items. The information is populated from same collection and displayed on the page. Database connection is established which pulls the information using mongoose function and renders the same towards view using EJS framework.

o What validations (if any) will exist on page? (of data fields above).

Validation to check if the user is logged in or not. If the user is logged in, then the categories/items are filtered else public view of the categories page is displayed. Along with, when user clicks on item, it gets validated if the user session exists and correct item is selected.

o What buttons or hyperlinks will exist, and what actions will be taken when clicked

Sign in – Will render to the login page where user can login to individual profile.

Item – Will render to the specific item page where it will show its information.

Links to all other pages present in the web portal.

o Special notes regarding page (if any)

None.

3.3 Page Name: My items

o Purpose: The page servers as the home for the user profile. It provides information about the items currently in the bag. The status of each items and its possible actions.

o Audience of Page: All the registered users of the web portal.

o What data (fields) will be presented on the page based on what logic?

The information regarding the current user items and its associated possible actions is presented on the page dynamically.

o What validations (if any) will exist on page? (of data fields above).

Validation to check if the user is logged in or not. If the user is logged in, then user items are presented else login page is displayed. Along with, when user clicks on item, it gets validated if the user session exists and correct item is selected.

o What buttons or hyperlinks will exist, and what actions will be taken when clicked

Sign in – Will render to the login page where user can login to individual profile.

Update button if the item status is pending– Will render to my swaps page.

Update button if the item status is available – Will render to my items page.

Links to all other pages present in the web portal.

o Special notes regarding page (if any)

None.

3.3 Page Name: Sign in

o Purpose: The page serves as sign page for user login. If the user is already registered, can login to this page with respective credentials and get in to the application.

o Audience of Page: All the registered users of the web portal.

o What data (fields) will be presented on the page based on what logic?

The data fields to ask about username and password.

o What validations (if any) will exist on page? (of data fields above).

Validation to check if the user name and password is correct. Along with the format of the passwords. Also, SQL injection attack has been taken care.

o What buttons or hyperlinks will exist, and what actions will be taken when clicked

Sign in – Will render to the login page where user can login to individual profile.

Submit button will take the user to the user profile home page if the login is successful.

Links to all other pages present in the web portal.

o Special notes regarding page (if any)

None.

4. ER- Diagram

Figure 2 : As it's a Non-Relational database, we can show the model using a non relational model.

- The above collections has been created for storing the different kind of information for the users and its usecases.
- *Items* collection is used to store the catalog details such as itemID,itemName,categoryCode,etc. This is one of the most vital collection in the project.
- *Categories* collection depicts the categories associated with each categoryID which is referecned into the *items* collection.
- *Offers* collection takes care of different offers available for the logged in user.
- *Users* collection takes care of storing information about the user into it. Information about first name, last name, userID,etc
- *Useritems* collection is populated with information about items associated with given user id.
- *Userprofiles* collection is taking care of storing the information about which items are taken by the user currently and its items, rating,etc.
- *Swaps* collection takes care of storing information about the swaps.