Course Project Report

SENIOR CAPSTONE

College Bazaar

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Version History

Version #	Implemented Section	Details/Comments
<1.0>	Requirements Phase	We are creating the design and structure

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I. Project Description

A. Problem statement

College students have items and services to offer for sale, while others are always looking for items and services to purchase. Other college students are looking for roommates, advice, and/or class help. Our application will be the platform that brings college students together so they can accomplish all of these goals.

B. Objectives

College students often have various items they would like to sell (such as old textbooks, class supplies, etc), and also can offer many services (such as tutoring) to other classmates within their community. Our objective is to create a website where college students can register to and subscribe to their college's portion of the website, and can offer up these goods and services for sale to members of their college. Colleges will register with the website and pay a monthly fee to allow their students access to the system. This will make it easier for their students to connect with each other and adds to their sense of community within the college.

Students shall register with their college email address to join, for purposes of verification, and the system will only accept valid school email addresses. The website's purpose is for students to be able to sell items, purchase items, and to provide and accept services within their college's community. Colleges will be able to register and appoint administrators who will have the authority to approve or deny student requests, whitelist safe domains, blacklist malicious domains, and promote/demote school user accounts (including blocking). Each college shall have group forums of varying subjects that the students and admins are able to post to. Website admins have the authority to approve or deny school requests. The System shall allow payments for goods and services to be made via paypal, and in a secure manner.

C. Target Environment

Currently our target environment are the colleges and their students, located in different colleges across the State of Michigan.

D. Technologies & tools

Programing languages: HTML5, CSS, JAVASCRIPT, JAVA, PHP, MYSQL.
Design software: Photoshop
Coding framework: JHipster
Testing Software: WAMP
Hosting: Google Cloud Platform
Development: Ubuntu (live), Cloud 9 (work), github (work)
Security: Cloudbric
Hardware: MySql server - Google Cloud Platform; Apache2 Webserver - Google Cloud Platform
Group Communication: Google Docs; Slack, Email

E. Risk Management and Mitigation

Risks

1. All of us work full - time and have many other classes. Finding 800 to 1,000 man hours to create a complex project will be challenging.

2. We are each expanding our areas of knowledge into more complex developing and coding areas in a short amount of time.

3. Our schedules all collide and it is difficult to find times when we are all available at the same time.

Mitigation

1. We all have different skills and we will utilize our different strengths to pull this project together in time.

2. We will each document and post research into github so we can share what we are learning to help each other.

3. We will utilize slack, google documents, and plan ahead to make sure we are communicating effectively and in a timely manner.

II. Requirements

A. Functional requirements

Identifier	Functional Requirement
REQ1	The system shall display a registration page.
REQ2	The system shall provide the ability for the user to become a subscriber to the website after registering.
REQ3	The system shall successfully store the subscriber's registration information in the database.
REQ4	The system shall successfully store data from the website into the database.
REQ5	The system shall provide the administrator with administrator privileges.
REQ6	The system shall store all administrator's login information in the database
REQ7	The system should detect fake emails.
REQ8	The system should be available on a PC.
REQ9	The system should be available a mobile application.
REQ10	The user shall be able to login with their student email address and password.
REQ11	The user shall be able to post products/services for sale.
REQ12	The user shall be able to post into forums of various subjects.
REQ13	The user shall be able to purchase products/services for sale.
REQ14	The user shall be able to send private mail to other users.
REQ15	The system administrator shall have special system administrator privileges.
REQ16	The college administrator shall have the special college administrator privileges.

REQ17	The website administrator shall have the ability to push updates to the website.

B. Non-functional requirements

Identifier	Non-Functional Requirement
REQ18	The system shall secure information stored in the database with encryption.
REQ19	The system shall provide a secure https connection for payment transactions.
REQ20	The system shall provide DDOS protection.
REQ21	The system shall provide website analytics.
REQ22	The system shall have a work environment separate from a live environment.
REQ23	The system shall have a legal section and terms of use.
REQ24	The system shall have GCP VMs only accessible via console or SSL connection.

III. Sprint Schedule

A. Sprint 1 (9/6-9/13)

- Project requirements
- Project plan
- Tool chain, language, configuration management, server setup, development environment, IDE, frameworkYYY
- Sprint planning

B. Sprint 2 (9/15-9/27)

- GCP VMs running
- Create database
- Website design and structure
- User account creation, registration, profiles, email verification
- Develop user stories and Use cases
- UI/UX
- Layout plan on framework
- QA tests for user authentication system

C. Sprint 3 (9/28-10/13)

- GCP live environment go live
- Placeholder page uploaded
- DNS configuration for security platform
- Integration of security and analytics tools
- System security, data protection
- Class or Entity Relationship Diagram
- Website design
- Database tables

D. Sprint 4 (10/14-10/25)

- GCP SQL integration into Apache server
- Penetration testing and system hardening on public facing IPs
- Website design
- Database tables
- Mobile app design and structure
- Unit and System Testing, and test data selection

E. Sprint 5 (10/26-11/8)

- GCP script implementation for making updates in the work environment live in a more user friendly manner
- Connecting application and website to database
- Mobile app design and structure
- Secure a domain name and make the website reachable by itv

- Algorithms Design and Development

F. Sprint 6 (11/9-11/22)

- Mobile app design and security
- System fault testing
- Quality Assurance

G. Sprint 7 (11/23-12/6)

- Final adjustments to website
- Final adjustments to database
- System fault testing
- Quality Assurance

H. Sprint 8 (12/7-12/13)

- System deployment and finalization