CSC 536
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Project Proposal

THE UNIVERSITY
OF ARIZONA.

Computer Science

Robe Rental

- 3: Robe Rental
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1. Executive Summary

o Robe Rental is a garments rental subscription service intended to be a one stop shop for all garments needs. The basic idea behind the website is to provide a way to recycle the clothes that have been lightly used or never worn. The website will charge a commission from the seller and the buyer to generate revenue.

2. Customer Value

- The primary customers fall under two types:
    o Buyers who need a garment for one time use.
    o Sellers who will rent their clothes.

Unmet Customer Needs

- Customer needs:
    o A user/buyer wants to rent a garment for a low cost or for one-time use without paying full price for it.
    o A seller wants to rent or sell dresses they no longer want to use and make a business-out-of-it.

- Desired overall experience:
    o To provide various categories for the buyer to select a garment of their choice.
    o To build a flexible business model that will have fair pricing depending on the number of days of rent for both the buyer and seller.
    o To provide profiles for both the buyer and seller to do the rental activity.
    o To integrate a payment system for purchases.
    o To address following type of internet customers
        ▪ Product focused shoppers: Search bar or navigation that quickly shows the product customer is interested in buying.
        ▪ Browsers and Researchers: Show customized products based on users' browsing history and past searches.
        ▪ Bargain hunters: Give exclusive deals on products to this type of customers.
        ▪ One time shopper: Offer incentive to visit again by offering rewards based on-history.

- Unmet needs and user stories based on the unmet needs:

  o There are people who do not want to buy a dress for just one time use as they cannot afford to buy it, for example a wedding gown or prom dress. In such cases the person can rent the dress for a week for fraction of price of original dress .This will save the purchase cost for the buyer.
  o There are people who have too many designer clothes that they don't use, they can rent those clothes and generate revenue.

- Our SMART User Stories:

  o User Story 1 : As a buyer, I want to rent a designer garment so that I don't have to pay the full price for it.
  o User Story 2 : As a seller, I want to rent my high-end garments so that I can continuously generate revenue.
  o User Story 3 : As a buyer, I want to promptly return a garment after the rental period so that I can avoid paying a late fee.
  o User Story 4 : As a seller, I want to ship garments in a sealed package so that the user receives it in good condition.
  o User Story 5 : As a seller, I want to display the size and material of the garment so that the buyer can choose a garment based on the size and material.
  o User Story 6 : As a buyer/seller, I want to create a profile in the website so that I do not have to re-enter my information for payment every time I make a payment.
  o User Story 7 : As a user, I want to quickly learn about the website's rental policies so that I can comply accordingly.
  o User Story 8 : As a buyer, I want to sort garments based on a variety of criteria so that I am able to choose a garment that suits my needs.
  o User Story 9 : As a buyer, I want to add multiple garments to a shopping cart so that I can pay for them in one transaction.
  o User Story 10 : As a seller, I want to upload a picture of the garment along with all the specifications so that the buyer is able to find all the information in one place.
  o User Story 11 : As a buyer/seller, I want to login to my profile anytime so that I can update my personal details.
  o User Story 12 : As a buyer/seller, I want to get notified of tracking information so that I can track the status of a shipment anytime.
  o User Story 13 : As a seller, I want to display the price of a garment clearly so that the buyer can sort garments based on price.
  o User Story 14: As a buyer, I want to complete a transaction quickly so that I have more time to spend on other things.

3. Problem Definition

- Two major customer opportunities we found and plan to address are:
    - Excessive items in a wardrobe.
    - Budget constraints holding back garment purchase.
- Options for addressing these needs:
    - Website for connecting a potential garment buyer with a seller.
    - Mobile app to connect a buyer to a seller.

We chose to build a website first and then at a later point, make the website adaptive to screen size.

Proposed Benefit

- Easy renting, quality, authenticity verification and competitive pricing.
- The idea is new and it will be directed specifically for high end clothes that normally cost hundreds of dollars.

Measures of Success

- We are planning to release this website first to our close circle of friends and family members before releasing it to the public.

- We have observed the market trend and noticed that there is a lot of interest in spending lesser for branded and designer garments, especially when budget is tight.

- We intend to make customer feedback required for each garment transaction from the buyer's and seller's perspective, in order to make sure that the website is attaining its goal in the end. With feedback at every step of the way, we will find many more opportunities to improve the business as a whole.

- Our customer-centric measure for success is to get the best rating for each transaction that happens on our website. We will make sure that our customers are satisfied in all the aspects possible.

4. Technology

- AWS to deploy our website

- Front-End : HTML, CSS, JavaScript and Angular

- Back-End : NodeJS, SQL

- Testing : Manual Testing, Jasmine and Karma for unit testing

Proposed System

- Main components of our system:

    - A front end web page that will showcase all the different clothes available to rent.

    - A backend server and database that will store the profiles, history and the individual transactions from rents.

- High-level block diagram of the architecture:
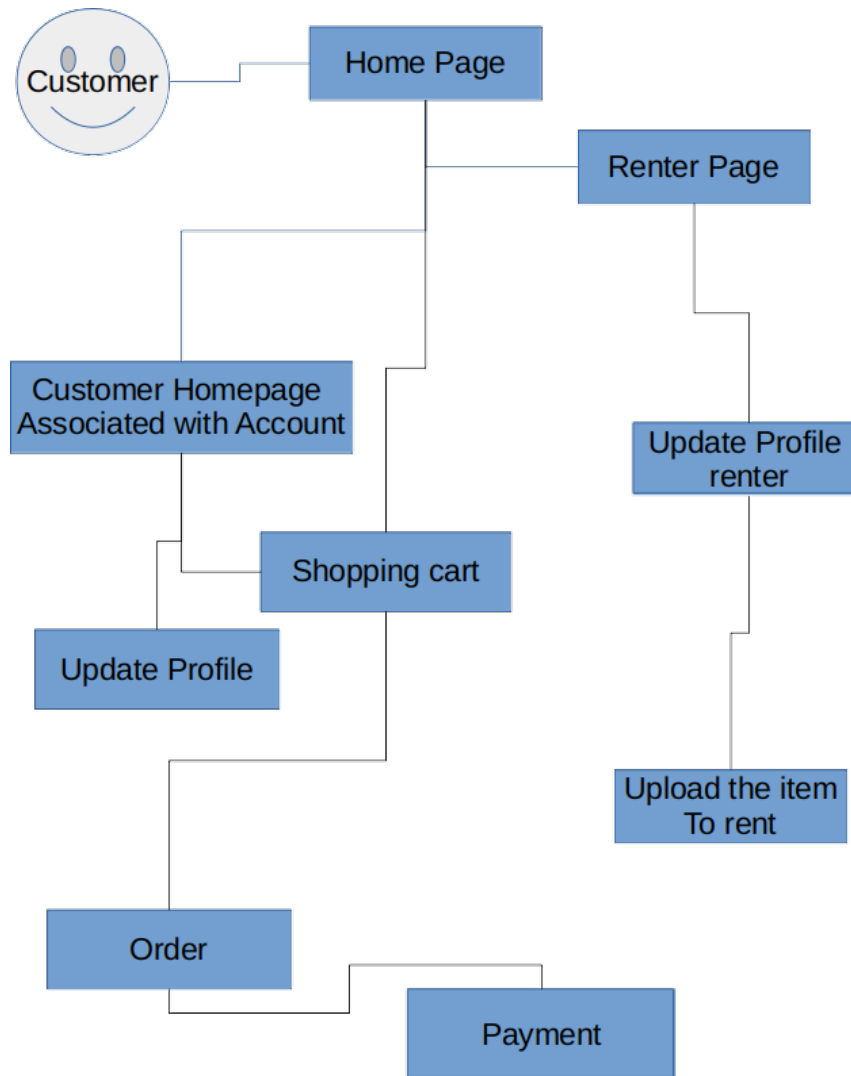
- A minimal system that would have some value to the customer:
  - A front end web page that displays garments.
  - A backend table to hold all the inventory details and another table to hold all the transactions.

- Additional features on our wish list:
  - Based on the user preferences, suggesting the garments most suited for them.
  - Integrating various payment systems like Apple Pay, Google Pay, PayPal etc.

Testing

- Testing our system:
  - The system will be tested mainly through the website and on 20 to 30 people to see if they can create their profile , post the clothes for rent and to rent the clothes.

- o We plan to unit test our code using Jasmine and Karma
- o We plan to perform manual testing and regression testing.
- Measuring the effectiveness of our test strategy:
    - o As we plan to unit test our code we would be eliminating the bugs introduced through new code.
    - o We will perform rigorous manual testing as per the test cases written to check how many bugs are found in the application.
    - o We will maintain a log of all the bugs found and whenever a fix is released we will make sure the test cases along with these bugs are fixed and no new bugs are introduced as a result. We plan to perform extensive regression testing.

Tools and External Technology

- Platforms and tools:
    - o AWS, HTML, CSS, Angular, JavaScript, NodeJS
- External components or services:
    - o We will likely need people to see if the rental garments qualify for renting and identify cases of fraud. We will be using message services to confirm the user authentication through one time password sent to their mobile phones. We might use a payment system for payments.

5. **Team**

Backgrounds

- Backgrounds of the team members:
    - o Prathyusha Butti - Bachelors in Information Technology from Sreenidhi Institute of Science and Technology, India. Worked as a Specialist at Verizon before joining Master's in Computer Science at University of Arizona. Work Experience of 5.5 years in the software development.

    - o Priyamvadha Gopalakrishnan - Bachelors in Computer Science from Anna University, India and Masters in Business Administration from Madurai Kamraj University, India. Worked as a Techno-Functional Consultant in Tata Consultancy Services for 4 years in Minneapolis before moving to Tucson. Currently works for University of Arizona as a Principal Enterprise Business Analyst in UITS for the past 7 years. Full time Graduate student in the University of Arizona from Fall 2018.

    - o Ripan Chowdhury- Graduated from Kalyani Government Engineering College in 2017. Worked for 6 months in Carpathy Private Limited as a back-end developer. Currently pursuing Masters in Computer Science.

    - o Royan Tuscano - Masters student in Electrical and Computer Engineering. Worked in Printed Energy for 4 months during summer as an Intern. I will graduate in May 2019.

Skills

- ○ The team has decent experience in building an application like this before through their prior work experience.
- ○ AWS, Node, Angular 5, Jasmine and Karma are entirely new to the team. The team is familiar with HTML, JavaScript to an extent.

Roles

- Roles of the team members in this project:
  - ○ Prathyusha : Front-End Developer and Product Owner
  - ○ Priyamvadha : Testing and Scrum Master
  - ○ Ripan : Back-End Developer
  - ○ Royan : Back-End Developer

6. Risks

Constraints

- Social, ethical, policy, or legal constraints:
  - ○ Saving customer payment information has legal constraints due to potential hackers.
  - ○ Website bound by social constraints in countries that do not allow women to wear modern clothes.
  - ○ Protecting buyer information from the seller and vice versa are policy constraints.

Resources

- We are planning to use Github for our code repository and Amazon Cloud Services to deploy our website. We would like to utilize a free AWS database, if it is available.
- Since most our team is new to AWS, we currently are trying to gather information on tools needed to deploy in AWS and how to use cloud services in general.

7. Project Management

Process

- Planned development process:
  - ○ We plan to implement agile process and we will have daily scrum meetings over google hangouts.
  - ○ We plan to maintain our scrum dashboard using any of the free scrum tools available like scrumDo or scrumDesk.
  - ○ We are maintaining our repository in GitHub.
  - ○ We plan to deploy our builds continuously using AWS.

Schedule

- ○ First Iteration (3/13) : How the rental subscription works page, display the garments along with specifications and price, with a basic user module and AWS Environmental Set-up.

- o Second Iteration (4/01) : Login Module, Create a profile for the user, categorize the garments along with respective images, Upload the image of the garment and it's specifications,
- o Final Iteration (4/22) : Payment module.

Team Meetings

- o We plan to meet daily from Monday to Thursday over google hangouts for Daily Scrum.
- o We will maintain a scrum dashboard to keep a track of our efforts.
- o We will also have huddles on Monday and Wednesday afternoons after class ends.

- We hope to accomplish the following during our meetings:
  - o We plan to inform the scrum master
    - What have we done yesterday?
    - What do we plan to accomplish today?
    - We will list out any impediments.