V-Closet Project Proposal

**1. Project name**

V-Closet

**2. Team member names**

Scott Lam, Leo Ras, Thomas Simmons

**3. Abstract**

As technology expands with no signs of decline, we need to revolutionize something innovative in the market. People often struggle to find the perfect outfit they want to wear or ideas. Conceivably, they want to look for new styles to customize themselves but do not want to spend the money to try it. We developed the perfect solution by creating an online virtual wardrobe called V-Closet. V-Closet aims to solve these issues by allowing users to upload clothes to a virtual wardrobe, receive recommendations on what to wear based on the weather, and trade and sell articles of clothing with other users.

Users will be able to create an account and upload pictures of their clothing items and categorize them. Any clothing items may include pants, shirts, hats, and other accessories. The website will receive up-to-date weather information and provide recommendations based on it. The website will be able to prepare users for rain, cold and hot weather, and other climate events. Finally, users will be able to use the website as a marketplace as V-Closet will have buying, selling, and trading capabilities.

**4. Description**

A common problem among working professionals is that establishing a wardrobe that is stylish, unique, and inexpensive can become extremely frustrating. Clothing acquired for specific wear cases often loses its value as styles quickly shift over a short period of time or clothes that no longer fit. On the other hand, people that acquire clothes without a specific look in mind or have vague styling may have to spend more time putting together outfit combinations that both look great and feel comfortable. This may make people find themselves wearing the same outfit over and over which may leave other clothes neglected, forgotten, and worn out from continuous wear.

There is also the problem of having an unmanageable wardrobe due to having too many clothes. A common consequence of this is that certain clothes become neglected and unnecessarily take up valuable space. Ultimately, excess clothes end up deteriorating and being disposed of, which further adds to fashion waste. Additionally, a fashion-oriented social media platform has yet to exist. And so, the opportunity to share one’s fashion ideas and receive inspiration for new outfits is often buried among a cacophony of generic content on social media platforms such as Instagram, Facebook, and YouTube.

These common problems of inconsistent styling, ensuring maximum reuse, and frugal, practical fashion while making the fashion experience less frustrating for the modern generation can be solved by leveraging web technologies to create a social closet organization application. A virtual closet that will keep track of your clothes, give recommendations based on certain criteria and provide a marketplace to buy, sell, or trade clothes between users. Other benefits can also include: the maximum availability of one’s personal wardrobe makes it easier to decide what to buy when shopping for clothes. Another is the ability to automatically plan outfits in advance, saving time, energy, and stress. The application can also provide social features such as sharing outfits with other users to inspire and discover new styles and trends.

We want to design this application to allow users to virtualize their wardrobes by uploading photos of their clothes to their personal accounts. Users will provide specific descriptions about their clothes that the application will then use to create catalogs and provide recommendations based on weather data, event type, or mood. The outfit recommendation will be displayed to the user at user login along with the current weather forecast. Users can then approve the recommendation, at which point, the ensemble goes into their history. Each piece of clothing gains a “wear point” if it is approved, which can be aggregated during specific time intervals to determine which clothes are getting the maximum and minimum use. Users will also be able to update their wardrobes by adding or deleting items, sorting their clothes by category, and displaying their recommendation history.

Other features we want to implement are an event calendar for planning outfits in advance, a marketplace for users to buy, sell, or trade clothes on their accounts, profile visits to view other users' accounts, and user messaging.

**5. Feature list**

* A list of features that will be completed by the end-of-semester
  + Create new account
  + User authentication
  + Upload clothes into user account
  + Delete clothes from user account
  + Sort clothes based on different categories
  + Retrieve and display weather information
  + Display outfit recommendation/s
* A list of feature that will be completed if there is time
  + Event calendar
  + View other user accounts
  + Marketplace
  + User messaging
  + Each user has their own limited storage space
* A list of features you would like to implement but cannot be completed this semester
  + 3D Model Avatar
  + Rendering clothes

**6. Technology**

Firefox

* Firefox is a free and open-source web browser developed by the Mozilla Foundation. Firefox will be our browser of choice for this project. We will center our design around this browser, and will not optimize the website for other browsers.

Windows Operating Systems

* Windows is a group of operating systems developed by Microsoft. For this project, we will be developing on the Windows 10 and 11 operating systems.

Visual Studio Code

* Visual Studio(VS) Code is an Integrated Development Environment(IDE). It is an open-source editor for code. For the scope of this project, we will be writing all code with VS Code.

HTML/CSS/JS

* HyperText Markup Language(HTML), Cascading Style Sheets(CSS), and JavaScript(JS) are languages used for the display and behavior of web pages. HTML describes the structure, CSS describes the style, JS describes the behavior. These languages work together to create documents to be displayed in a web browser. We will use these three languages to create the look and feel of the V-Closet Website.

PHP/GO

* PHP: HyperText Preprocessor(PHP) is a scripting language primarily used for server-side programming. We will use this language to establish connections to our server and send and receive SQL code to our database.
* GO is a programming language designed by Google. It can be used in many applications, but will be used primarily by us as a server-side scripting language to establish connections to our server and send and receive SQL code to our database.

SQL

* Structured Query Language(SQL) is a programming language that is used for managing, sending, and receiving information on a database. We will use SQL to manage data related to users, clothing, and any other data we will need to keep track of.

GitHub and Git

* GitHub is an Internet hosting service for software development and version control. GitHub uses the version control system Git. GitHub will be used to manage and track the development of V-Closet.

weather.gov API

* (See Data Sources)

React

* React is a free and open-source front-end JS library developed by Meta that is used for building user-interfaces(UI). We will use React to develop the UI of the V-closet website.

Firebase

* (See Server Information)

Discord, Google Drive

* Discord is Voice over Internet Protocol and social media platform. We will use discord to send messages and call each other.
* Google Drive is a file storage service developed by Google. This is where our reports for this project will be written and stored.

**7. Server information**

The website will require a server component to support our design and ideas. We came to the conclusion to use Firebase. Firebase is a cloud service that is provided by Google that offers a variety of features such as cloud storage, real-time database, authentication, and hosting which is the perfect candidate for our requirements. All features may not be used but would prove to be beneficial for us.

**8. Data sources**

The website will exclusively rely on the National Website Service (NWS) API as a source of data for weather-related information. The NWS API is a service provided by the United States government and generates data from tools and computer models with the aim of providing forecasts and predictions. This is known to be very accurate, so we will use this API for this project.

**9. Team members’ backgrounds**

For our idea to come to fruition, the three of us will be working on separate parts of the project as well as working closely with one another. Leo has little to no familiarity with all web development technologies. Scott has a fair amount of knowledge of front-end development, but little knowledge of back-end development. He has taken classes including Client-Side Web Development, User Experience Design, and Principles of Database Management. Thomas has a broad understanding of front-end and back-end development. He has taken classes including Intro to Web Development, Advanced Web Development, and Principles of Database Management.

With the level of knowledge each of us has, we have split the work that will maximize our strengths. Scott would work on the front-end development, UI, and design. He will focus on creating the visuals and user-friendly parts of the website. Thomas would work on the back-end development and Weather API. He will focus on the database and integrating the API. Leo would be responsible for implementing the features of the website and making sure that they are functional and well-integrated into the website.

**10. Dependencies, limitations, and risks**

There are several dependencies, limitations, and risks that are carried out in this project. The Internet is required to access the website since it will be online for anyone to access. There is no solution to this. Security and secure logins are a must so making passwords meeting the requirements, two-factor authentication, or hashing passwords can help solve this issue. Availability is also another big thing since the website is bound to be down at some point. To relieve the likelihood of this, avoiding overloading the server wherever possible, limiting spam bots, or preventing unnecessary requests may help. Cloud storage capacity being full is also another possibility with users being able to upload their images to the cloud. To prevent this, storage size is limited to users.

For users and developers, the website being overloaded can be a big issue. Reducing image quality can help alleviate some of this since the website will contain a lot of images. Another thing is the lack of developer knowledge and time. The developers (us) will need to research the time and learn new tools to develop this website. Scheduling times and days to work on the website is a must to complete it by the deadline.

**11.Timeline**

| **Week** | **Date** | |
| --- | --- | --- |
| **1** | **23 Jan - 27 Jan** | |
| **Scott: Research React and related front-end tools**  **Leo: Research and contribute to web ideas**  **Thomas: Research Firebase** | | |
| **2** | **30 Jan - 3 Feb** | |
| **Scott: Research and think of web design ideas**  **Leo: Research and contribute to web ideas**  **Thomas: Research Firebase/Start setting up Firebase Server** | | |
| **3** | **6 Feb - 10 Feb** | |
| **Scott: Sketch/early development of website design**  **Leo: Finalize features**  **Thomas: Finish Firebase Server setup** | | |
| **4** | **13 Feb - 17 Feb** | |
| **Scott: Research resolution size for website**  **Leo: Contribute to design decisions**  **Thomas: Research Database solutions** | | |
| **5** | **20 Feb - 24 Feb** | |
| **Scott: Begin website design and UI**  **Leo: Begin development**  **Thomas: Develop Database Solutions** | | |
| **6** | **27 Feb - 3 Mar** | |
| **Scott: Develop website design and UI**  **Leo: App development**  **Thomas: Develop Database Solutions** | | |
| **7** | **6 Mar - 10 Mar** | |
| **Scott: Finalize website design and UI**  **Leo: App development**  **Thomas: Research Weather API** | | |
| **8** | **13 Mar - 17 Mar** | |
| **Scott: Begin website design for other pages and UI**  **Leo: App development**  **Thomas: Incorporate Weather API into project** | | |
| **9** | **20 Mar - 24 Mar** | |
| **Scott: Web design and UI/ assist Thomas**  **Leo: App development**  **Thomas: Smooth Front-end and Back-end connections** | | |
| **10** | **27 Mar - 31 Mar** | |
| **Scott: Web design and UI**  **Leo: App development**  **Thomas: User Account security development** | | |
| **11** | **3 Apr - 7 Apr** | |
| **Scott: Web design and UI/ testing with Thomas**  **Leo: App development**  **Thomas: User Account security testing** | | |
| **12** | **10 Apr - 14 Apr** | |
| **Scott: User testing**  **Leo: Application testing**  **Thomas: Server testing** | | |
| **13** | **17 Apr - 21 Apr** | |
| **Scott: Finalizing touches and fix flaws of design**  **Leo: Application testing**  **Thomas: Database testing** | | |
| **14** | **24 Apr - 28 Apr** | |
| **Scott: Documentation**  **Leo: Documentation**  **Thomas: Documentation** | | |
| **15** | **1 May - 4 May** | |
| **All: Finalize, review, document, and present the project** | | |