SOEN342
Software Requirements and Specifications

Cupid's Corner
(Phase 2)

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Vision Document
Cupid's Corner

1. Introduction

This vision document outlines the purpose and goals of Cupid's Corner, an online dating application developed by our team. The purpose of this project is to provide a seamless and effective dating experience for mobile users, with a focus on video chatting as the main mode of communication. Our software solution aims to foster a trustworthy bond between users by allowing them to express themselves fully through detailed profiles and encouraging them to focus on shared values and interests rather than physical appearances. The app features a matchmaking algorithm that selects profiles based on previous likes and interests, as well as customizable user settings for refined profile showings. The ultimate goal is to create a platform that helps users find compatible matches and build meaningful relationships.

2. Positioning

2.1. Problem Statement

The problem of	Singles have a hard time finding love on dating apps and are often disappointed by the people they match with. The connection made is often short lived or simply incompatible due to flaws and missing features on current existing apps.
Affects	All those who are looking for a relationship
The impact of which is	Singles on dating apps struggle finding meaningful and long lasting relationships and remain without a significant other. This greatly impacts people who are looking to form genuine connections and build a family in the future.
A successful solution would be	A user friendly mobile application that promotes strong interpersonal connections between two people with the classic swipe feature. To improve upon similar apps that are already on the market, users can only see the profile

	description and interests of the other party; the profile pictures are not shown. Additionally, in order to avoid disappointing dates and catfishes, both parties are encouraged to video call before meeting in person.

2.2. Product Position Statement

For	Singles
Who	Want to find meaningful romantic relationships
Cupid's Corner	Is a mobile application
That	Helps singles find true love through a matchmaking system based mainly on common interests and emotional bonding
Unlike	Current applications on the market that focus mainly on initial physical attraction that tends to fizzle out shortly. The connections made are often shallow and lacking in sincerity. These apps tend to make it a numbers game instead of promoting real connections.
Our product	Targets those who are looking for a serious relationship and a genuine emotional connection before a physical one. Profile pictures are not shown before matching; matching is instead based on interests and profile description because we truly believe that sharing common values is key to successful relationships. Our matchmaking system also encourages matched users to use our video chat feature before the first date to avoid falling victim to catfishing.

3. Stakeholder Descriptions

3.1. Stakeholder Summary

Name	Description	Responsibilities
Project team (Internal)	The group of individuals responsible for the performing the work that goes into the development of the system	• Responsible for eliciting, evaluating, specifying and validating the system requirements • Responsible for proposing the system & its benefits • Responsible for creating a mockup of the system
Owner (Internal)	The company that owns the system	Making sure the all the project activities are done the right way and the end product is implemented correctly
Investors	People who are funding the project	Checking to see that the project is on track. Providing sufficient funds to the project to ensure all the resources required by the project team are available

3.2. User Summary

Name	Description	Responsibilities	Stakeholder
End user	With respect to the system, they represent the people trying to find a partner	None	The owner is responsible for the interests of the end user because the success of the project completely depends on how much the end user is satisfied with the system

3.3. User Environment

The task of using the dating app to find potential partners only involves one person, the end user. There are other people indirectly involved in the process, such as the developers and the support staff who provide customer service.

The task cycle can vary widely among users. This depends on the user's personality and goal while using the app. Some users may spend a lot of time getting to know their potential partner by messaging and video chatting while others may take much less time.

The time spent in each activity can also vary widely. Some users may spend more time video chatting while others may spend more time text messaging

The app is primarily designed for mobile users but a desktop app could also be implemented. With the focus of the app being mainly video chatting, a quiet environment with good internet connectivity is preferred to have the best experience possible.

The app will need to be compatible with IOS and Android devices that have been released in at least the last 5 years. This means that multiple screen sizes and resolutions will need to be supported.

Every year new devices are released. So the app will need to be maintained to ensure compatibility with these new devices and platforms.

Other applications that might be in use in conjunction with the dating app are social media and messaging apps like Facebook, Snapchat and Instagram. It could be beneficial to be able to link your socials to the dating app but it shouldn't be the main focus of the app.

3.4 Key Stakeholder or User Needs

Need	Priority	Concerns	Current Solution	Proposed Solutions
Obtain high quality matches	High	Conventional dating apps rely on algorithms that don't take into account users' preferences and personalities.	Users need to manually swipe and look at every profile description.	A personalized matchmaking feature would allow users to filter matches with which they are most likely to have a meaningful relationship with.

Prevent catfishing and fake profiles	Moderate	Popular dating apps are filled with fake profiles which can be frustrating for the end user to interact with.	Third-party authentication is used to verify identity.	Facial recognition or more robust identity verification should be used. For example, scanning of government issued IDs.
Protection of privacy	High	Some users of dating apps can be exposed to unwanted attention from other users of the app.	Certain apps give the user the ability to block or report other profiles. But this is not always 100% effective.	To improve the effectiveness of blocking users. An IP address or device blocking system could be implemented to avoid the scenario of someone simply creating a new account.
Meaningful interactions	Moderate	Dating apps often promote shallow interactions that can become boring or stale very quickly.	Competing apps address this by adding events or games to make the experience more fun.	We believe that a better approach would be to encourage the use of our video chatting feature to promote more meaningful interactions.

4. Product Overview

4.1. Product Perspective

Cupid's Corner is an independent and self-contained online dating application that operates on mobile devices. It does not rely on any other software or system to function. However, it interacts with other external systems like GPS location, video chat platforms, and messaging services to provide users with a seamless and effective dating experience.

1. **GPS Location:** The Cupid's Corner app relies on the device's GPS sensor to determine the user's location. This information is used to provide location-based recommendations of potential matches.
2. **Video Chatting:** Cupid's Corner allows users to communicate with each other via video calls. The app integrates with a third-party video chat platform that provides this functionality. When two users match, the app initiates a video call using the integrated video chat platform.
3. **Messaging services:** The app also provides a messaging feature that allows users to communicate via text messages. The app integrates with a third-party messaging service that provides this functionality. Users can communicate with each other via text messages after they have matched and started chatting.

These components are crucial to the app's functionality, and any changes or disruptions in their availability may affect the app's usability and reliability.

4.2. Assumptions and Dependencies

Assumptions	Dependencies
Users will continue to use mobile devices to access dating apps.	Matchmaking features depend on accurate GPS location.
Users will have access to stable internet connectivity.	Video chat features depend on third-party platform availability and compatibility.
Users' GPS location will be accurate and up-to-date.	Messaging features depend on messaging platform availability and compatibility.
Third-party video chat and messaging platforms will remain available and compatible.	App functionality depends on stable internet connectivity.
Users will have basic mobile app navigation skills.	App design may change based on third-party service changes.

5. Product Features

5.1. Core Features

There are several core features implemented in our product that heighten the user experience for easier usage as well as positive outcome. Users should be able to create a detailed profile including their interests, hobbies, and other relevant information that would help in finding a compatible match. For this purpose, the user creation feature was created in order to allow users to express themselves to the fullest.

The swipe feature on our app allows the users to browse through profiles and indicate their interest in another user by swiping right or left. A swipe to the left indicates disinterest, while a swipe to the right indicates an interest in the viewing profile. This will notify the swipe-ee of the user's interest in their profile. From there, the liked user can view the user's profile and decide if they will accept the match or reject it.

Our app wants to avoid first impressions based on looks, which is why one of the main features was the removal of the profile picture until after both parties have shown an interest in each other. This feature encourages users to focus on shared values and interests rather than physical appearances.

Our product aims to foster a trustworthy bond between users, which is why we've implemented the video chat feature. Although not mandatory, matched users are strongly encouraged to video chat before meeting up in order to avoid catfishing and disappointing dates.

Of course, users will not be viewing random profiles on their app. Our Matchmaking Algorithm will select profiles to show to a user based on previous likes as well as their interests. Key words from their self-written descriptions will be compared to other users' descriptions to find other compatible users. This way, the user is much more likely to find someone with similar overall mindsets. For example, if a user has written a joke in their description, the algorithm can find another user with a similarly humor-inclined description, and will show the user their profile.

Our product will also feature a feedback system, which will allow users to provide feedback on their matches and the app itself, which can be used to improve the matching algorithm and user experience. The data collected from the feedback system will largely help us implement new features or bring changes to current features.

The app will allow users to customize their settings such as the age range, distance range and preferred gender. The user settings feature is meant to provide the user with more freedom and refined selection of profile showings which they would be more interested in. Other options in the user settings will include sexual orientation and other preferences such as religion and ethnicity.

5.2. Other Product Requirements

The app will be designed to run on iOS and Android, to reach a wider audience of users. The devices should be up to date to the most recent operating system on both platforms. Users who would like to benefit from the application must be using the app within range of other users, but they also have the freedom of changing their location preferences if they are planning on traveling or moving abroad.

In terms of performance, the app should be able to load profiles within 3 seconds on a 4G network. 5G networks are expected to load faster, and conversely 3G networks may load at a slower rate. For best feedback, a device with a 5G network is recommended. The app should also be able to handle up to 5000 active users at once without significant slowdowns. This way, the user will have a seamless experience while chatting or swiping.

In terms of robustness, the app should have a crash rate of less than 1%. It is important to avoid crashes as much as possible to avoid users from losing the profile they were viewing before swiping. It should be able to handle unexpected server downtime of up to 10 minutes without losing any user data such as their profile updates, messages and matches.

In terms of fault tolerance, the app should be able to recover from server errors within 60 seconds. Keeping the app up and running on the server as soon as possible can prevent users from experiencing delays in receiving or sending messages, or loading other users' profiles. In the event of a system failure, we expect the app to be able to recover at least 80% of user data, such as profile information, messages and matches.

The app's usability is an important quality as it will allow a sense of welcoming to users, so as to not feel overwhelmed by lagging, match losses and basic UI. While using the app, the user should be able to swipe once and the app should respond immediately. Going through different pages of the app will appear smooth and comfortable without lagging. Another important point is the user messaging service, where the user can view the other profile's online status as well as if they are typing in real time.

Security is a very important feature in our product. Every user's data will be encrypted to avoid hacking or misuse of their personal information. None of their information will be visible to other users or to our team members. Users will also be locked out of their accounts after 5 or 10 failed attempts, this option will be given to users at sign up. This will prevent account hacking and personal information theft.

The app is expected to have a clean and intuitive interface that is easy to use for all age groups. It will be consistent across all platforms and devices to accommodate an acquainted environment and prevent confusion. Certain external constraints that our product will follow are

the relevant laws and regulations in place regarding user data. As mentioned above, privacy will be a very important feature for our product. We also plan to have it work seamlessly with other social media apps such as Facebook and Instagram, if users choose to share their socials on their profile. They can also like their spotify account to showcase their playlists, favorite artists or songs.

Once the app is installed on the user's device, the app will prompt the user to go through a step by step tutorial of all the in app features. The steps presented will be in clear and concise language that will be easy for users to understand. It is also important to note that users will have the option of choosing one of 10 languages for the app to display. Users will also have access to online help which can assist users in case they have any questions or encounter any issues. The installation process will be very simple. All the user would need to do is open either the App Store or the Google Store, look up the app and click the download button. The app will appear on their home screen and can be easily accessible from there. The app will display our logo clearly so the user can easily find it on their home screen.

Our highesting priority in terms of product requirements is the stability of the application. It is important that the app is stable and reliable to ensure a positive user experience. Frequent crashes or glitches could lead to user frustration and abandonment of the app. It is important to avoid this at all costs. The benefits provided to users by our app is also of high priority. Our product provides a clear benefit to users that sets it apart from competitors, as it focuses on emphasizing genuine emotional connection and compatibility over physical appearance. Effort is of medium priority, as it should be designed and developed with efficiency and usability in mind. However, this should not come at the expense of stability or benefit to the user. While all products carry some degree of risk, it is not as crucial a priority as stability or benefit. This is why risk is of low priority for our product. Risks that may need to be addressed include data privacy and security concerns, but these should be addressed as part of the app's design and development process.

6. Risk and Feasibility

6.1 Feasibility Analysis

- Technical Feasibility:
    - Dating applications for mobile and web are a common product with common features across different dating services.
    - All of the technologies we plan to implement in our system currently exist in some form or another, whether in a dating application or elsewhere. This means that it will not take extensive amounts of time to create and design new technologies.

    - As students in Software Engineering with knowledge of web and mobile design, we also understand how to create these features already, or understand how to learn to implement these features with research.
    - As such, the project is determined to be technically feasible.

- Organizational Feasibility:
    - As a small group of only six students, delegation of tasks should be quite feasible.
    - We will delegate one feature to each team member to begin with.
    - The team as a whole will contribute to the design of the User Interface.
    - Frequent meetings will be easy to schedule with the small team size.
    - Progress updates and code pushes will be stored in a Github repository.
    - Stakeholders will be kept in contact with semi frequent meetings and updates and the end of sprints.

- Financial Feasibility:
    - Since the features we plan to implement already exist, the project should not take a long time, perhaps a few months with proper planning and scheduling.
    - A short Time To Deployment, simple feature list, and small team size means the initial budget will be reasonably small.
    - The plan is to present the idea to investors to generate some form of investment capital that meets or exceeds our estimated budget.
    - We believe since the project is technically feasible within an ideally short time frame, and has the potential to revolutionize the target market, that the project is financially feasible and likely to be invested in.
    - Further revenue to pay costs of running servers, maintenance, and return to investors and other stakeholders will be generated by advertising or memberships.

6.2 Risk Analysis

Risk	**Risk Level L/M/H**	**Likelihood of Event**	**Mitigation Strategy**

DOMAIN RISK			
User information not secure.	**H**	Somewhat Likely	Plan to implement extensive database security systems.
Inability to communicate with matches.	**H**	Unlikely	Test feature often before and during deployment of the application.
Wrong display of profile.	**M**	Somewhat Likely	Test feature often before and during deployment of the application.
User information/profile not properly stored in db.	**H**	Unlikely	Ensure database is properly implemented as simply and securely as possible before deployment, test often.
Graphical glitches on webpage or mobile application UI	**L**	Likely	Perform frequent testing, assign employees to bug fixing after deployment to manage bug reports from users.

PROCESS RISK			
Hard deadlines are not met.	**M**	Somewhat Likely	Create an extensive schedule ahead of time, conduct many meetings to stay up to date with all employees and their tasks.
The project goes over budget.	**H**	Likely	Ensure tasks are completed properly the first time, ensure requirements are properly defined.
Personnel are inexperienced.	**M**	Somewhat Likely	Hire an outside specialist, teach employees what they need to know.
Requirements are poorly defined.	**H**	Somewhat Likely	Perform proper and extensive requirements elicitation.
Expectations of stakeholders not met.	**M**	Somewhat Likely	Conduct extensive meetings with stakeholders.
Scope Creep	**L**	Likely	Ensure proper and detailed definition of

			project in the project plan.
Gold Plating	**L**	Likely	Ensure employees understand the requirements, keep tasks as simple as possible.

7. Use Case Diagram