Software Engineering Project Report

Gather (A Family App)

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Project Description

1 Project Overview

The product is a collaboration application which can be customized for each community/ group. It will help people to connect with each other even when they are miles apart. The users of this application can be in various groups such as family groups, office groups and friend circles. Career oriented children can use this application to get inspired for cooking homemade recipes during occasions. Also, this application will provide a way to connect with each other in an affectionate way by providing an inbuilt shopping platform to send gifts/essentials to your loved ones on occasions such as birthdays, anniversaries or festivals.

By means of family collaboration, this application will enable users to have virtual get-togethers such as virtual dinner and tea-parties, collaborative games and virtual shopping/ meetings hours for the group. This application will also keep track of all the important dates for all the members of the group providing a better foundation for the relationships.

2 The Purpose of the Project

2a The User Business or Background of the Project Effort

Staying in touch with family and friends is hard in this fast pacing world where people often forget to connect with their family members. Staying connected to one's family is important and helps keep one motivated in times of distress. Current applications such as Whatsapp, messenger and zoom only provide basic texting and video calling. They can be replaced with a better tool. Gather provides a single platform for families to unite with one another. Gather will combine features that these applications provide with more modern features such as integrating calendar to remind people of birthdays, anniversaries and other important occasions of their loved ones, organize virtual get-togethers and play multiplayer games . The application also has an integration of online shopping platforms to send gifts/essentials to their family members on just a single click. Gather will help people connect with their loved ones which will provide better and stronger relationships.

2b Goals of the Project

We want to help people connect with their families in this rapidly growing world where family members live and work around the world by providing them with a single platform to connect with their loved ones and establish and maintain better relationships.

2c Measurement

The first step to measure the success of the product will be to track the number of app downloads. We would check the number of new users a particular user brings to the application. After that we would track the number of times the application is used in a week. This will allow us to know whether the users are liking the app or not and how fast the app is growing. Customer satisfaction surveys will be taken into account to measure the success of the application.

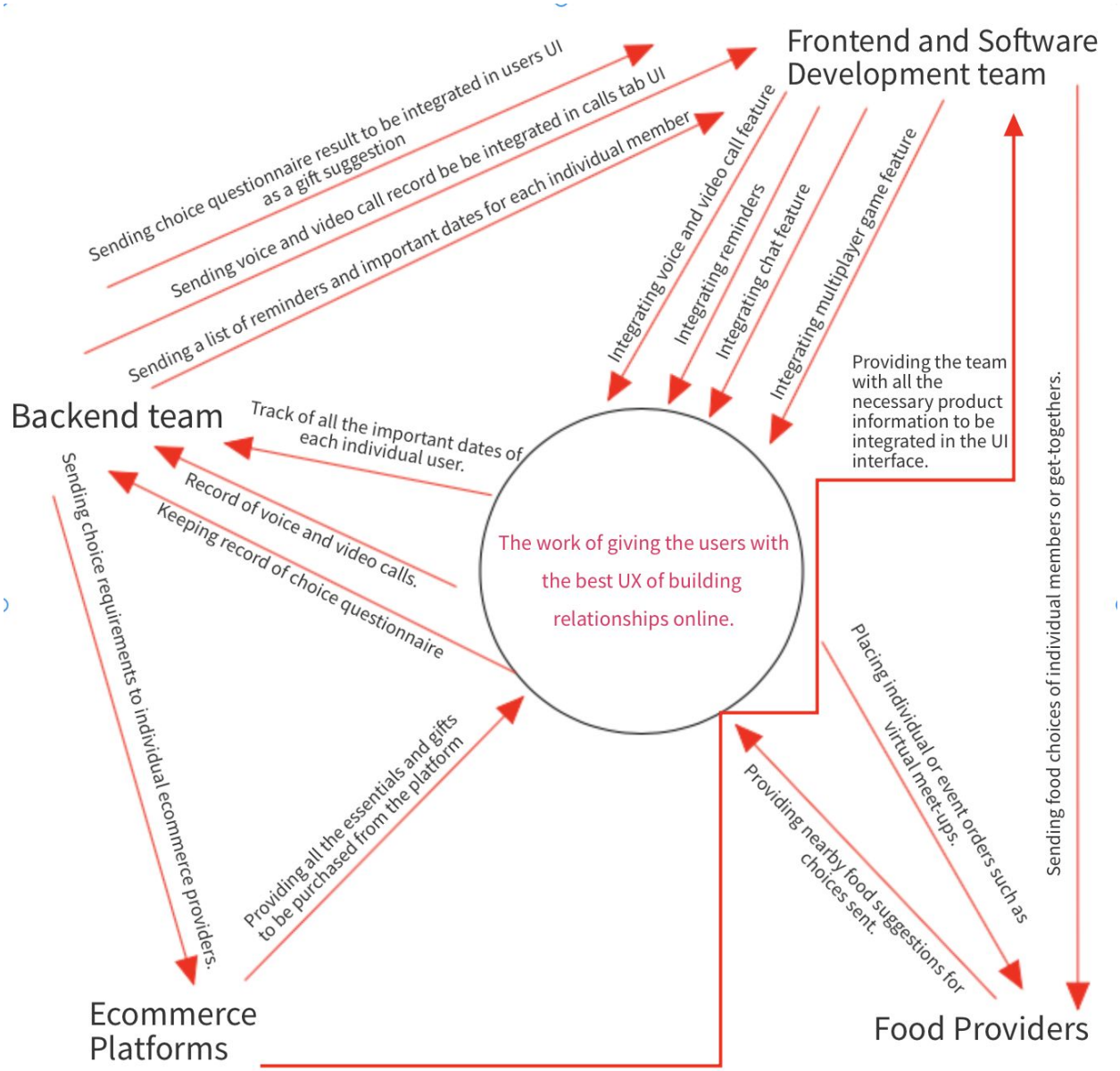
3 The Scope of the Work

The goal of the work that will be addressed in this product is to provide people with ways to build relationships online and having the same interactions and exposures which they experience during in-person communication and meet-ups.

3a The Current Situation

There are applications in the market that provide the mentioned services separately. Also, the already existing applications make it hard to keep track of everything within a community. Therefore, this application will provide means of communication in a systemized way. There will no longer be manual data charts and calendars in use as this product will manage all the user birthdays from the very moment they create their accounts. Although there will always be a room to add more important dates and virtual meetings or get-together reminders. Unlike other products in the market, this application will make it easier for people to know their family member choices in order to value their communication more effectively.

3b The Context of the Work


Frontend and Software Development team
Sending choice questionnaire result to be integrated in users UI as a gift suggestion
Sending voice and video call record be be integrated in calls tab UI
Sending a list of reminders and important dates for each individual member
Integrating voice and video call feature
Integrating reminders
Integrating chat feature
Integrating multiplayer game feature
Providing the team with all the necessary product information to be integrated in the UI interface.
Sending food choices of individual members or get-togethers.
Backend team
Track of all the important dates of each individual user.
Record of voice and video calls.
Keeping record of choice questionnaire
Sending choice requirements to individual ecommerce providers.
The work of giving the users with the best UX of building relationships online.
Placing individual or event orders such as virtual meet-ups.
Providing nearby food suggestions for choices sent.
Providing all the essentials and gifts to be purchased from the platform
Ecommerce Platforms
Food Providers

3c Work Partitioning

Event name	Input and Output	Summary
Database management team keeps track of all the choices made in a questionnaire.	Individual users giving answers to choice questions in the questionnaire.	Record the choices made by each person in a group in order to use it to give gift suggestions to other members in the group.
Development team linking the choice questionnaire to the UI interface of individual users of the group.	Linking the UI Interface to the products from a particular ecommerce provider.	Determining the choice questionnaire and linking it in the best possible way to enhance gift sales on the ecommerce platform.
Development team keeps track of all the suggestion	Number of users giving similar kinds of suggestions.	Record the number of users having difficulty with the same problem and analyze their suggestions.
Development teams analyzing user suggestions to resolve the difficulty by integrating the feature in the product	Integrating analyzed suggestions.	Record the user suggestions, analyze them and integrate them in the feature.
Database management team keeping track of all the important dates.	tracking the important dates (in). Sending reminders to different users according to their personalized reminder chart.(out)	Determining all the important dates whether it be pr-recorder or manual ones. Recording all the get-togethers and other events. Sending reminders to all the participants of the group.
Development team integrating all the required ecommerce providers.	Analyzing the needs of the users(in). Updating the product by collaborating with the popular ecommerce providers.(out)	Determining the needs of the users. Collaborating with Amazon, Uber, doordash, etc., to provide the best user experience on building relationships online.

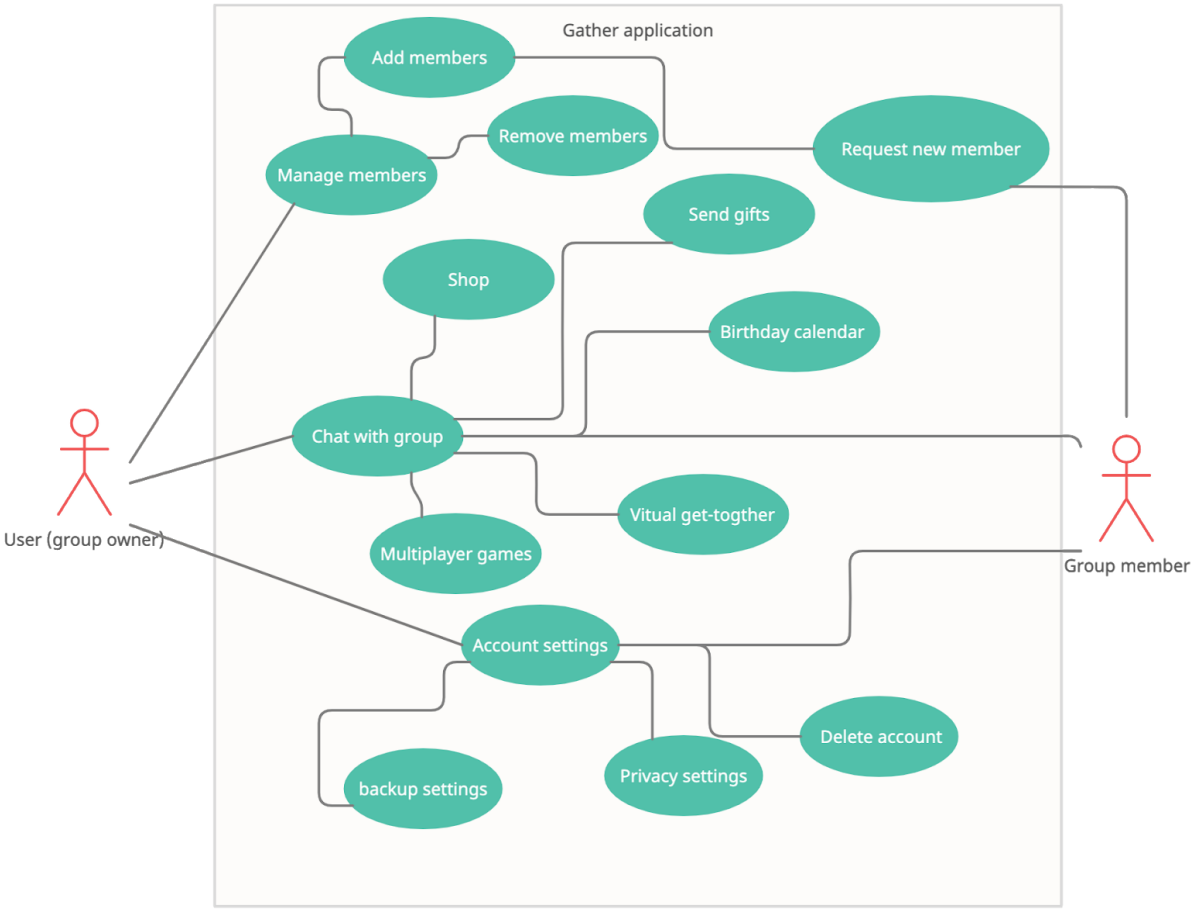
3d Competing Products

WhatsApp and zoom are some of the existing competing products to some extent. They provide a feature to create groups which can be used by families but they don't have a feature to remind users birthdays of their friends/family members, schedule virtual get-togethers, shop,play multiplayer games and send gifts. Gather is a single platform for families to keep in tune with each other. It is one platform that allows families living around the world to connect in a seamless manner.

4 The Scope of the Product

Allow users to get connected with their family members with hassle and all in one platform.

4a Scenario Diagram(s)



4b Product Scenario List

1) Login validation for new and already existing users.
2) Allowing only the authorized users to join a particular group.

3) Tutorial on how to use the product in the form of a short interactive video.
4) Maintaining chats for each individual group.
5) Keeping track of all the voice and video calls made.
6) Keeping track of all the suggestions from the users and integrating them on the product on a timely basis.
7) Sending reminders to the group members for any upcoming events such as festivals, birthdays, or get-togethers.
8) Sending users with shopping suggestions regarding occasions.
9) Sending users with gift suggestions from the choices made by individual users.
10) Updating the product with all the necessary ecommerce platforms such as Amazon , Uber eats, Doordash, in order to make the experience more user friendly.

4c Individual Product Scenarios

1) Login validation for new and already existing users:
    - Username and password of all the existing users must be validated and all the new users must be prompted to create a new account.
2) Allowing only the authorized users to join a particular group:
    - After creating a new account, users can join a group only through invite registration links or on request.
3) Tutorial on how to use the product in the form of a short interactive video:
    - After creating a new account, the user should be prompted to watch a short video clip on how to use the product in an interactive way. The end result of this scenario would be any user creating a new group or joining a new group with the registration invite or making a request to join a particular group within 5 minutes after watching the video.
4) Maintaining chats for each individual group:
    - All the users should have access to all the individual or group chats at any time of the day. By means, all the chats should be backed up in a cloud platform.
5) Keeping track of all the voice and video calls made:
    - All the users should have access to their voice and video call history for upto to 50 calls. Moreover, the user should have an option to add a user to their contacts if the information is not saved on their device.
6) Keeping track of all the suggestions from the users and integrating them on the product on a timely basis:
    - There should be a timely suggestion questionnaire for the users which will help the product to be updated with the integrated suggestions.
7) Sending reminders to the group members:
    - Tracking all the important dates such as birthdays and anniversaries and sending reminders to them. Also, tracking any get-together dates and sending reminders to all the participants of that event.
8) Sending users with shopping suggestions regarding occasions:
    - Sending users with timely shopping suggestions or shopping get-together ideas around the time of existing or manually updated occasions.
9) Sending users with gift suggestions from the choices made by individual users:

- Sending choice suggestions to all the users on their birthdays and anniversaries. Sending gift suggestions to the rest of the users on choices made by that "special" person. This will facilitate better relationships.

10) Updating the product with all the necessary ecommerce platforms:
    - Integrating all the necessary ecommerce platforms such as Amazon, Uber, Doordash in order for the users to have a smooth virtual meet-ups which can be in any form including virtual family dinners with the same menu delivered from Uber to all the participants.

5 Stakeholders

5a The Client

The client of the product is the development team of the application, i.e. a non external client. In case an external client is interested in the development of the product, it becomes a part of the development team, or, a client.

5b The Customer

External customers are various restaurant businesses and/or delivery companies that would purchase specific segments of the application to display promotions of their products. Additionally app users would be given an option to pay a subscription fee to remove sponsorship advertisements.

Moreover, adding new features in the application based on specific requests of customers would come at a set fee.

5c Hands-On Users of the Product

Since a free version of the application can be downloaded directly from the App Store, Google Play Store, or Microsoft Store depending on the operating system of the user, the application expects users of all types and ages.

Groups of any possible type primarily including family groups, study groups, office workers' groups, friend circles, or any casual groups, including people of all age groups are expected to exist on the application.

Paid promotions by a variety of different companies will benefit the users as they would be shown appropriate advertisements according to their group types.

The hands on users will also be able to avail special discounts when they participate in a referral program, which would, after all, increase activity of users in the application.

5d Maintenance Users and Service Technicians

Although the development team is responsible for extensively testing and timely updating the application, the application itself supports a bug reporting system which can be utilized to notify the development team about any bugs in the application, and also allow the hands on users to give suggestions for further improvements in the application.

5e Other Stakeholders

The other stakeholders include:

1. Sponsors: the sponsors can control content on specific portions of the application, which is a determining factor in the success of the sponsor and the other stakeholders.
2. Marketing and Distribution Team: the team is responsible for promoting the application on multiple platforms including online and offline platforms.
3. Ambassadors: affiliated social media influencers will promote the application on various social media websites.
4. Legal experts: responsible for looking into legal issues related to the unauthorized/illegal use of application for distributing copyrighted materials, any external agency modifying the application, etc.

5f User Participation

The participation of the user is a big part of the development process of the application. After the first initial release of the application, the development team will rely heavily on the bug reporting system of the application to resolve issues and make the experience better for the hands on users. Moreover, adding new features to the application and handling specific requests of the sponsors is highly dependent on user activity on the application.

5g Priorities Assigned to Users

Although all the users will have availability to the same features of the application, there will be some priorities that will be available to only a specific group of users.

Firstly, the premium users of the application (i.e. users with a premium subscription), will see no ads. In contrast, the free users will see ads, although ads will not cover any content in the application.

Secondly, sponsorship is based on the best-offer method i.e. the one who gives a higher price for the sponsorship will get the priority.

Lastly, the users who have been active members will receive special offers and discounts on products that will not be available for every user. Similar types of offers will pop up every now and then for specific users that will be account specific and cannot be utilized by other users.

6 Mandated Constraints

6a Solution Constraints

The application must be able to download at 3G connection on a hand held device and should not take more than 100MB of space. The application should be supported on android 7 and above and on iOS version 7 and above. The above versions are chosen by taking into consideration that most users have these versions already on their hand held devices and they do not have to update their device to install the application. The application should also be supported on web browsers such as firefox, chrome, brave, safari and edge.

6b Implementation Environment of the Current System

The application supports Android, iOS, mac OS, and Windows operating systems. At a minimum, the minimal requirements for the application to function properly i.e. support all features are as follows:

Android:

- Android Nougat (7) and above.
- Minimum of 100mb of available storage
- Supports Google Play Services
- Has dedicated sensors for audio input (microphone), Camera and GPS location tracking

iOS/macOS:

- iOS 10.0 and above/ macOS High Sierra and above.
- Minimum of 100mb of available storage
- Supports Apple Services
- Has dedicated sensors for audio input (microphone), Camera and GPS location tracking
- Non jailbroken device

Web Browsers (all platforms like laptops, ipads, computers etc.):

- Google Chrome, and Safari
- Minimum of 150mb of available storage
- Has dedicated sensors for audio input (microphone), Camera and GPS location tracking

In addition to this, some features of the application require spending real money. The quality of experience of the application mostly depends on the hardware and operating system.

6c Partner or Collaborative Applications

The application will have integration for popular services such as UberEats, Grubhub, Doordash, etc. such that food orders for virtual get-togethers can be placed directly through the application.

For example: Suppose there is a group of 8 members who will be attending a virtual get together. As a central theme for the get together, suppose they want to order pizza from Domino's pizza for everyone. One person can order pizza for all the 8 members and the money can get split between all 8 members, if required. Moreover, since all the members are staying at 8 different places, the app will be integrated in such a way that the nearest Domino's pizza shop will get the order for the nearest member.

Integration with other apps like Amazon, Uber, Lyft and FedEx will be implemented for delivery of packages which may include gifts, essential items, etc.

6d Off-the-Shelf Software

Since the product itself is a software package, the "Off-the-shelf Software" is more like instruction tutorials when some new user installs the software for the first time. Moreover a section in the application will contain short tutorials and instructions that will allow the user to get to know and utilize the application in the best way possible.

6e Anticipated Workplace Environment

The application is anticipated to be taken into use in any working environment. There is no specific workplace environment requirement, until and unless the hardware and software requirements are made, the application can be utilized anywhere. As most of the features of the application will work online, an Internet connection is required to use the application. For first time users, email verification and mobile verification (although not always) are required.

6f Schedule Constraints

No such specific schedule constraints apply to the product.

6g Budget Constraints

The budget of this project should be around $500,000 and should take about 3 months to build where the development team will include 2 UI designers, and 3 developers for integrating and testing, 1 legal advisor, and 2 marketing and distribution team members. Moreover, most of the money will be spent on getting external companies (Uber, FedEx, etc.) onboard with the project.

The funds for the project could be gathered through different companies like Doordash, grubhub in exchange of promoting their platforms on the app. Moreover e-commerce companies like Amazon, Best buy could also be fund raisers for the project to promote their platforms and to promote more delivery options rather than pick up options.

7 Naming Conventions and Definitions

7a Definitions of Key Terms

Shopping: A place where the user will be able to make a shopping list for someone instead of himself.

Suggestions: Menu item where the user will be able to see the suggestions given by their loved ones.

Gifts: A Menu item where people can see the gifts sent by their loved ones through e-commerce and give them an option to thank them for the gratitude.

Food Menu: A place where the menu for the gatherings and parties could be shared with the invitees and then provide them links with the places where they can order specific dishes from.

Deliver: An option provided for a pick up and deliver service where people could request pick up from a place and then deliver to their loved ones at another place either through an external delivery system or through someone who is planning to travel to the same destination.

7b UML and Other Notation Used in This Document

The conventions for symbols, diagrams and notations to be used in the document refer to UML standards in UML Distilled, 3rd Edition by Martin Fowler.

7c Data Dictionary for Any Included Models

User: Personal information, payment information, location, visibility

Group: details, Users, managers, calendar, sub-groups, planner

Party/Gathering: Organisers, invitees, Menu, and location

Family: Members, shared information, location

Images (formats): jpeg, jpg, png, tif, and raw images

Videos (formats): mp4, mpeg-4, mov, mkv, and WebM

Documents (formats): docs, pdf, pptx, and xls

8 Relevant Facts and Assumptions

8a Facts

The product will be beneficial for the users who depend on their families for selecting the products after they move away from their home and are inexperienced with managing home on their own. The product will attract those families who like to send

suggestions to their loved ones and rather than depending on other platforms, they can share and suggest new supplies, food and other essentials on the same place instead of using multiple platforms to get rid of those multiple links in the chat area.

8b Assumptions

- The user has basic knowledge of using smartphones and other devices on which they want to use the app.
- The user has a stable internet connection to use the app features.
- The user should be comfortable in making online payments and sharing personal and payment details over the internet.
- The user has knowledge about pick up and delivery systems like amazon, food services like doordash and messaging services like whatsapp which are already present in the public domain for public use.