Professor Kennedy
CS 410
Lab One Outline

<h1 style="text-align:center;">__Community Curator__</h1>

1. Introduction
   1.1. Problem
      1.1.1. Problem Statement
         1.1.1.1. "People lack effective resources to explore their local community, find and maintain relevant activities and hobbies, and increase connectedness with other individuals"
      1.1.2. Problem Characteristics
   1.1.2.1. Disconnect from community
            1.1.2.1.1. Number of close friends had declined over the years
            1.1.2.1.2. Moving and relocation plays a massive role in this alienation
         1.1.2.2. Lack of effective outreach tools for businesses
            1.1.2.2.1. City websites are insufficient to meet a business' needs
         1.1.2.3. Cities lack tool for interest gauging their residents and prospective residents
      1.1.3. Current Process Flow
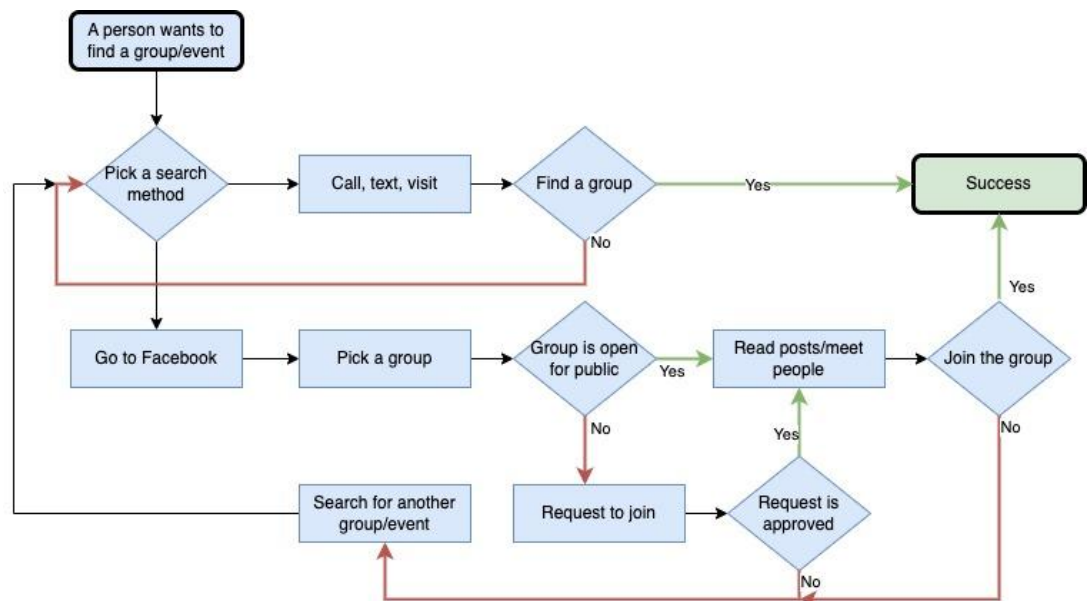
   1.2. Solution
      1.2.1. Community Curator to alleviate the challenge of becoming a part of a community
      1.2.2. Solution Statement
         1.2.2.1. "A web application to provide: individuals a genuine connection in the community, tailored events, and content, businesses a more

effective method of advertising to the right audience, and local clubs and groups a location/makerspace and tools/resources for meetings"

1.2.3.   Solution Characteristics

1.2.3.1.   Web based application available on a plethora of devices

1.2.3.2.   Suggestions

1.2.3.2.1.   Recommend ongoing or upcoming events to users when a potential interest in the event is found

1.2.3.2.2.   Generate events and groups to users when a group is not present, but a desire for it is high

1.2.3.2.3.   Collect user feedback to fine tune recommendations

1.2.3.3.   Difference From Competitors

1.2.3.3.1.   Collect user feedback on events to fine tune recommendations
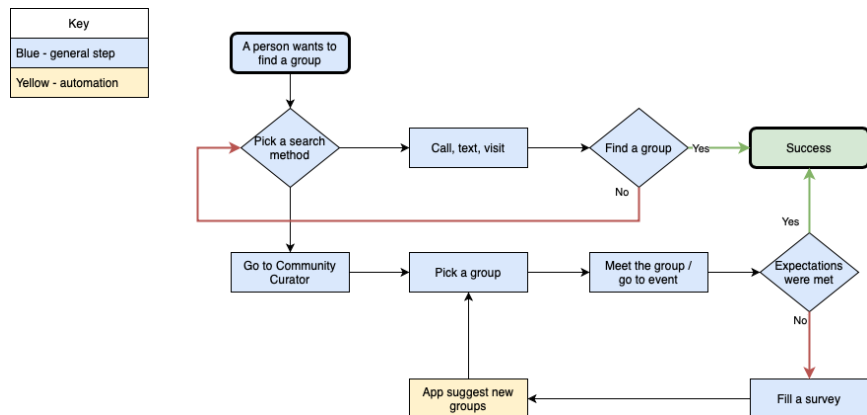
1.2.3.3.2.   Suggest groups to potential group members

1.2.3.3.3.   Present event suggestions to local businesses

1.2.3.3.4.   Push local events to the relevant groups

1.2.3.3.5.   Suggest locations to host events and meetings

1.2.3.4.   Solution Process Flow

1.2.3.5.   Will Not Do

1.2.3.5.1.   Share user information to business or events

1.2.3.5.2.   Promote external/irrelevant advertisements

1.2.3.5.3.   RSVP to events on user's behalf

1.2.3.5.4.   Help with dating

2.   Community Curator Description

2.1.   Product Features

2.1.1.   Account management

2.1.2.   Security

      2.1.3.   User interface

      2.1.4.   Recommendations & Suggestions

      2.1.5.   Post-event survey

2.2.   Major Components (Consumer)

      2.2.1.   Required Hardware

            2.2.1.1.   Desktop with access to the internet

            2.2.1.2.   Windows, Mac, and Linux machines

      2.2.2.   Required Software

            2.2.2.1.   Internet browser

2.3.   Major Components (Developer)

      2.3.1.   Development Tools

            2.3.1.1.   IDE/Text Editor : VS Code and/or PyCharm

            2.3.1.2.   Version Control : Git with GitHub

                  2.3.1.2.1.   Issue Tracking : GitHub Issues

            2.3.1.3.   Languages : Python & JavaScript

                  2.3.1.3.1.   Frameworks : Django & React

                  2.3.1.3.2.   Libraries : NumPy, TensorFlow, Pandas, Matplotlib

                  2.3.1.3.3.   Unit Testing : Pytest & Jest

            2.3.1.4.   Task Management : Trello

            2.3.1.5.   Database : PostgreSQL

            2.3.1.6.   Documentation : OpenCV

            2.3.1.7.   APIs : REST
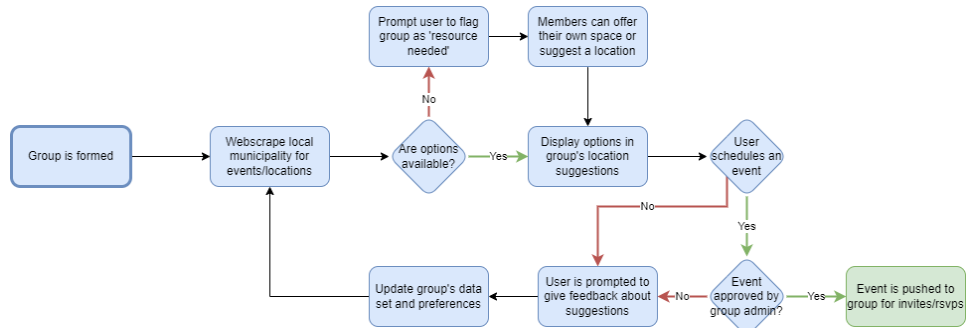
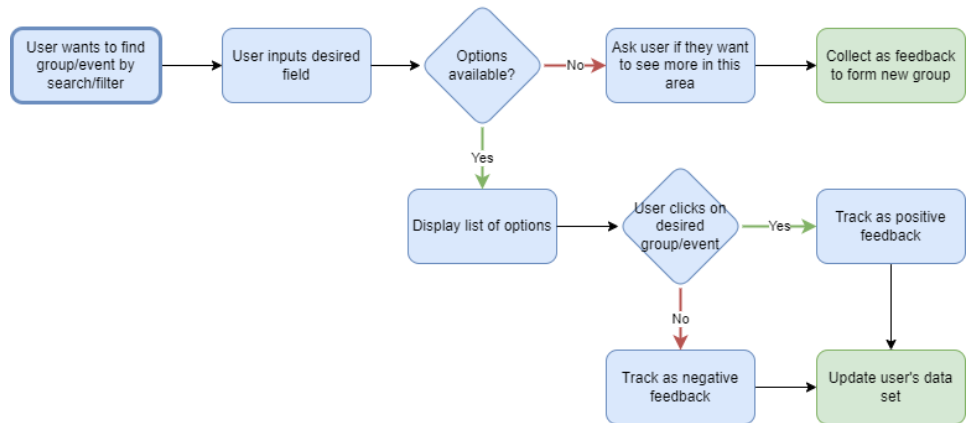   2.3.2.   Major Functional Components Diagram
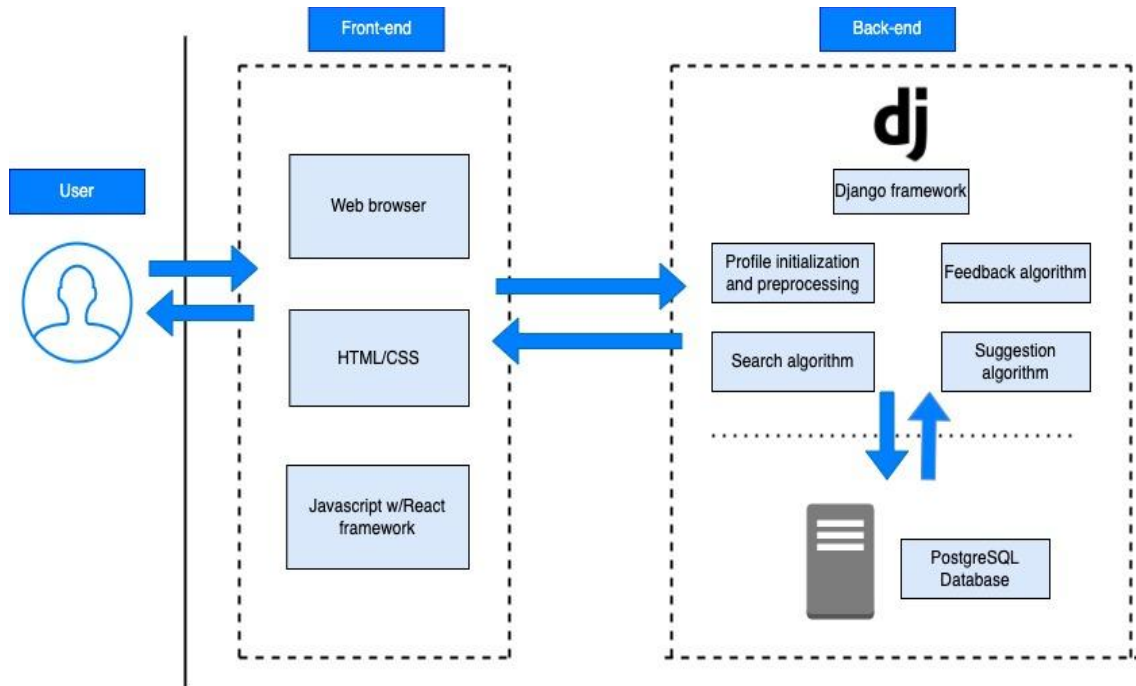
2.3.3. Algorithms

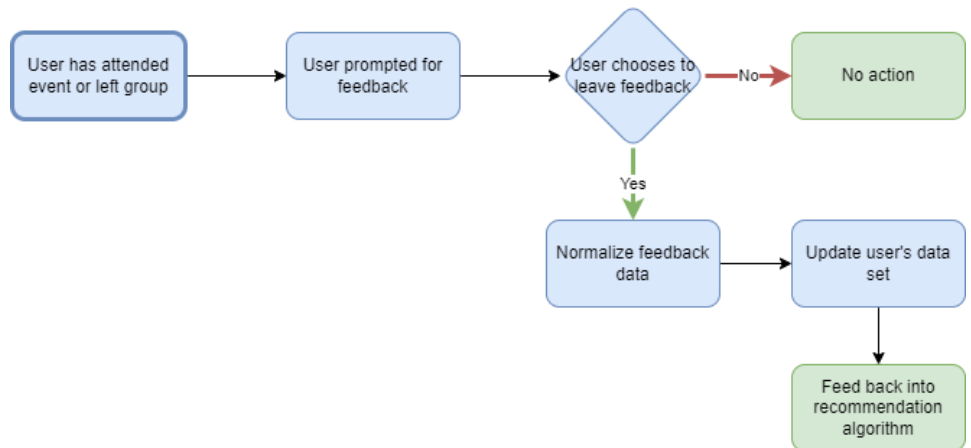#### 2.3.3.1. Recommendations & Preprocessing
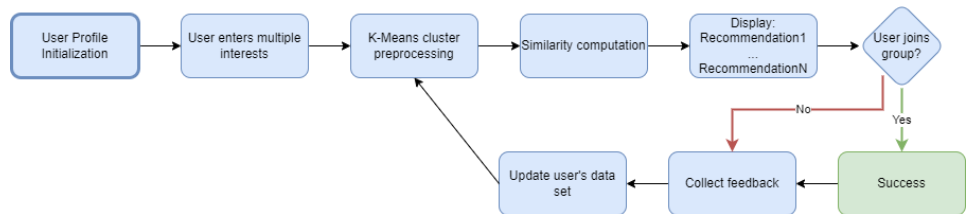
2.3.3.2. Event/Location Suggestion

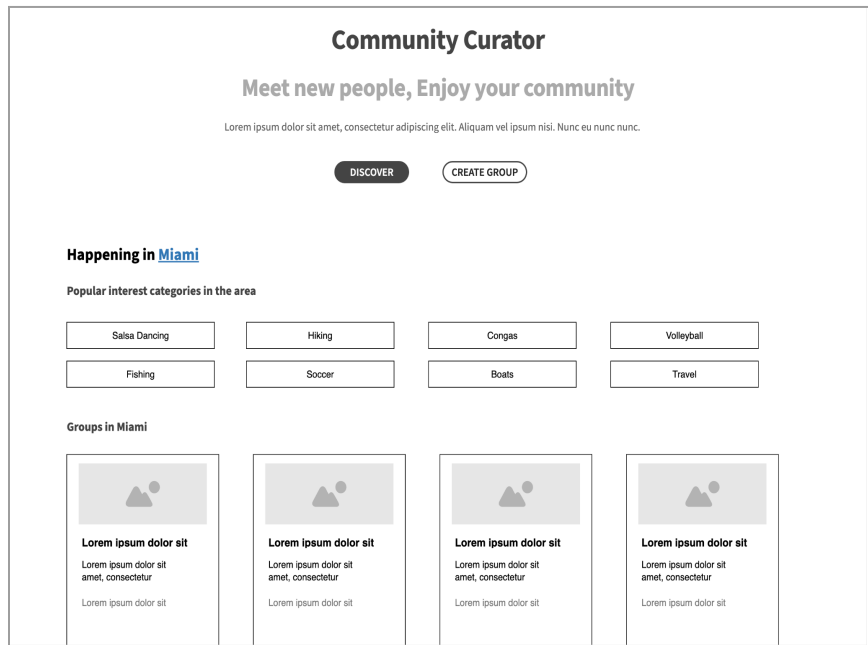#### 2.3.3.3. Search and/or Filter

2.3.3.4. Feedback

2.3.4. Database Schema
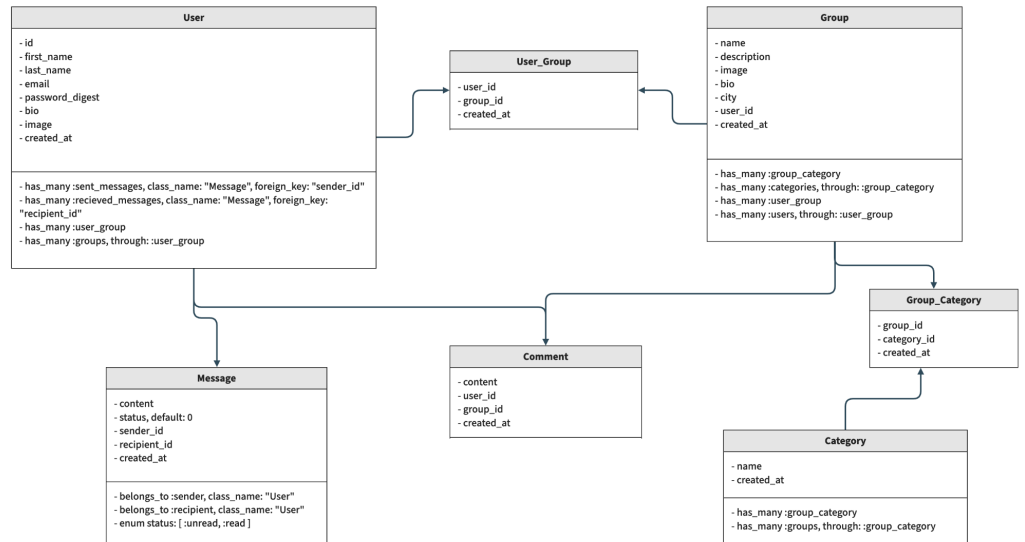
2.3.5.   GUI Mockups

2.3.5.1.   Main Page

2.3.5.2.   "Discover" Tab

Welcome, Joseph

Recommended groups near you

Groups

Search Groups

+ Create new group

Your Groups

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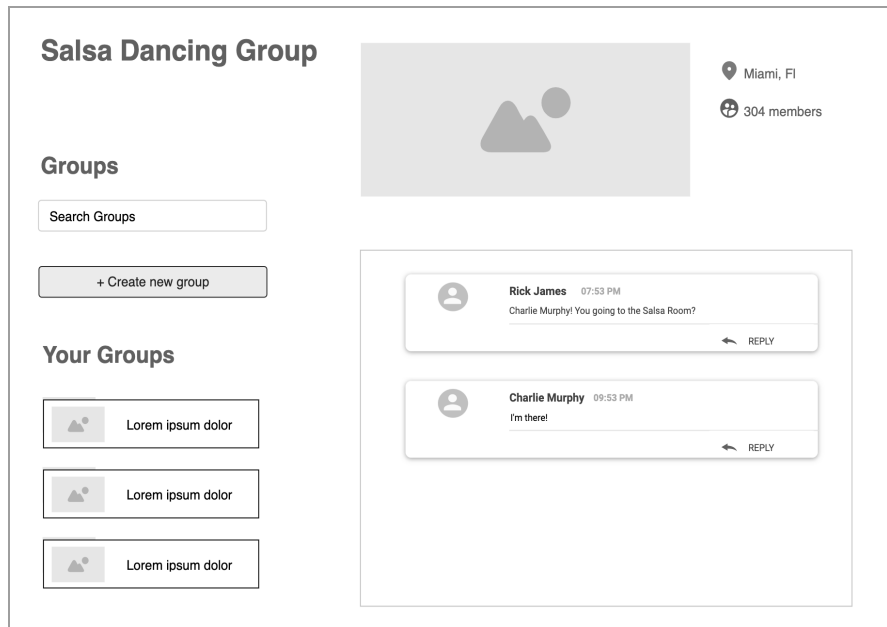### 2.3.5.3.   Create Group Page

1 Lorem ipsum dolor ———— 2 Consectetur adipiscing ———— 3 Pellentesque arcu

Name

Email

Location

Continue

2.3.5.4.   Group Home Page

2.3.6. Agile Sprints
2.3.7. Risks
2.3.7.1. Customer

2.3.7.1.1. C1: Customer is unhappy with group recommendations or group doesn't exist
2.3.7.1.2. C2: Customer has discovered malicious group
2.3.7.1.3. C3: Customer finds someone misrepresenting group
2.3.7.1.4. C4: Group chats become overrun with arguments
2.3.7.1.5. C5: App navigation failure
2.3.7.2. Security/Technical

Risk Matrix		Probability				
		Very low	Low	Moderate	High	Very high
Impact	Very High	S1	T3	T4		
	High		T1/S2			
	Moderate					
	Low			T2		
	Very low					

    2.3.7.2.1.   S1: Unauthorized release of personal data
    2.3.7.2.2.   S2: Man In The Middle Attack
    2.3.7.2.3.   T1: Database failure
    2.3.7.2.4.   T2: Makerspace location does not have access to app or internet
    2.3.7.2.5.   T3: Application crash
    2.3.7.2.6.   T4: Security breach

3.   Identification of Case Study
  3.1.   Who is this product for
    3.1.1.   Hobbyists
    3.1.2.   First-Timers
    3.1.3.   Businesses
    3.1.4.   Clubs
  3.2.   What will it be used for
    3.2.1.   Find groups that match user's needs or passions
    3.2.2.   Present the users with local and personalized events
  3.3.   Who else may benefit from this
    3.3.1.   Cities
    3.3.2.   Municipal Officials
4.   Product Prototype
  4.1.   Prototype Architecture
    4.1.1.   Hardware
    4.1.2.   Software
  4.2.   Prototype Features and Capabilities
  4.3.   Prototype Development Challenges
5.   **Conclusion**
6.   **References**