



# LinkUp

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## LETTER TO INVESTORS

Dear Potential Investors,

We are students at San Diego State University, and we are reaching out to you to help improve mental health and reduce social anxiety among college students. Our project 'LinkUp' is an application that does exactly that. We have created a platform where like-minded students can connect based on their personal profile which consists of their interests, both socially and academic. LinkUp makes it easier for college students to connect and find friends that share the same interests as themselves and can be used to socialize and help the students with problems they may have in their academic life. Using LinkUp, the life of your college students will become much easier and less stressful. When creating a profile on LinkUp, you will have to use your college email. This means our application is very safe, because you know that every person you meet at LinkUp is a student at the same college you are. When you have connected with a like-minded student, the app gives you the opportunity to have a conversation with your match. Besides this, LinkUp also provides vendor recommendations at campus, so you have a safe way of meeting with your new friends.

We intend to use San Diego State University as a pilot-test, and when we have tested our app at SDSU we will expand to colleges all around California, and eventually the whole nation. Our profit will mostly come from the vendors and the partner university.

## EXECUTIVE SUMMARY

LinkUp gives investors the chance to be a part of an up-and-coming startup with an extremely flexible budget. LinkUp leaves investors with a low financial risk, the money put into the app will prominently be marketing and research costs.

The problem we're tackling is the increasing amount of college students spending less and less time socializing, which we found to lead to social anxiety and other mental health issues. We want to improve this by connecting students with similar interests and making it easy to connect with one another, whether that be socially or educationally. We have designed linkUp, an easy to use application that allows college students to create their own personalizable profile, connect with potential new friends, hold private conversations as well as offer vendor recommendations.

LinkUp is projected to net 100k in total revenue in its first year with 75k being the start-up costs. This leads to an ROI of 33.3% which are very good numbers, this is possible through the use of an Ad-Based Revenue Model. It is different from any competitors out in the market such as Tinder and Facebook because LinkUp focuses more on social networking and establishing professional relationships based off of similar interests rather than appearances of nearby peers. We offer an environment where students can choose to interact socially or educationally in a safe manner, isolating ourselves from social media applications.

LinkUp is an easy to use social networking mobile app that aims to connect like minded students and tackle issues such as mental health and social anxiety that students frequently face throughout their college career. We hope you find interest in our application.

## **1. INTRODUCTION**

### **1.1 Background**

Do you ever feel socially isolated, yet extremely eager to socialize? Most students tend to show up to class, get their work done and head straight home. They are missing out on precious moments of their college experience because they want to get back to their couch as soon as possible. However, what if they could meet fellow Aztecs in the comfort of their own home? We offer a solution to this problem; Link-Up, our brand-new polarizing app that will change the future of student relations at San Diego State and hopefully all universities across the nation one day. With Link-Up we can provide students with a safe way to meet one another. This is done by verifying a student's profile using their .edu email, only one account can be made with each email. Through this method spam accounts will be weeded out and fake accounts will be near impossible. Link-Up can be used for an array of purposes, from making friends to finding your soulmate. We designed Link-Up for the most popular students to the more introverted and shy. Link-Up has no likes or followers; it is a hub for creating new connections. Using the APIs held in the database of the university, you can view your current class schedule and contact other students in your class or major for study sessions, which itself is a great way to begin a friendship since the interest of the major or class is a perfect stepping stone for a connection.

### **1.2 Problem Statement**

This issue has been something we have all faced out of our time in college, when Eric suggested the app it seemed like a no brainer for us. This app is something I wish we would be

around to experience but creating it is just as thrilling. We are crafting a groundbreaking service that we believe will have colleges around the nation envious that SDSU was the first to implement. Link-Up will be able to better mental health and stress levels for our fellow students. Many students do not enjoy being alone, but it is difficult when students similar to them may be in the same situation but unsure how and where to make friends. We believe this provides our classmates a more efficient and easier way to connect with peers. Students will be able to use our system to network with each other more effectively through a social app that is a blend of many different social apps. Our app will function like MeetUp, Tinder, Bumble, Facebook, Reddit, Discord and LinkedIn while remaining separate and fresh. Link-Up will have many categories such as studying, exercising or even grabbing a drink (SDSU is not a dry campus J)! Leading our users to go outside of their comfort zone in a safe friendly environment like their campus with ease.

Link-Up plans to be able to offer everyone with a valid student email to have the service provided to them for free by the school. Link-Up will cost the school money upfront however we strongly believe it will increase revenue strongly. Students who currently have a LA Fitness gym membership may consider switching to SDSU's gym to conveniently meet new friends from Link-Up. It will increase sales revenue for on-campus dining and get students in the library. We are sure this app will also make school more enjoyable and comfortable for students which we think will even lead to an increase in applicants! For example, in high school students walked the halls surrounded by friendly familiar faces; at university you may know not but one single person around you. If we can make each student one friend, they would not have made it without our network. We would be thrilled. While we plan to make Link-Up more of an intimate

relationship between the two students, we hope to incorporate clubs which we hope will in turn lead to a simpler loose-organized club system. To prevent clubs from becoming “cliquey” we will suggest students join multiple clubs to expand their horizons.

As prior mentioned, we expect a prosperous future for the Link-Up in all aspects. We believe short-term goals are just what the first word is. Link-Up will be beta tested over the Summer Session when the school is not as busy, and we can pay close attention to it from under a microscope. By then we hope to have an official release the day of freshman/transfer orientation where we teach students how to set up their account and even have a 10-minute workstation to set up interests, hobbies and pictures. We encourage students to change these as they please but just to really inform them on how to get it done. After the Spring semester we plan on taking it to the next level. Link-Up will be available for all CSU college students, however, their student email would only connect them to their own schools' network. With our last step being going nationwide, we believe conquering the CSU system will lead us to be better fitted for a larger audience. This in turn will benefit SDSU for being the first school to give us a chance, they will be remembered as the original adopters every time the network's success is mentioned.

### **1.3 Project Scope Statement**

Link-Up will combat lonesomeness in a sense where users are not uncomfortable about the idea of making friends online, because they are fellow classmates. Students will enjoy the service because it is secure, girls can make plans with a guy and not worry about being kidnapped, guys can talk to girls and not worry about being catfished. But more importantly

students can go back to just being sociable without facing anxiety. With this app we hope for students to not only socialize more but to exercise and study more as well. There will be sections like looking for friends to: study with, attend concerts with and grab a bite with. From a technical aspect our ideas are not complicated, they are just questioned because of the marketing side. How will we get students to want to use Link-Up, but we believe with the help of SDSU and events such as Aztec Nights and Orientation we can present our app in a fun light.

Link-Up is a different approach to the social issues we have at school. No matter how many school events there are, we cannot expect the majority of students to attend. But we can hope for the majority of students to use our app. We already have dating apps, why is there no app for socializing and making friends! With the incorporation of a .edu email we provide our students a safe gateway to meet fellow students, with a jump start by already knowing a bit about each other's interests. There are many apps with a little following that may have a similar idea, but I believe making this an app just for the students is ground breaking. What if your new best friend only goes to class Monday/Wednesday and you only go Tuesday/Thursday. These students may never run by each other but at the same time they might get along like two peas in a pod. We believe being incorporated within the school and marketing the app around campus will make students more comfortable meeting friends online and take away the negative image behind it. Link-Up is the future of socializing on campus and will have different colleges distraught they had not thought of it sooner.

## **2. ANALYSIS**

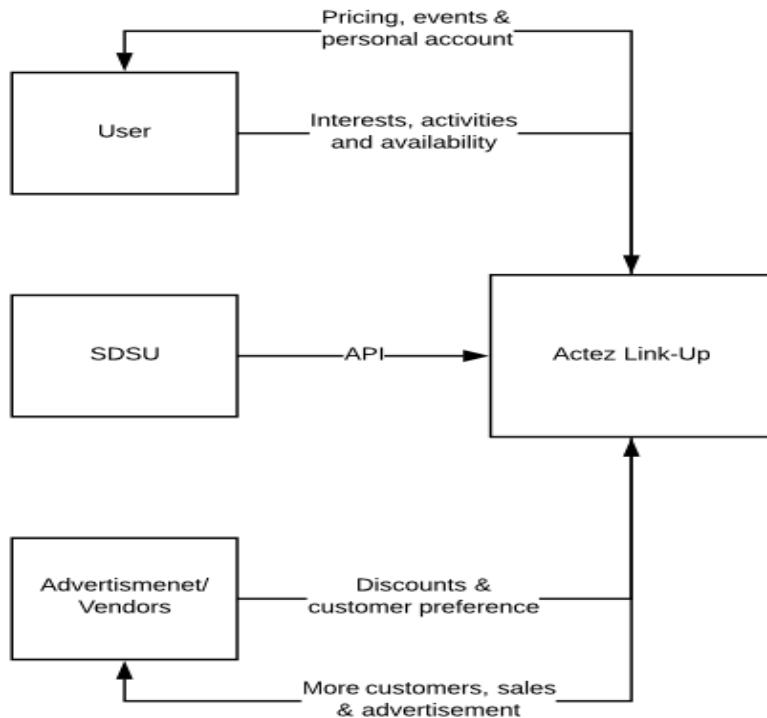
### **2.1 Current Processes**

As of today, Link-Up has no competition. Academic success is the primary goal of SDSU college experience for many students. However, it is critical for students to interact and share opinions to create intellectual development. During the breaks many students go to the food court or library. According to The American Freshman Study, 2014, "In 1987, 37.9% of incoming college students socialized at least 16 hours per week with friends while 18.1% spent five hours or less. By 2014, 18% of students reported spending at least 16 hours per week socializing with friends (an all-time low) whereas 38.8% dedicated five hours per week or less to socializing (an all-time high)." With Link-Up, we expect that students will be more open to connect with other students. They will experience college campus events and activities which ultimately will lead to academic motivation. Students will have opportunities to meet new people who could possibly be lifelong friends and try new things that they are interested in.

### **2.2 Requirements**

To improve the current processes for "data processing" we need better Validation – Ensuring that supplied data is "clean, correct and useful." Sorting – "arranging items in some sequence and/or in different sets." Summarization – reducing detail data to its main points. Aggregation – combining multiple pieces of data. Analysis – the "collection, organization,

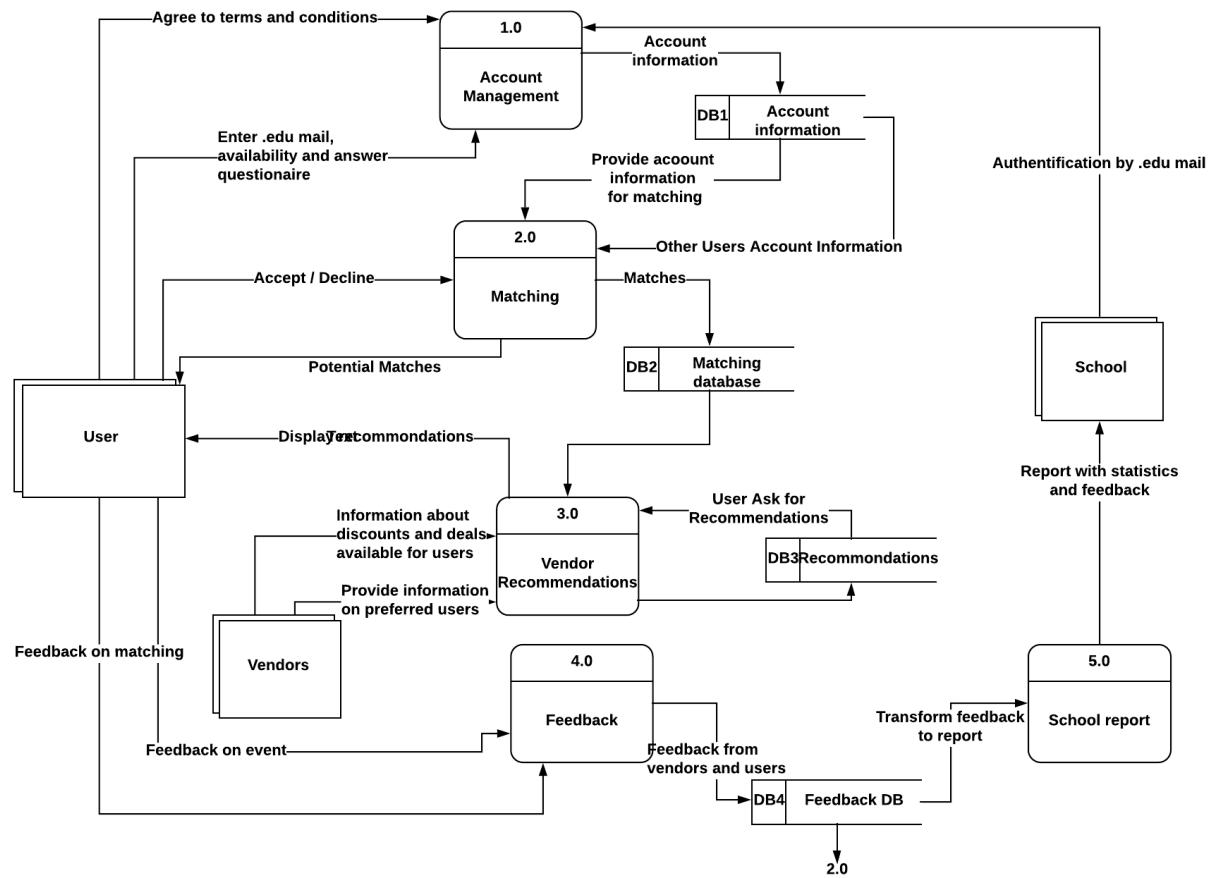
analysis, interpretation and presentation of data.”. Reporting – list detail or summary data or computed information. New data processing like storage, analysis , aggregation , reporting would help the potential end - users have a more smooth interaction and help reduce the risk of malfunctioning. The methods we used for determining the requirements were interviews. Users are more likely to use an app that is organized, provides no security risk and is easy to navigate. Key external entities interacting with the system would include San Diego State University and Advertisement / Vendors. The key inputs and data sources would be the user’s information including interests, activities and availability, the discounts and customers preferences from the vendors. The context diagram with this information is shown below.



The five key data processing activities for Aztec Link-up would be:

1. Account Management
2. Matching
3. Recommendations
4. Feedback
5. School Report

For account management there must be data stored in a database that includes all information about the user accounts. This database should have data about the user such as availability and their personal answers to the questionnaire. The matching process is based on the information from the account database and users with the same preferences will be matched. Another important part of the datasets is feedback from users and vendors and the process of turning that data into a report for the school in order to improve in the future. The feedback database is also used to improve the matching process. We plan to outsource the app since we can not make an effort to do it in-house.



**The key functional requirements are:**

1. Transaction corrections, adjustments and cancellations - captured to highlight how the impact of the business rules affects the transactional state
2. Administrative functions - functions should be captured to highlight generic housekeeping tasks e.g. for all sales committed to proceed then the associated sales history should be stored and kept for X years
3. Authentication - security policies and data views available for CRUD operations for users and other systems.
4. Authorization Levels - security policies and data views available for CRUD operations for users and other systems.
5. Audit Tracking - Logging
6. Certification Requirements
7. Historical Data
8. Reporting Requirements - Data (usage, storage, etc.)
9. External Interfaces - web services, etc.
10. Policies and Procedures

**The key non-functional requirements are:**

1. Performance - provider systems must meet the agreed response time performance targets
2. Scalability - provider systems must be designed to accommodate increased volumes, workload and users
3. Capacity - must meet the agreed capacity requirements

4. Availability - meet the agreed availability targets (service time and/or hours and planned downtime) as defined in the operational level agreement (OLA)
5. Reliability - how well the software system consistently performs the specified functions without failure.
6. Security - Provider systems SHALL resist unauthorized, accidental or unintended usage and provide access only to legitimate users.
7. Data Integrity - how well the data are maintained by the software system in terms of accuracy, authenticity, and without corruption.
8. Usability - Provider and consumer systems SHOULD follow the [ISO 13407](#) / [ISO 9241-210](#) to explain a user-centered design process
9. Serviceability - Provider systems SHALL be designed so that technical support personnel are able to monitor and manage it in operation.
10. Business Rules - business processes in the specific application. Usually associated w/ a specific use case or step in a process, and identifies the system behavior at that step

## 2.3 Feasibility Study

Feasibility study is “used to determine the possibility of a project idea, such as ensuring a project is legally acceptable, technically feasible, operationally doable, politically correct, and economically justifiable.” We are evaluating feasibility throughout our planning and implementing the app. Defining our position in the market will be the first step in our marketing plan. It will help us and people to have clearer ideas of what our app does and who you do it for. There are around 34,828 students enrolled at SDSU that might just be Link-Up. With more than 350 Student organizations, SDSU is ranked in the top 25 nationwide for ethnic diversity. We are unique to the market and the first to develop apps. We have two main sources of revenues: SDSU and advertisers. SDSU will be founding the development of the app, and after the app is launched and tested, advertisers would be major sources of revenues. Today, more than “40 percent of the world’s ad spending is expected to take place online in 2018” and it expects to grow.

Economic evaluation is a vital part of our app where we are dealing with factors that can be measured and compared. To assess economic feasibility, we must analyze costs and benefits linked with the App. We will be estimating the intangible and tangible costs that essentially predict the outcome of future expenses. However, it is impossible to come up with the exact number of costs and benefits for our project, especially with us for the initial phase of the development process. Intangible costs can have devastating consequences on the business. For example, if the app's security was breached, this would damage costs of the company as a whole.

Stage	Component	Median Low (Hours)	Median High (Hours)	Maximum High (Hours)
Planning	Research and discovery	8	40	200
	Scope definition	9	27	160
Design	Wireframe design - seven screens	14	56	140
	Visual Design - seven screens	14	87.5	210
	User experience design	7.125	28	200
Features	Native device features	4	29	100
	User engagement, such as SMS, Email, Push, Social	5.5	30	150
	User login	4.5	28	70
	Use of location data	5	24	150
	Payments	12	40	200
	Sync across devices	16	62.5	200
	Initial setup/Basic controls	5	20	50
	Data storage	6.5	40	200
Infrastructure	Third-party API integration	8	50	120
	Access to enterprise data	22	100	400
	Data encryption	10	40	80
	Scalability/Large number of users	24	130	800
	Infrastructure for performance management and analytics	8	20	80
Testing	Web portal or CMS to manage application	35	120	1,000
	Internal, user, and deployment testing	30	160	300
Deployment	Licensing, packaging, etc.	5.125	11	40
<b>Total Hours</b>		<b>252.75</b>	<b>1,143</b>	<b>4,850</b>
x \$100/hour		\$25,275.00	\$114,300.00	\$485,000.00
x \$150/hour		\$37,912.50	\$171,450.00	\$727,500.00

These are the most one-time costs for developing the app. We estimate that it will cost us around \$100,000 to \$500,000. Other costs we need to consider are training courses which we estimate cost about \$5,000. Office rent in San Diego will go for \$6,000 to \$10,000 depending on location and employees. We plan to market the App through SDSU website and social media companies. Majority of our costs are variable except for rent, employee's salary, cloud service which may run over \$20,000. It also depends on complex logic and features that would be more expensive to develop. When it comes to intangible cost, it cannot be easily measured in terms of dollars or with certainty. For example, technology is uncertain and something that is hard to predict since technology is rapidly changing which will be costly to repair. The benefit of having the best quality of hardware will increase productivity and lower our operating cost as well as workforce. It will also result in improvement of the decision processes as we have access to accurate and timely information. Maintenance is a critical part of our App which will improve and support operation and increase our asset utilization.

The problem with technology is that things may work perfectly on plan, it is frequently very difficult to implement. As a result, we plan to build a proof-of-concept prototype that verifies that our technologies work together. This may take months, but it is a critical step for the business. After the testing, we will analyze each of our technologies and examine the benefits and costs. We also must consider factors that might come out in the future which could fail technical assessment. We will be carefully selecting the companies and third-party support viability. We plan to outsource which will be costly but worth it in the long term. We believe that college students have technical experience to work through the app as it is simple to learn and use.

Operational Feasibility is when the application is in production, and we must plan to maintain and support this application. After we have built our application, we have decided how to operate it. First, we need to determine whether we can efficiently and effectively operate and support it. Then, we will recruit qualified applicants to be able to handle new applications and train them.

## **2.4 Risk Analysis**

The risk of choosing the wrong development partner will be costly and time consuming. We cannot afford to develop our apps in-house; therefore, we must outsource which adds a layer of risk to our app. The risk lies in selecting the wrong development partner. We do not have high funds to choose the top development partner. We might face hidden costs and low-quality production. Another risk is getting denied from SDSU. We also must follow regulation set by SDSU for us to have the App be used by the students and agree to fund the project. Another risk

is that students will be using the app solely for dating. SDSU must approve the app that will incorporate school academics. Since we will be identifying students based on a .edu email and there we will hold their personal information, the risk of security breach is a huge responsibility. The risk of our inaccurate cost will slow down the implementation process.

The biggest risk in building our app is that our target SDSU's students do not want or need the app. We do not want to fall into the trap of creating an application from our own perspective and not the view of the student. From the start, we will seek input from students, faculty, and vendors to understand what type of feature and functionality they would be looking for when using the app. On the other hand, we might have the opposite issue where we will have unsustainable user growth. Adding new staff to support customers will be costly especially at the beginning stages of our app.

The risk maintenance can be applied to each system in the app application. Our processes and information systems must be able to adapt, accurately, and prevent problems in the future. Re-changing the design and re-coding depending on our testing if results are met. These costs will be intangible costs which are often not considered. If we are dissatisfied with the features we will have to redesign our application. We also might face problems not being able to make changes if it is impossible to trace development changes that were undocumented. Also, Marketing risk is the potential for failures of our marketing strategy including risks related to pricing, promotion, branding and customers. If our marketing plan fails, we will have to re-brand. This could be costly and time consuming. Not having enough users will greatly impact advertising and revenue. Brand awareness is an important factor in marketing and making sure

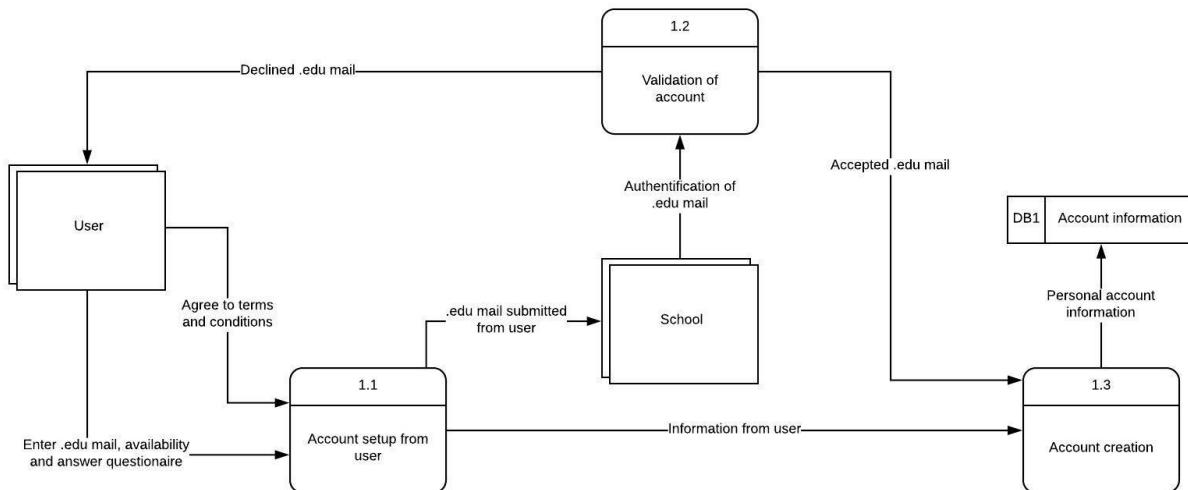
the users have a clear view of our app. Finally, the risk of negative association such as poor customer service will most likely damage the app reputation.

### 3. LOGICAL DESIGN

#### 3.1 Data Flow Diagrams

A data flow diagram (DFD) maps out the flow of information for any process or system. It uses defined symbols like rectangles, circles and arrows, plus short text labels, to show data inputs, outputs, storage points and the routes between each destination. They can be used to analyze an existing system or model a new one. Like all the best diagrams and charts, a DFD can often visually “say” things that would be hard to explain in words, and they work for both technical and nontechnical audiences, from developer to CEO.

#### Level-1 Data Flow Diagram of process: Account Management



#### Project Dictionary for DFD Level 1: Account Management

User - The user of our app LinkUp

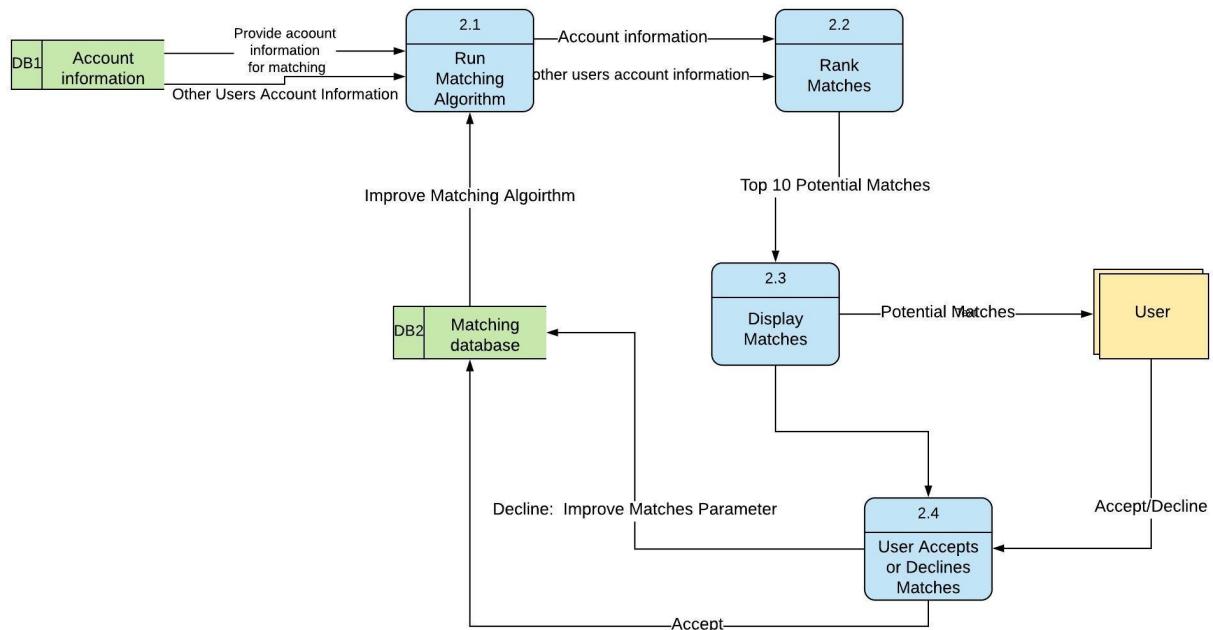
School - The school where the user's a student

1.1 Account setup from user - Information provided by user

1.2 Validation of account - School validation of .edu mail

1.3 Account creation - Account created and stored I DB1

### Level-1 Data Flow Diagram of process: Matching



### Project Dictionary for DFD Level 1: Matching

User - inputs: Personal information , interests

Outputs: potential matches

DB1 Account Information - Stores information that the User ( and other users ) inputs for personal information and interests

DB2 Matching Database - Stores the User potential matches if user accepts matches and stores parameters to improve matching algorithms if user declines matches

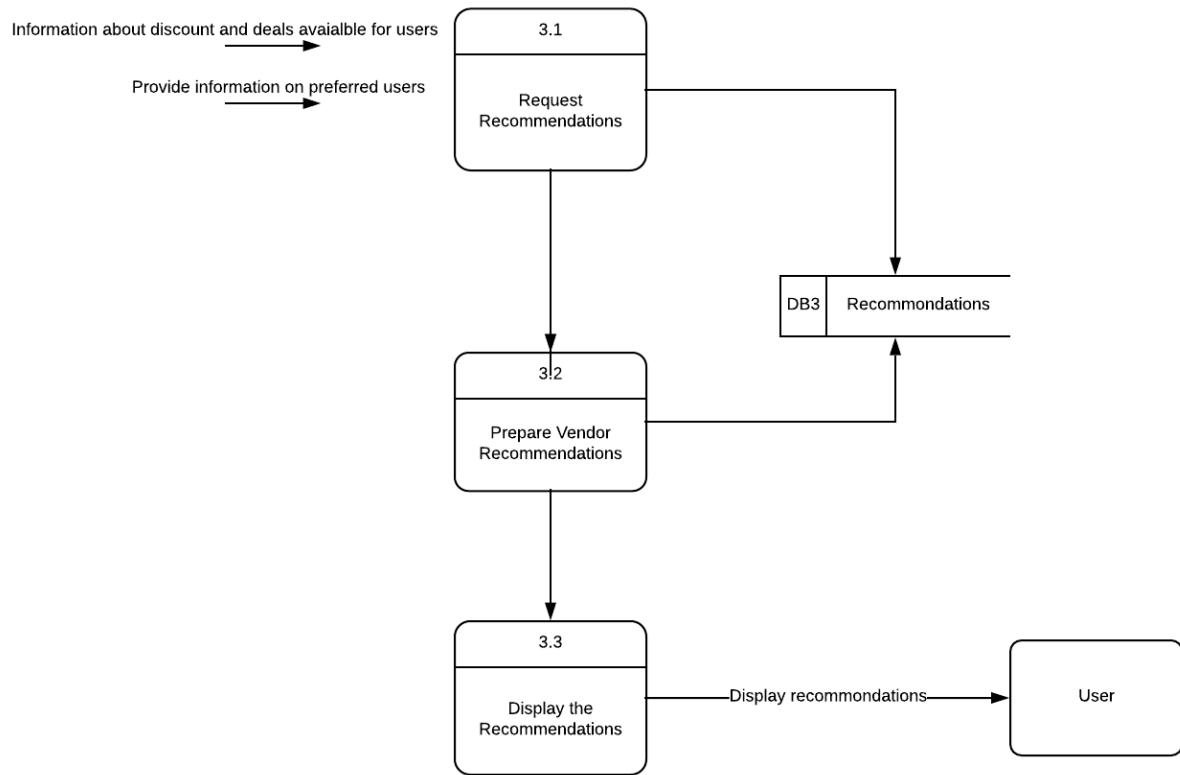
2.1 Run Matching Algorithm - takes information that the users stored in “DB1 Account Information” and runs matching algorithm

2.2 Rank Matches - systems ranks list of potential matches

2.3 Display Matching - displays the top 10 potential matches to the user

2.4 User Accepts / Declines Matches ( Improves Matching Algorithm ) - If user accepts matches displays conversations box with potential matches and if user declines matches parameters will be stored and then sent to level “2.1 Run Matching Algorithm” to improve the algorithm to display a new set of potential matches

### Level-1 Data Flow Diagram of process: Recommendations



#### Project Dictionary for DFD Level 1: Recommendation

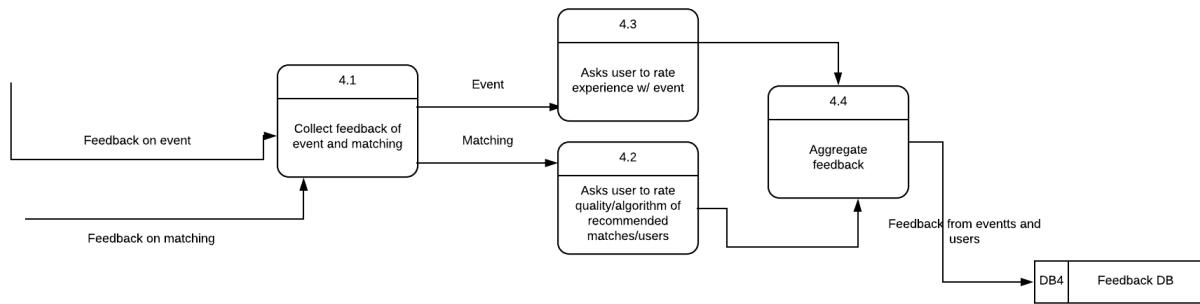
3.1 Request Recommendation= use the data to extract deals and users

DB3: this is where the data of users is stored

3.2 prepare Vendor recommendation= this occur in UI where it ranks recommendations

3.3 Display Recommendation= Show the users the recommendation according to their preference and interest.

## Level-1 Data Flow Diagram of process: Feedback



4.1 - Collect feedback of events/vendors/ and potential matching users

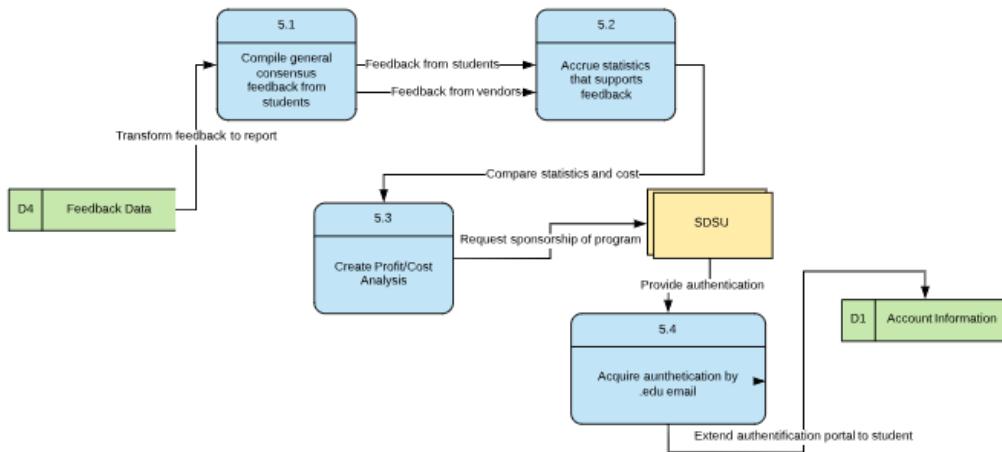
4.2 - Ask users to rate quality (feedback) which will improve the algorithm of recommendations for the user.

4.3 - Ask users to rate vendor/event experience to improve the algorithm of recommendations for the user.

4.4 - Collect feedback and store all data into the DB4 (Feedback DB)

DB4 - All data collected goes into the feedback DB, which is sent to AWS for further application usage.

## Level-1 Data Flow Diagram of process: School Report



Project Dictionary for DFD Level 1: School Report

DB4: Feedback Database: This is where student feedback is held

5.1: Compile feedback: Sort and filter feedback for student report

5.2: Accrue statistics: Create statistics using student feedback for profit/cost analysis

5.3: Create profit/cost analysis: Translate statistics into analysis to include within report to help gauge amount of funding

SDSU: Accept/Deny funding plus portal authorization: If University accepts continue as planned, if denied use alternative method such as school identification card check

5.4: Acquire authentication by way of university portal: Extend university portal to users

DB1: Account Information DB: Students can verify university portal and begin creating account

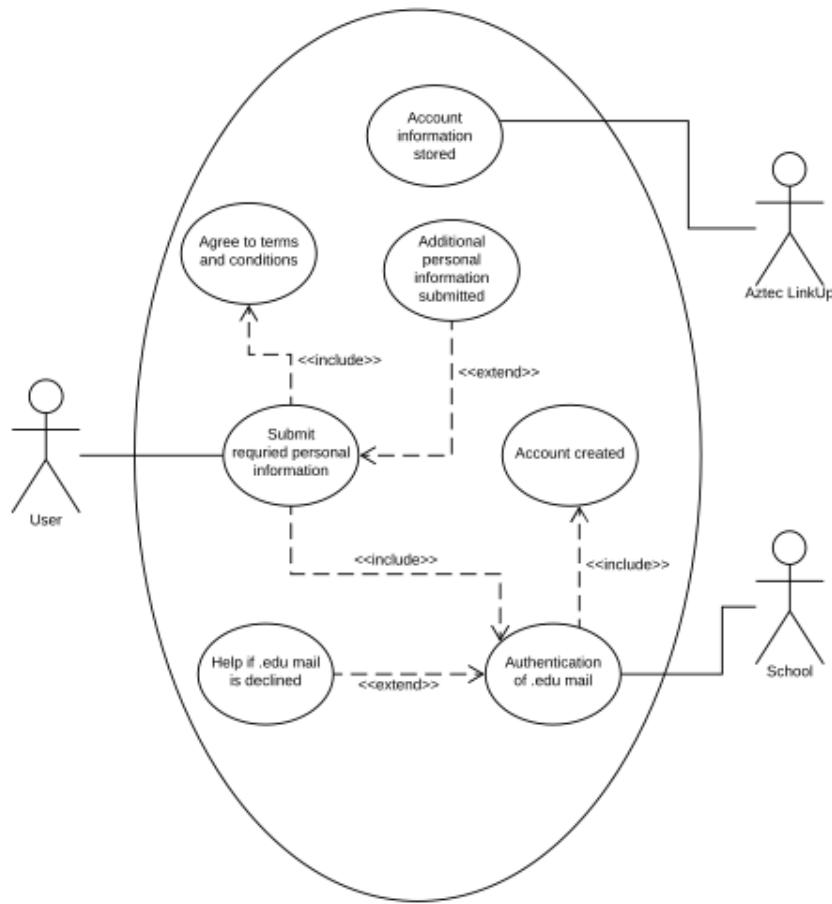
## 3.2 Use Case and Process Model

In the Unified Modeling Language (UML), a use case diagram can summarize the details of your system's users (also known as actors) and their interactions with the system. UML use case diagrams are ideal for:

- Representing the goals of system-user interactions
- Defining and organizing functional requirements in a system
- Specifying the context and requirements of a system
- Modeling the basic flow of events in a use case

### 3.2.1 Use Case 1 and its Process Model

## Use Case Diagram of process : Account Management



Key functional requirements	Key non-functional requirements
Data security	Capacity
Authentication by school	Performance
Provide fulfilling questionnaire	Response time
Audit tracking	Storage
Administrative functions	Data Integrity

Transaction corrections, adjustments and cancellations	Security
External Interfaces	Availability
Certification requirements	Reliability
Authorization levels	Business Rules
Reporting requirements	Environment

## Use Case Narrative: Account Management

Project Name: LinkUp Author: Malene Frandsen

Use Case ID:	1.0	Version:	1.0
Use Case Name:	Account Management	Date:	10/31/18
Use Case Objective:	The creating of an account		
Primary User/Actor:	Users as being the students in the school		
Trigger:	A user wants to sign up for our app		
Use case associations	The matching process.		
Preconditions:	This is the first use case. The only precondition is that the user is a student at a school that uses Aztec LinkUp		
Post-conditions:	When the account has been made, the matching process begins.		

### Basic Flow

Step	User Actions (Inputs)	System Response (Outputs)
1	User signs up for Aztec LinkUp	The system asks for personal information
2	User enters personal information and agrees to terms and conditions	The system contacts the school for verification of .edu mail
3	The school verifies the .edu mail	The system creates the users account
4	The users account is sent to database	The database stored the account information

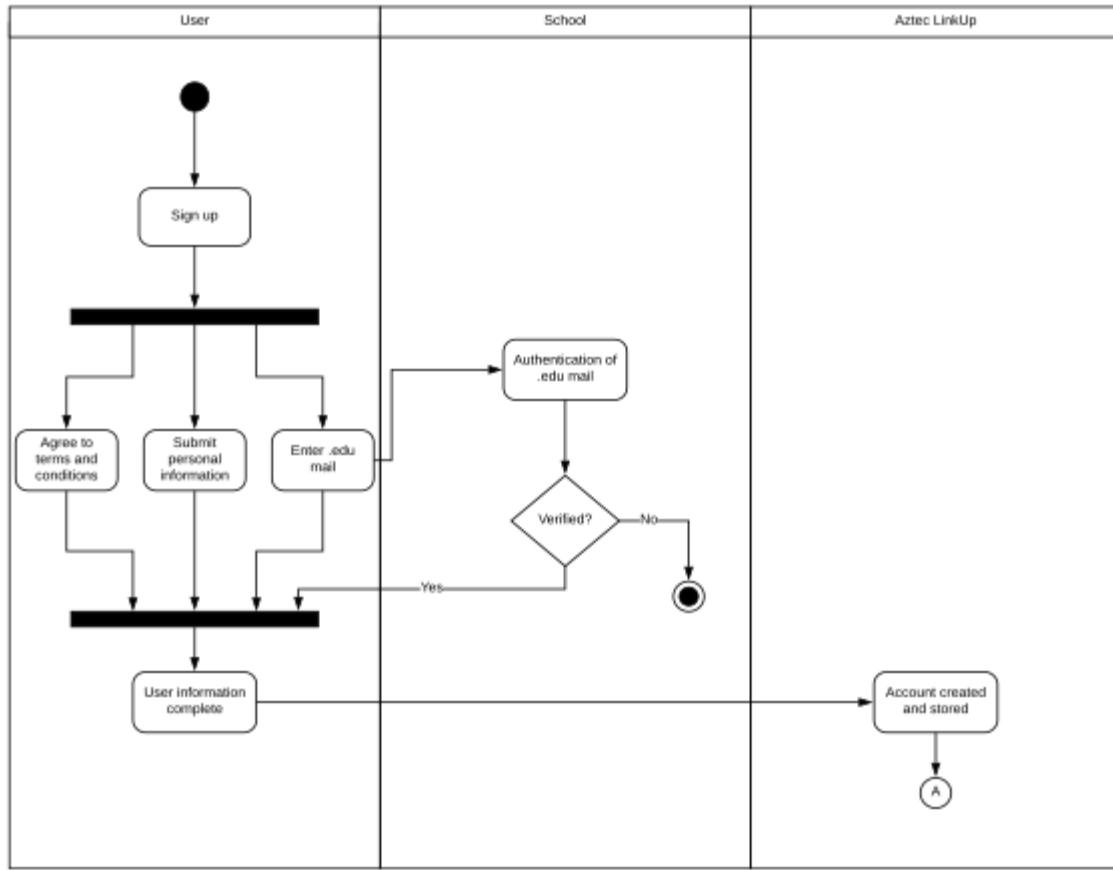
### Alternate Flow

Alt	User Actions	System Actions
1	The school does not verify the users .edu mail	The account is not created, and help is provided to solve the problem

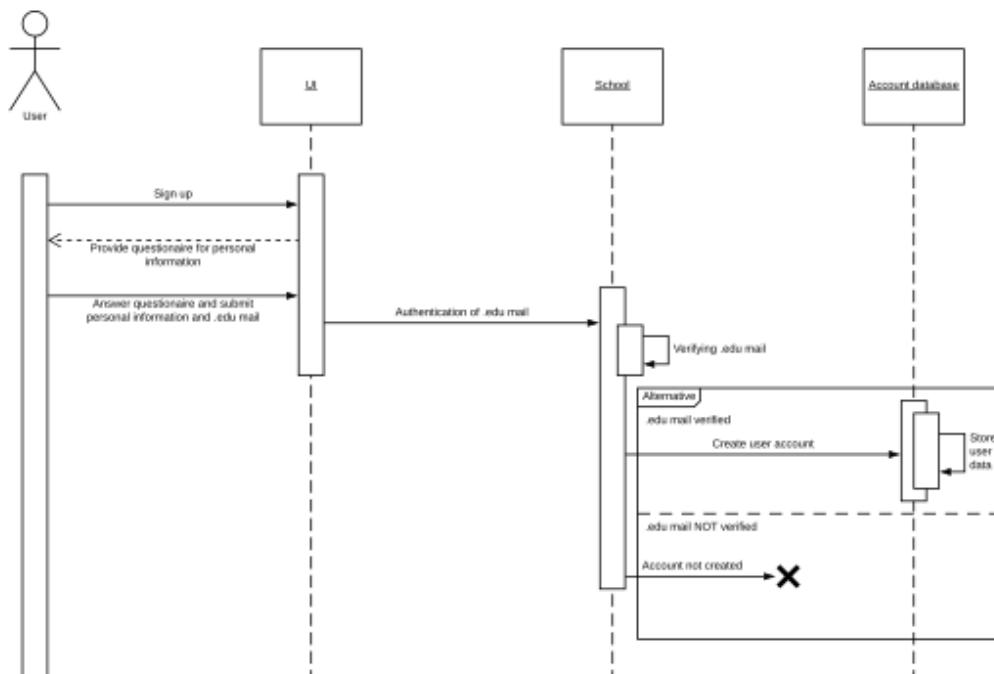
### Use Case Notes

Special Requirements	The non-functional requirements for this use case include: Capacity, performance, response time, storage, data integrity, security, availability, reliability, business rules and environment.
Business Rules	A student must have a valid .edu mail to create an account.

**Activity Diagram for process: Account Management.** Simplify and improve any process by clarifying Activity Diagram Use Case. Illustrates a business process or workflow between users and the system.

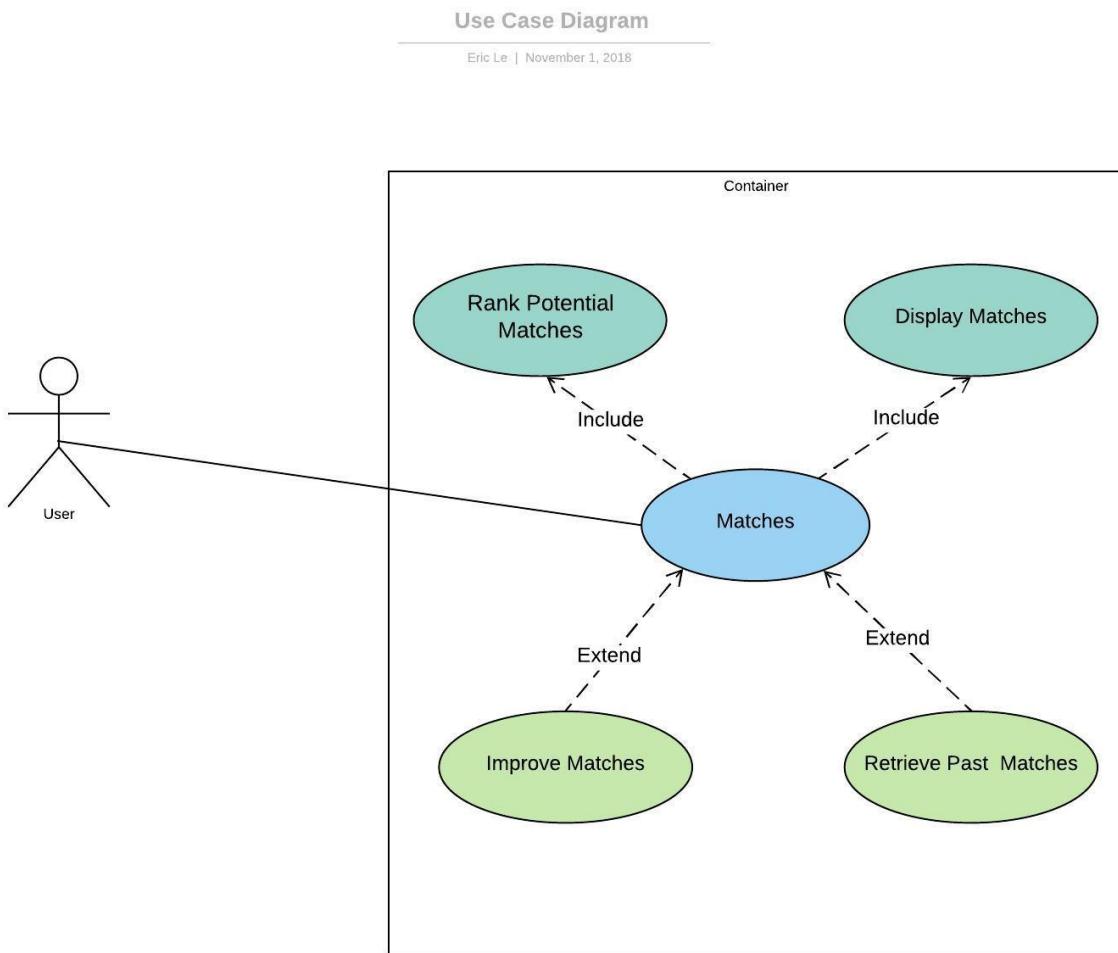


**Sequence diagram for process: Account Management.** A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario



### 3.2.2 Use Case 2 and its Process Model (Matching)

#### USE CASE 2 DIAGRAM - Matching



**The key functional requirements are:**

1. Business Rules
2. Legal or Regulatory Requirements
3. Authentication
4. Authorization Levels
5. Audit Tracking - Logging
6. Certification Requirements

# USE CASE NARRATIVE / SPECIFICATIONS

Project Name: Aztec LinkUp

Author: Eric Le

Use Case ID:	< Aztec LinkUp Matching 2.0 >	Version :	<1.0>
Use Case Name:	< Matching >	Date:	10/29/18
Use Case Objective:	< Match different users that share common interest and similarities >		
Primary User/Actor:	<Students attending SDSU that are looking for friends / study buddies >		
Trigger:	<A trigger that stimulates use case within the application would be the option to accept / decline matches >		
Use case associations	< Includes/ Extends: Rank Matches , Improve Matches , Display Matches, Retrieve Past Matches>		
Preconditions:	<User must enter personal interest and account information in order for this use case to begin.>		
Post-conditions	<The system displays 10 potential matches to the user >		

## Basic Flow

Step	User Actions (Inputs)	System Response (Outputs)
1	<"User Enters Personal Information">	<Saves User Responses and stores information in database>
2	<"User Enters Interests and hobbies ">	...
...	<Repeated as needed>	...

## Alternate Flow

Alt	User Actions	System Actions
1	< User declines Matches >	< Fix algorithm to display more relevant matches that pertains to user >
2		...
...		

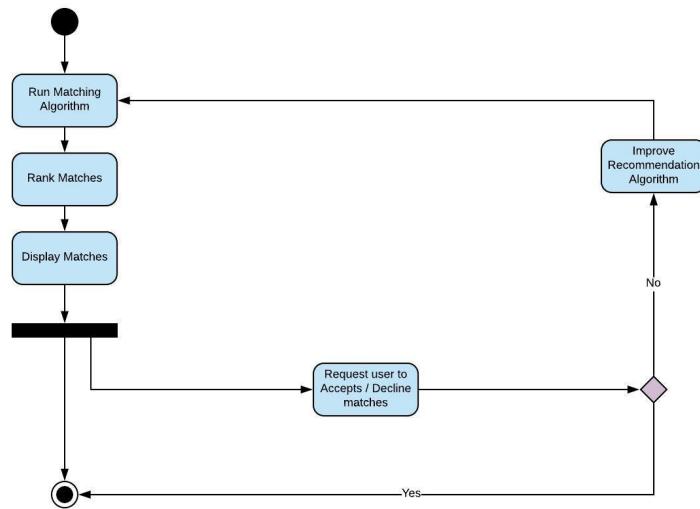
## Use Case Notes

Special Requirements	<Non functional requirement include performance , legal, security (private), scalability>
Business Rules	<Business Rule: you need to be a SDSU student to sign up > < the user can accept / decline matches> <the user should be notified of matches> <you must be logged in to view matches>

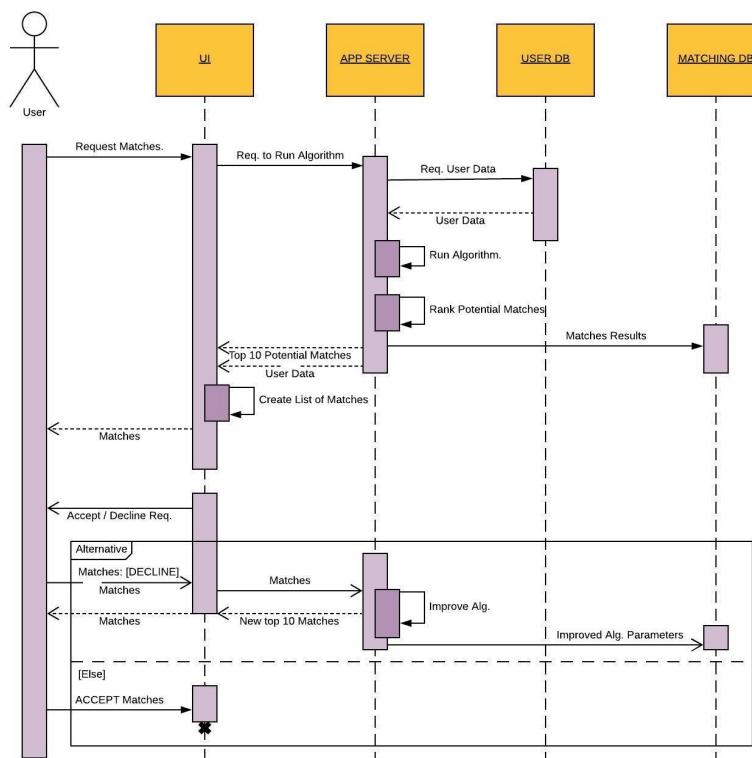
**ACTIVITY DIAGRAM- Matching.** Simplify and improve any process by clarifying Matching Use Case. Illustrates a business process or workflow between users and the system.

### ACTIVITY DIAGRAM

Eric Le | November 1, 2018

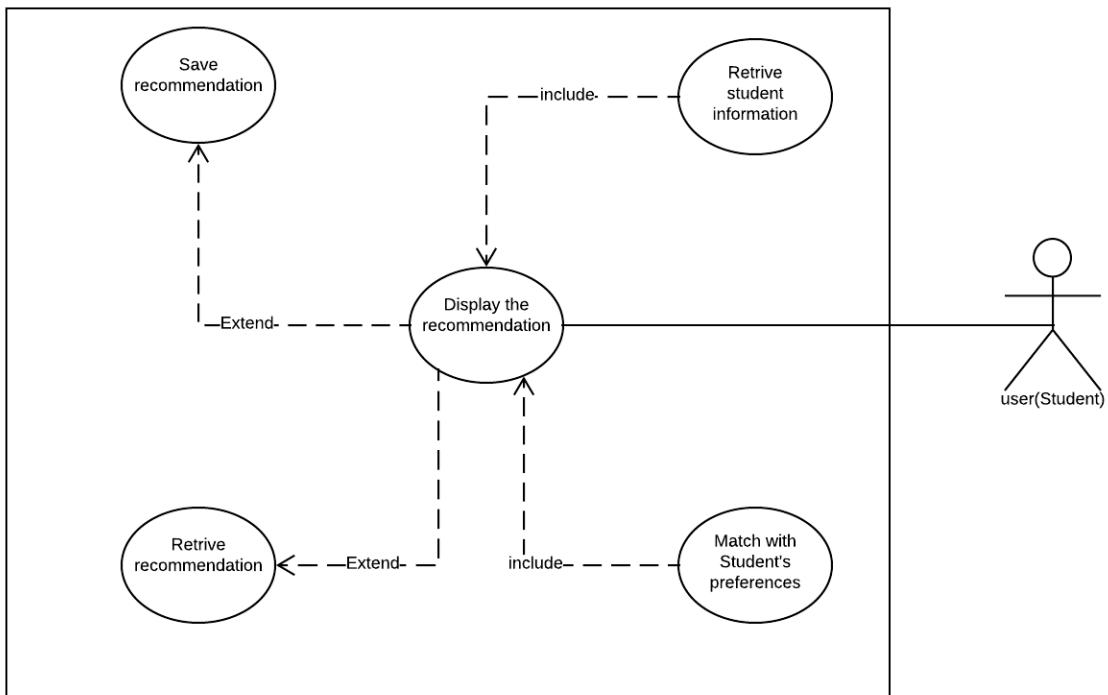


**SEQUENCE DIAGRAM - Matching.** A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.



### 3.2.3 Use Case 3 and its Process Model

**USE CASE 3 DIAGRAM - Recommendation**-representation of a user's interaction with the system that shows the relationship between the user and the different use of the system. This user case model shows the actor(student) is requesting recommendation and the system is gathering and sorting the data to meet the request.



## USE CASE NARRATIVE / SPECIFICATIONS

Project Name: \_link-Up\_\_\_\_\_ Author: \_Zenah Shamo\_\_\_\_\_

Use Case ID:	<3.3	Version :	<1.0>
Use Case Name:	<Recommendation	Date:	11/1/2018
Use Case Objective:	< Display Recommendation to the user		
Primary User/Actor:	Student /the system		
Trigger:	Student click on the "Recommendation"		
Use case associations	Retrieve Data		
Preconditions:	student enter their information		
Post-conditions	Display recommendation / no recommendation		

### Basic Flow

Step	User Actions (Inputs)	System Response (Outputs)
1	Personal information	<display recommendation
2	Interest/activities	< no recommendation
3	Day/time	

### Alternate Flow

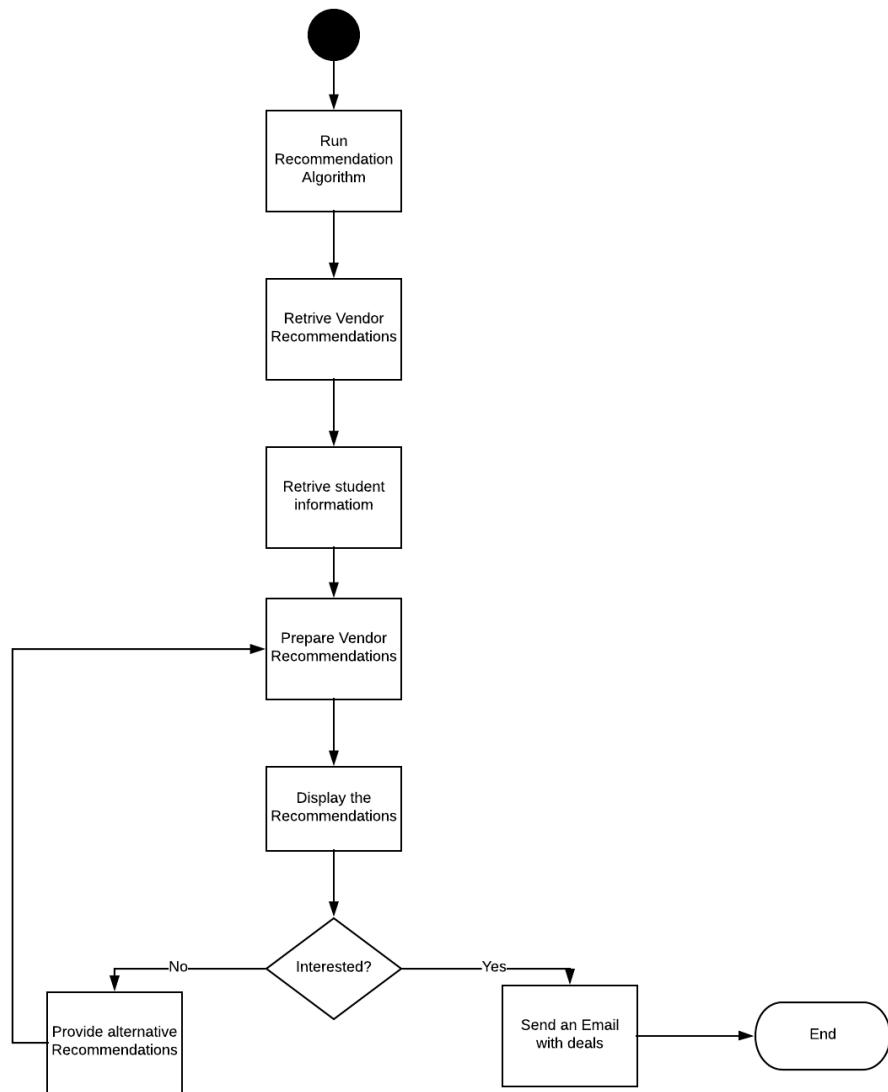
Alt	User Actions	System Actions
1	no recommendation	Enter more information

### Use Case Notes

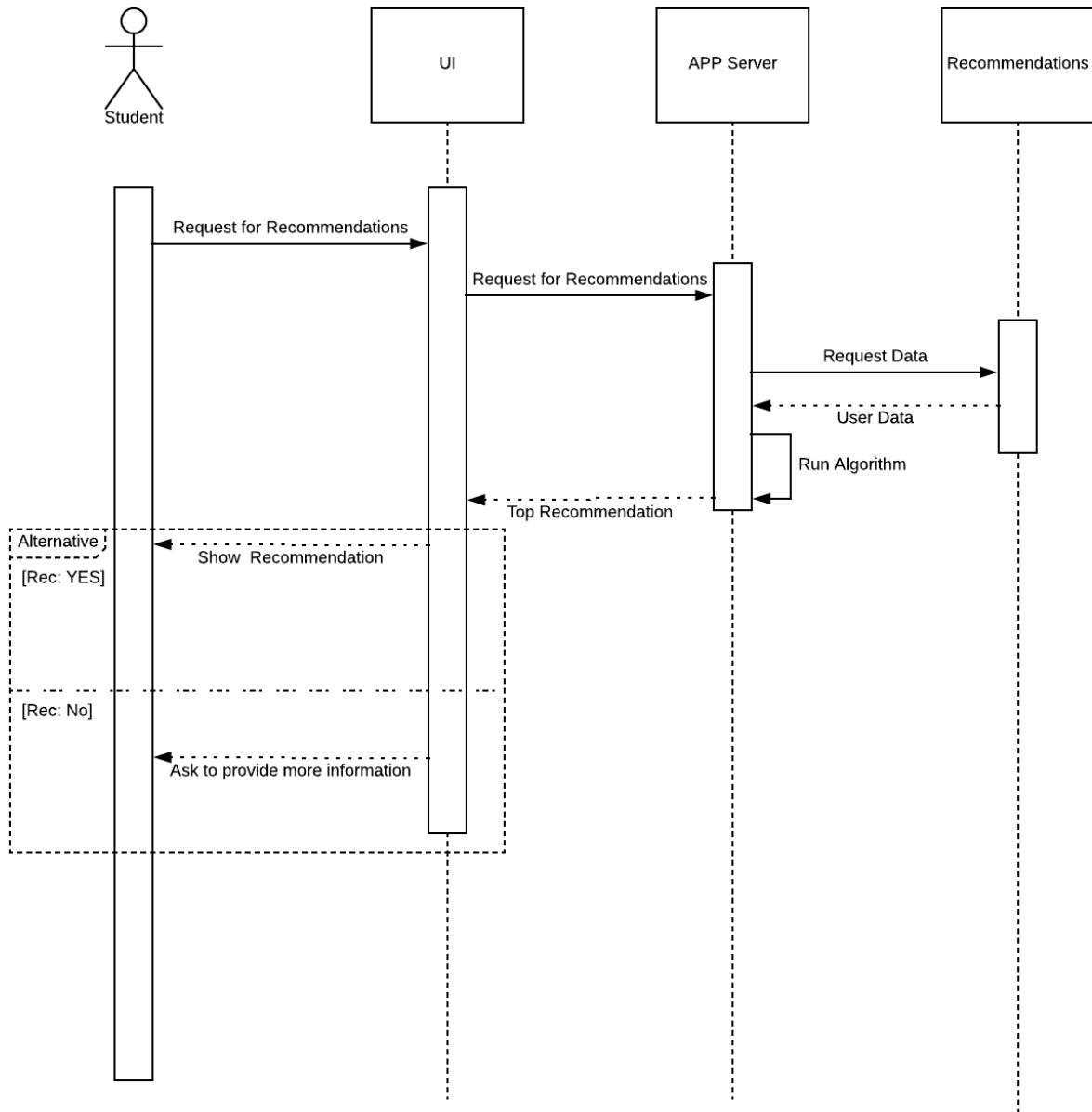
Special Requirements	student information shared with vendors
Business Rules	The dates requested for an activity must be updated

Reviewed and Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed and Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

**Activity Diagram- Recommendation.** Simplify and improve any process by clarifying Recommendation Use Case. Illustrates a business process or workflow between users and the system.

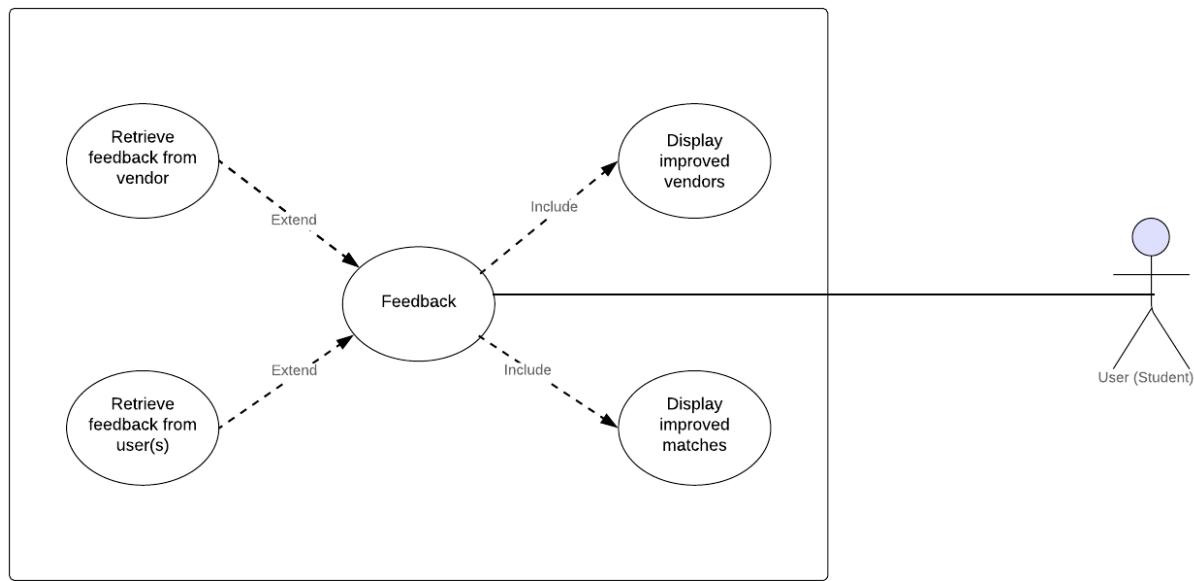


**SEQUENCE DIAGRAM-Recommendation.** A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.



### 3.2.4 Use Case 4 and its Process Model

#### USE CASE 4 DIAGRAM - Feedback



# USE CASE NARRATIVE / SPECIFICATIONS - Feedback

## USE CASE NARRATIVE / SPECIFICATIONS

Project Name: Aztec Link-Up

Author: Eric Ninh

Use Case ID:	4.1	Version:	<1.0>
Use Case Name:	Feedback	Date:	11/2/18
Use Case Objective:	Collect feedback from the user		
Primary User/Actor:	System/app asks user		
Trigger:	Every so often, application asks user for feedback to adjust algorithm to fit needs of the user.		
Use case associations	Retrieve data		
Preconditions:	User needs to consistently use application		
Post-conditions	Aggregated feedback goes into the database then reflects back onto the user as improved algorithm		

### Basic Flow

Step	User Actions (Inputs)	System Response (Outputs)
1	User fills out feedback form	Application periodically prompts user for feedback
2	<Repeated as needed>	Uses data to improve algorithm for user

### Alternate Flow

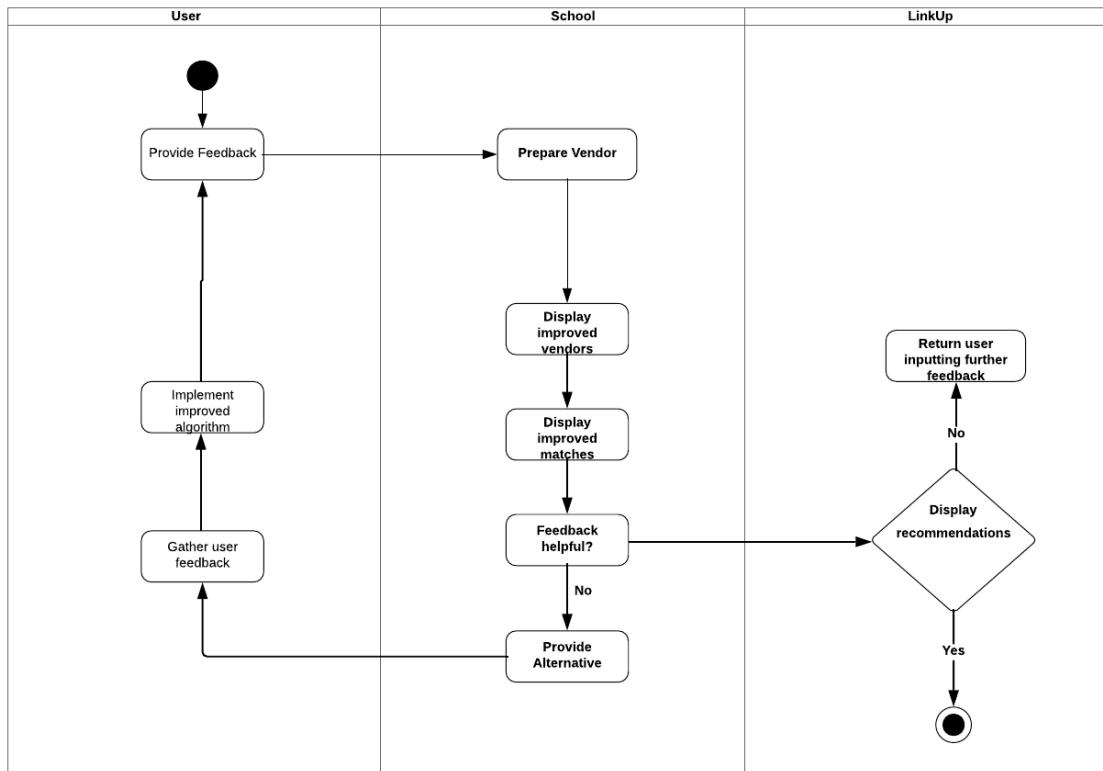
Alt	User Actions	System Actions
1	No recommendation	Enter more information
2		

### Use Case Notes

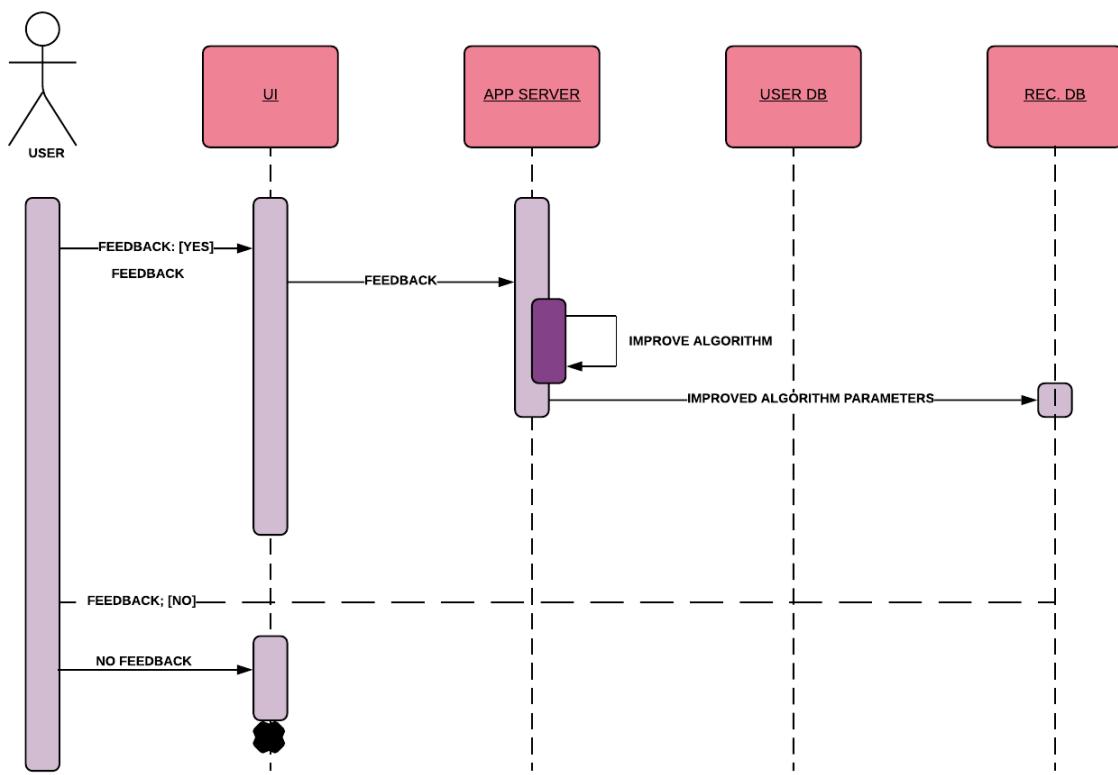
Special Requirements	Student shares information with vendors
Business Rules	The dates requested for an activity must be updated

Reviewed and Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed and Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

**Activity Diagram - Feedback.** Simplify and improve any process by clarifying Feedback Use Case. Illustrates a business process or workflow between users and the system.

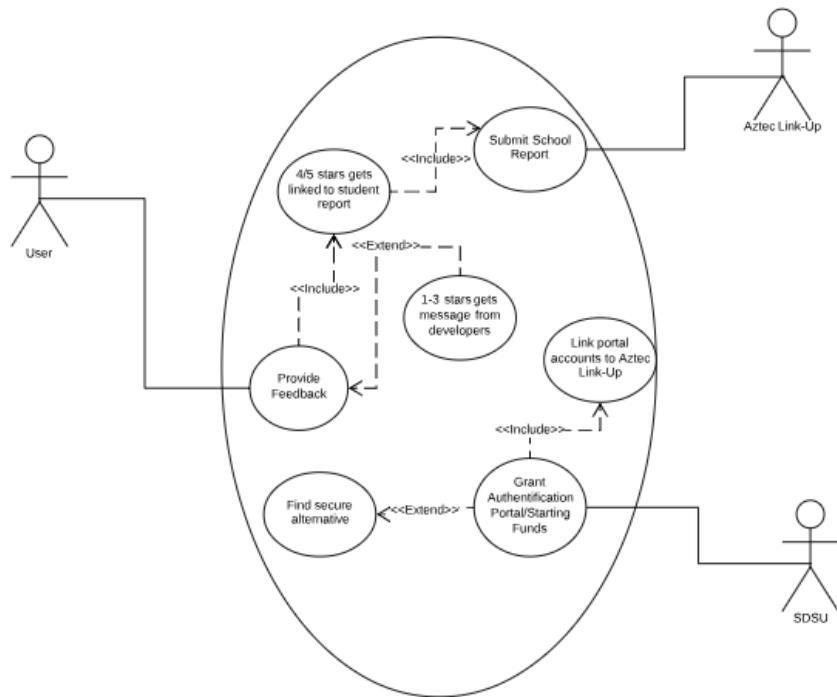


**SEQUENCE DIAGRAM - Feedback.** A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.



### 3.2.5 Use Case 5 and its Process Model

## USE CASE 5 DIAGRAM - School Report



## USE CASE NARRATIVE / SPECIFICATIONS

Project Name: Link Up Author: Borhan Assadi

Use Case ID:	<Link Up Student Report 5.0>	Version:	<1.0>
Use Case Name:	<Report>	Date:	10/29/18
Use Case Objective:	< Share data feedback with University >		
Primary User/Actor:	<University officials analyzing student feedback report for decision making>		
Trigger:	<A trigger that stimulates use case within the University would be the option to accept/deny portal authorization.>		
Use case associations	< Includes/ Extends: Verifying portal authorization>		
Preconditions:	<Translate Feedback Data to report>		
Post-conditions	<When portal authorization has been gained, students may verify student eligibility and create account>		

### Basic Flow

Step	User Actions (Inputs)	System Response (Outputs)
1	<Link Up gathers student feedback>	<System compiles & sorts feedback taking positive>
2	<Link Up accrue statistics that support feedback>	<System analyzes feedback & creates statistics supporting feedback>
3	<Link Up sends profit/cost analysis with feedback report>	<System sends report to University>
4	<University grants access to authorization portal>	<University reviews report and authorizes use of portal>

### Alternate Flow

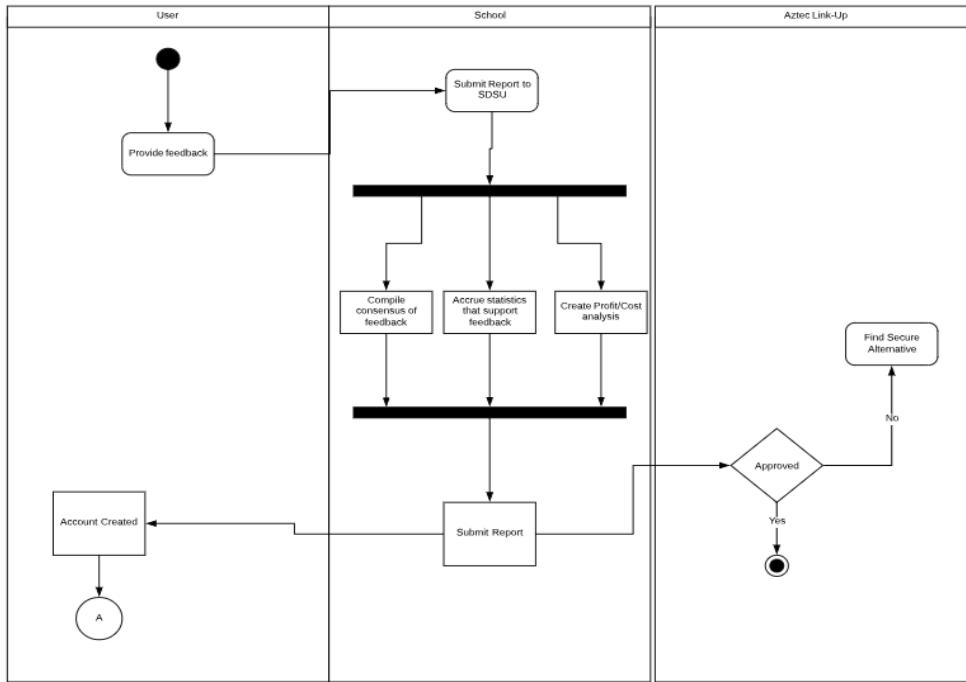
Alt	User Actions	System Actions
1	< The University does not allow portal authorization >	< Verify students' enrollment without school through school identification card >

### Use Case Notes

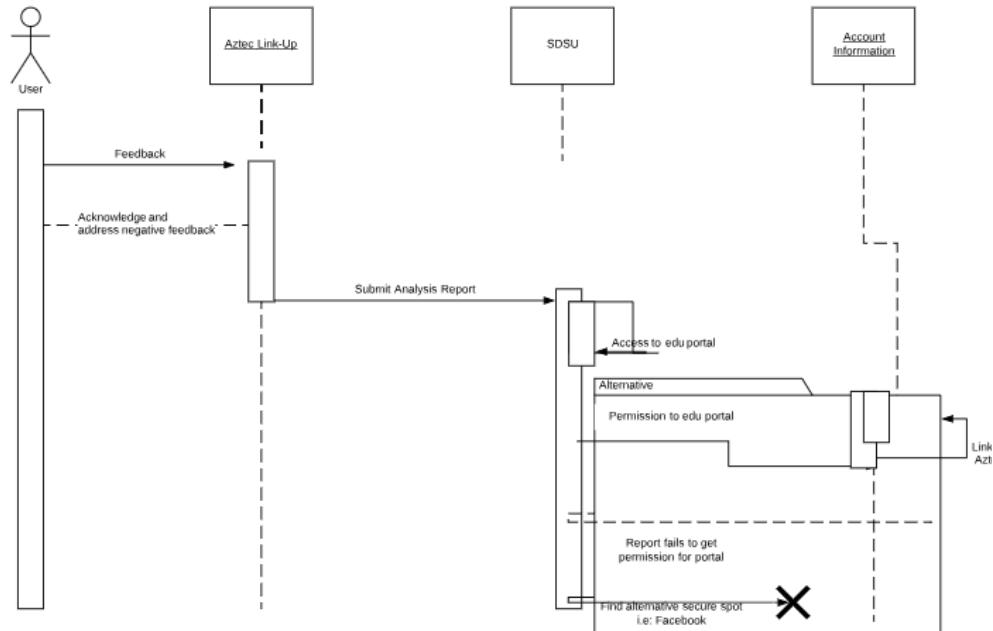
Special Requirements	<Non functional requirement include performance , legal, security (private), scalability>
Business Rules	<Business Rules: Must be profitable>

Reviewed and Approved by: \_\_\_\_\_ Date: \_\_\_\_\_  
Reviewed and Approved by: \_\_\_\_\_ Date: \_\_\_\_\_

**Activity Diagram: Student Report.** Simplify and improve any process by clarifying School Report Use Case. Illustrates a business process or workflow between users and the system.



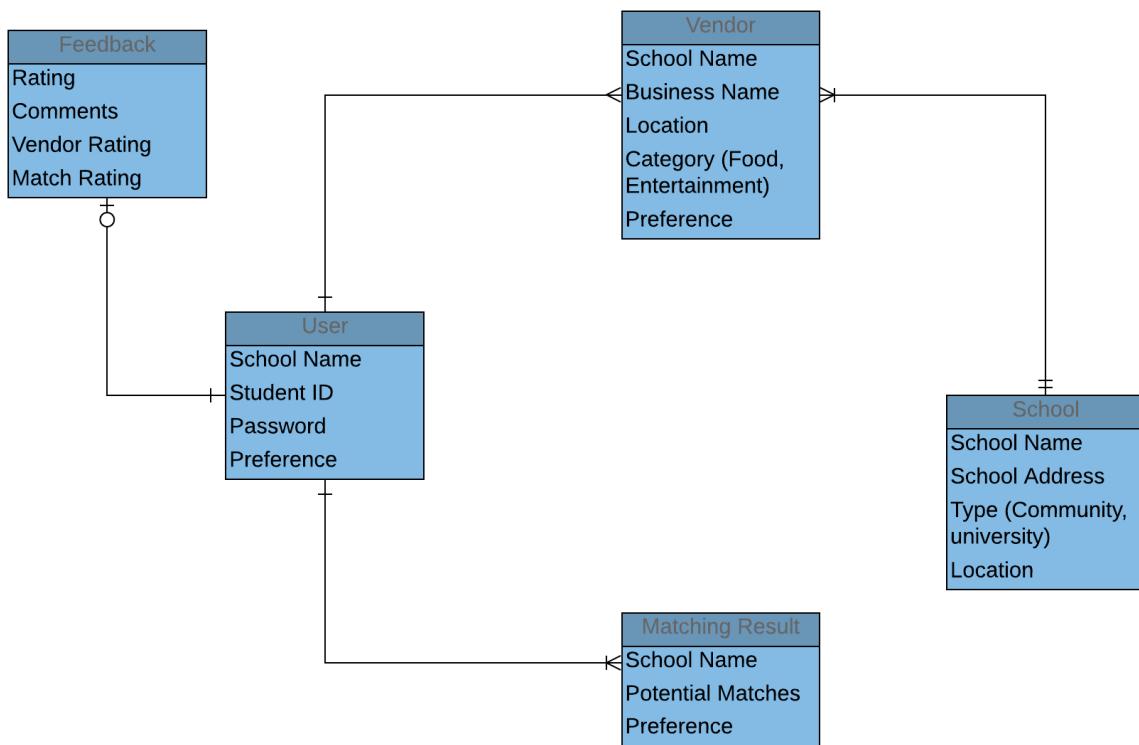
**Sequence Diagram: Student Report.** A sequence diagram shows object interactions arranged in time sequence. It depicts the objects and classes involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario.



## 4. SYSTEM ARCHITECTURE

### 4.1 Data Model

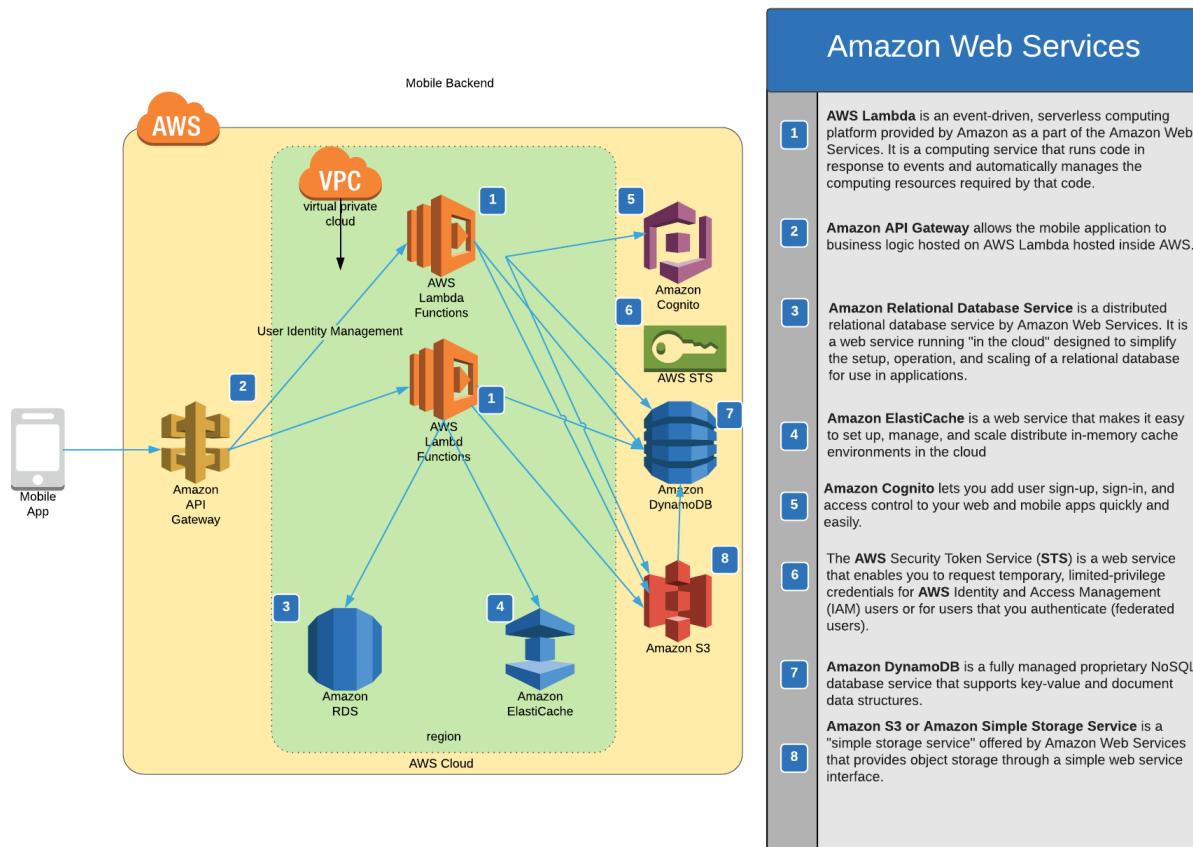
#### 4.1.1 Entity Relationship Diagram (ERD)



#### 4.1.2 Data Model Specifications

The Entity Relationship Diagram begins with the User entering personal data to make an account. That data is compiled and sent to the User and School entity which contains information from the User data and then sends the data to the Vendor and Matching Result database and also to the user to be viewed. In addition, it is processed into the Matching Result entity and formatted into the Vendor entity which is then sent to the user to view.

## 4.2. Cloud Architecture



### 4.2.1 Network & Web Tier

The main component of the Network & Web Tier is the Amazon API Gateway. This gateway serves as the basis for the user's interaction within the LinkUp application. By connecting to the AWS Lambda server, the user is able to interact with the other tiers of Amazon Web Service such as application, database, and authentication tiers. Through the use of AWS Lambda they are able to create accounts, login, matching and vendor data, access recommendations, all stored on the Amazon DynamoDB. All functions processed with the API Gateway are also housed in the Amazon Virtual Cloud for extra security.

#### **4.2.2 Application Server Tier**

This tier is where the bulk of the computations and processing occurs within the app, which contains two different AWS Lambda computing platforms. The first AWS Lambda is directly connected to the Amazon API Gateway and works in user identity management for the user. It provides processing that facilitates the processing for login and account creation and also sends data to one of the S3 storage devices. The Second Lambda platform handles the bulk of the processing within the app, aided by Amazon ElastiCache to process data faster on demand. Like the first Lambda, this is also connected to the S3 storage and DynamoDB in order to provide visual data to the user. Like all of the other Lambda platforms, it is ultimately connected to the main DynamoDB.

#### **4.2.3 Database Tier**

This tier makes use of the Amazon S3 simple storage device, Amazon DynamoDB as well as Amazon RDS. All user data and account data is first stored in the Amazon S3 in order to be further processed by the RDS and DynamoDB databases. The Amazon RDS contains the relational database that facilitates the flow of the entities as documented in the Entity Relationship Diagram. This RDS makes sense of all of the inputs of the application which helps make recommended matches and vendors for the user. The main database of this AWS system is the Amazon DynamoDB, which contains the processed data for the entire system. Every AWS Lambda is connected to this and without it there would be no secure spot to store all user data as well as any feedback data. These databases are very important for providing any sort of data that the user and system needs in order to function properly.

#### **4.2.4 Authentication Tier**

This tier handles logins and account creation. The Amazon Cognito device first allows new users of the app to register or sign up for the app based on their school specific .edu email and school code which provides them with a password to be used further on in the authentication tier. The AWS Security Token Service is what allows the users to connect to the interface using their login credentials from Amazon Cognito. By typing in their school code, school specific .edu email, and password they are able to verify that they are indeed a member of the school and can access data and recommendations. The data are then sent to the Amazon S3 storage device and also later stored in the DynamoDB. Also, authentication in the Amazon Virtual Cloud which assures the data and functions that may contain sensitive data have an additional level of security and privacy.

#### **4.2.5 Security Configurations**

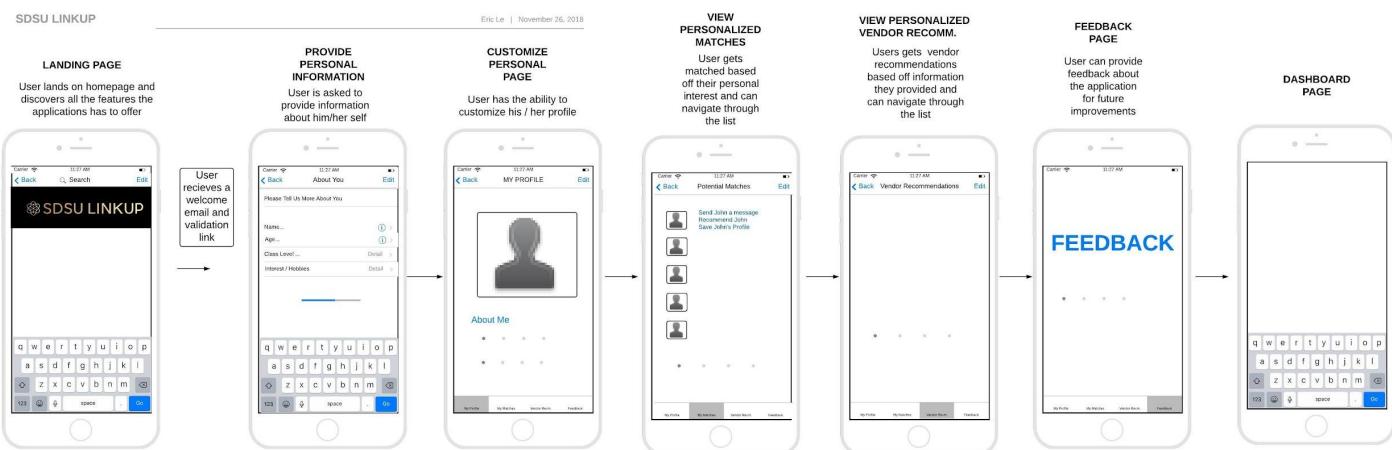
This tier utilizes the AWS Security Token and Amazon Cognito, ensures that users are securely logged in with proper and secure credentials. Coupled with Amazon S3 and DynamoDB, user data is secure and private and they can use the application. This works in unison with the entire AWS cloud architecture of LinkUp.

## 5. USER INTERFACE AND USER EXPERIENCE

### Introduction - Fronted Design

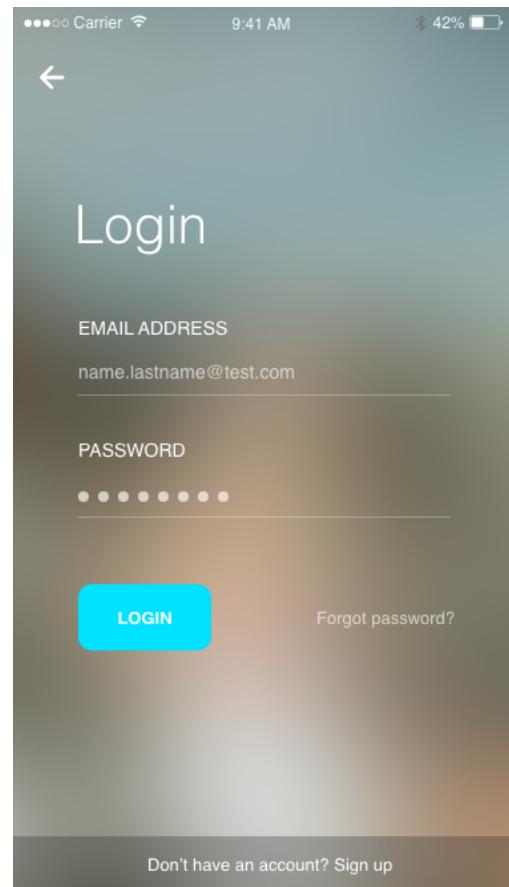
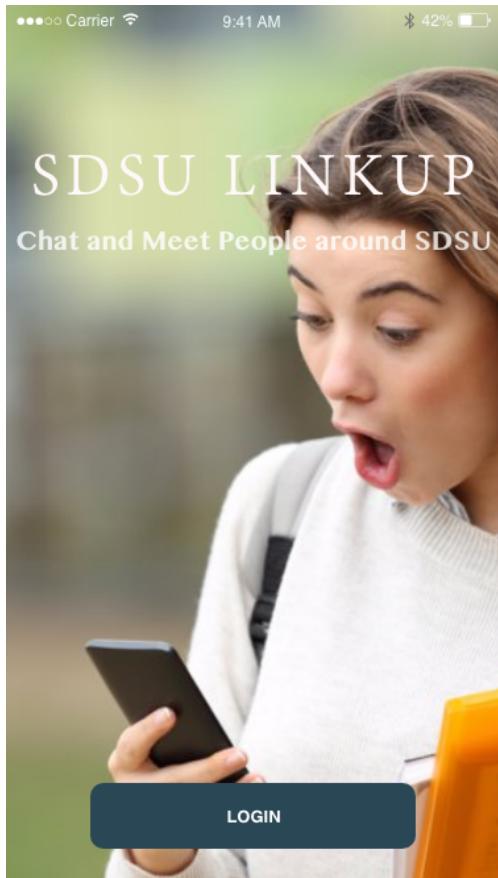
Welcome to LinkUp, the best on campus application that allows you to meet , talk and hang out with other college students! College students are always on their phone so we wanted to create a mobile application that is fast and easy to use for students. Features of the applications include your own personalizable profile, matching with potential new friends, having private conversations and even vendor recommendations so you can grab a bite with your new friends! This application interface was designed specifically for YOU with easy navigation and customization, making new friends will be a breeze! So what are you waiting for? Sign up with your SDSU email now and meet your new friends!

**5.1 Dialogue Diagram-** Dialogue diagrams are used to visually map the steps in the user tasks. Like the user tasks, the focus is on the user's interaction with the system. By drawing the steps involved in the interaction, actions that may have been missed out are discovered.



### 5.2 User Experience and User Interface (Prototypes)

- The user interface is really friendly and easy to navigate between. Starting at the login page, the user has the ability to either input their login information if they are a returning user or create a new account if they are a new user. At the homepage the user will be able to customize their own profile, find potential new friends (Social Network), chat with friends , offer feedback and find vendor recommendations at a discounted price.



Carrier 9:41 AM 42%

Signup

CHOOSE A USERNAME  
SDSUStudent

YOUR AGE  
21

EMAIL ADDRESS  
name.lastname@test.com

PASSWORD  
• • • • •

**SIGNUP** Already a member?

Carrier 9:41 AM 42%

Forgot password

Enter your email address, we'll send you the instructions on how to change your password

EMAIL ADDRESS  
name.lastname@test.com

**SEND**

Carrier 9:41 AM 42%

John  
EDIT PROFILE

- Social Networking
- Message Your Friends
- Feedback
- Grab a Bite To Eat
- Settings

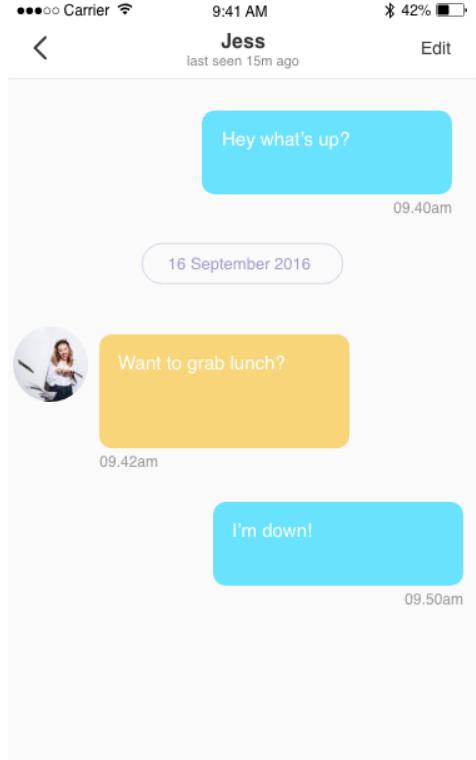
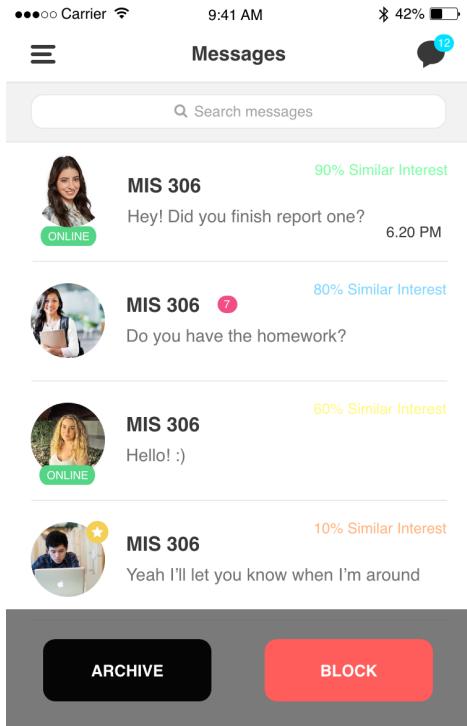
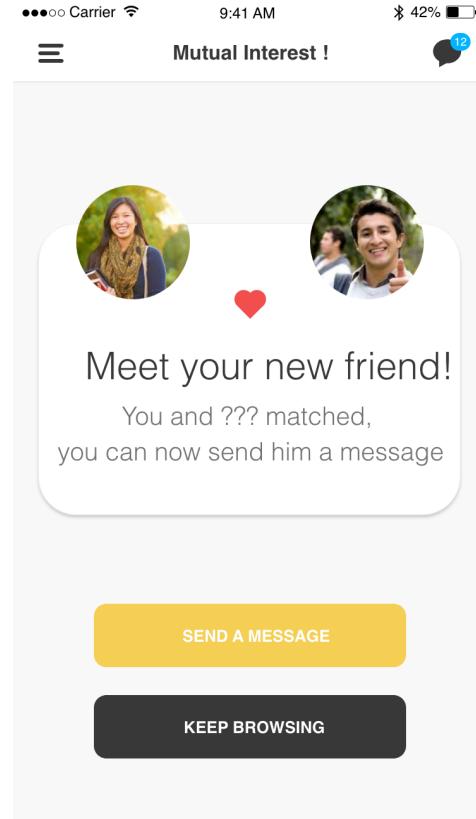
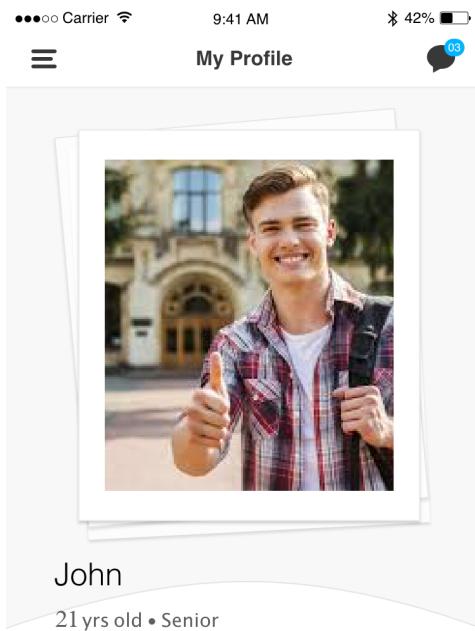
**SDSU LINKUP**

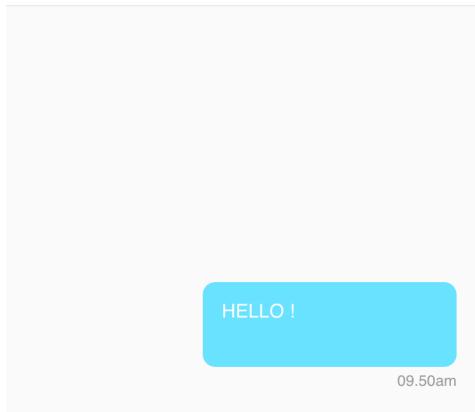
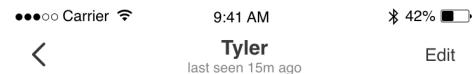
Carrier 9:41 AM 42%

Potential New Friends

Aaron  
21 yrs old • Senior

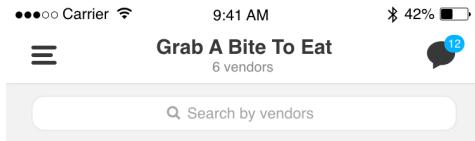
**X** **Heart**





I NEED HELP WITH REPORT 5

SEND



Rubio's  
Added on 15 Sep



The Habit  
Added on 12 Sep



Wings n Things  
Added on 3 Sep



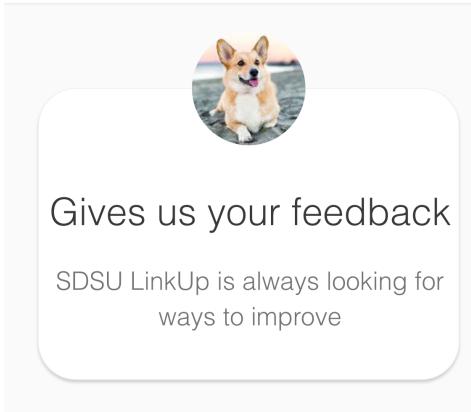
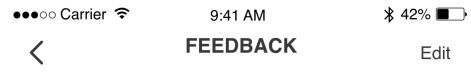
Subway  
Added on 22 Aug



Pizza Hut  
Added on 21 Aug

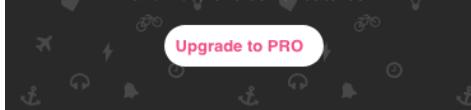
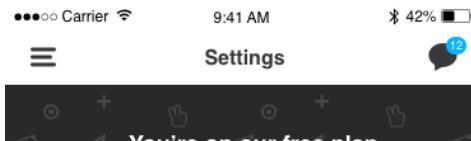


Jack in the Box  
Added on 12 Aug



The application freezes wheh..

SEND



GENERAL

My current location San Diego, CA

Search radius 50km

Grade preference Junior

PRIVACY

Push notifications

Incognito browsing

## 6. IMPLEMENTATION AND BUDGET

### 6.1. Development and Test Plan

Below are the main milestones and tasks in the deployment and launching of our app listed along with the category, name and owner for each task as well as start date, end date and any dependency that might be.

Task ID	Task Category	Task Name	Task Owner	Start date	End date	Dependency
1.0	Coding	Alpha model	3 <sup>rd</sup> party company	1/1/19	1/20/19	
1.1	Coding	Beta model – Ready for pilot test	3 <sup>rd</sup> party company	1/21/19	1/30/19	1.0 adjusted
1.2	Coding	Production Build	3 <sup>rd</sup> party company	2/1/19	2/10/19	1.1 adjusted
2.0	Functional requirements	Formulation and creation of functional requirements	LinkUp	1/1/19	2/1/19	
3.0	Testing	Development of Master Test Plan	3 <sup>rd</sup> party company	2/1/19	2/10/19	

3.1	Testing	Completion of Master Test Plan	3 <sup>rd</sup> party company	2/11/19	2/28/19	3.0 done
4.0	Non-functional requirements	Formulation and creation of non-functional requirements	LinkUp	2/1/19	3/1/19	
5.0	Installation	Deployment of our app	LinkUp	3/1/19	4/1/19	3.1 done
6.0	Documentation	System documentation	LinkUp	1/1/19	2/28/19	
6.1	Documentation	User documentation	LinkUp	1/21/19	2/28/19	
7.0	Support	On-going support	LinkUp	4/1/19	-	5.0 done
8.0	Maintenance	On-going maintenance	3 <sup>rd</sup> party company	4/1/19	-	5.0 done

Our Master Test Plan will include details on how and when we are going to test our system before deploying it. After coding the alpha and beta models of our application, we will have a production build, or a Gold Master that will be our stable model and ready for release. The testing of our system will be outsourced to a third party that specializes in testing applications like ours. This is done to make sure all testing is done professionally. We expect the company

who runs all tests to record and document everything and summarize this in reports that we will have access to. This way we can always keep track of how the testing is going without having to spend time on this ourselves and focus on the feedback we get to make our application even better. Some of the most critical things that need to be tested are how well the matching functions work and how recommendations are being made to the right users. Besides this, it is important to have documented both guides to the professionals and end-users, so everybody involved knows how to use our application.

When all test results look satisfying, we will use San Diego State University as a pilot test. This means we will have a small number of students at SDSU testing our application and giving us feedback before we launch the application fully, and we will cover the three main scenarios: the typical system use, a critical system use and abnormal system use. The students used in the pilot test must be representative of the whole college to give us a good picture of the broader perspective of end-users. The students chosen will give feedback on how they think the matching is done correctly in a way that they find other users who have some of the same interests and whether they believe the recommendations that are suggested fits their profile. We want to have at least a 90% fit with these critical points of control before it is satisfying and seen as a success. When the test company has run the tests and we are giving the report with the results back, we want to adjust our app according to the feedback in the pilot test. After the deployment of our application we want to have continuous testing to make sure our system runs satisfyingly.

## **6.2 Public Launch, Installation or Deployment Plan**

We plan on deploying our application to both Android and Apple functioning smartphones. We will deploy our system similar to the single-location method. This means we will start off with launching our app at San Diego State University, and from there we will expand to other colleges around the nation with the feedback from the continuous experience we get. The thing that makes our launch different from the original single-location method, is that we at first don't have an existing system that needs replacement. After we implement the application at San Diego State University, we will use the original version of the method. An advantage of using this method is that we will be able to adjust our system every time we deploy our application to a new college, and in that way, we will always have an updated system that contains the latest feedback and adjustments. One of the downsides with using this deployment method, is that it can slow things down if you want to deploy our application in more than one college at a time. That can be a problem in the long run, but at the same time, we expect to have a really stable application after the first colleges are using our application which will make it possible for us to deploy our application to several colleges at once.

## **6.3 Maintenance Plan**

When our application is working and deployed at the colleges, we will need technical system support that will keep our system up and running with new versions. There must also be support available for the end user in case a problem occurs. Our strategy is to always be there

for our users with support, so that our application will be available to use at all times. Even though this can be expensive, we expect these costs to outweigh the benefit of satisfied users.

Along with support, we will also need monitoring of our system. This is a very critical and extremely important part of the role of all applications, including ours. Monitoring will allow us to always be ready for adjustment to problems with our system. In this part of the maintenance of our system, we will be using all kinds of system maintenance, which includes preventive, adaptive, corrective and perfective maintenance. We will be using the combined strategy for maintenance personnel, where the same personnel as the ones that developed the application also does the maintenance. We will be using this strategy to take advantage of the knowledge the developers possess.

## **6.4 Budget**

The project budget is shown below:

PROJECT BUDGET PLAN WORKSHEET: ESTIMATED PROJECT LIFE CYCLE COST										
Project Title: LinkUp						Project Number: 1				
Project Manager: Borhan Assadi						Anticipated Project Start Date: 1/1/19				
Project Owner: Zenah Shamooh, Malene Frandsen, Eric Le, Eric Ninh & Borhan Assadi						Date Prepared (Last Update): 12/10/18				
Hardware & Cloud Services	Source	Quantity	Unit Price	Year 1 (Implementation)	Year 2	Year 3	Year 4	Year 5	Total Cost	
Computing or App Servers (AWS EC2)	AWS	12.00	\$ 407.02	\$ 4,884.24	\$ 5,861.09	\$ 7,033.31	\$ 8,439.97	\$ 10,127.96		
Database (AWS RDS)	AWS	12.00	\$ 336.72	\$ 4,040.64	\$ 4,848.77	\$ 5,818.52	\$ 6,982.23	\$ 8,378.67		
Network (Route 53)	AWS	12.00	\$ 0.90	\$ 10.80	\$ 12.96	\$ 15.55	\$ 18.66	\$ 22.39		
Cloud Storage (AWS S3)	AWS	12.00	\$ 0.78	\$ 112.32	\$ 134.78	\$ 161.74	\$ 194.09	\$ 232.91		
Other Cloud Services	AWS ML	12.00	\$ 89.00	\$ 1,068.00	\$ 1,281.60	\$ 1,537.92	\$ 1,845.50	\$ 2,214.60		
<b>Total Hardware Costs</b>				<b>\$ 10,116.00</b>	<b>\$ 12,139.20</b>	<b>\$ 14,567.04</b>	<b>\$ 17,480.45</b>	<b>\$ 20,976.54</b>	<b>\$ 75,279.23</b>	
Software										
Application Software Development Contract		12	\$ 2,500.00	\$ 30,000.00						
Application Maintenance Contract				\$ 9,000.00	\$ 9,000.00	\$ 9,000.00	\$ 9,000.00	\$ 9,000.00		
Other/Miscellaneous										
<b>Total Software Costs</b>				<b>\$ 39,000.00</b>	<b>\$ 9,000.00</b>	<b>\$ 9,000.00</b>	<b>\$ 9,000.00</b>	<b>\$ 9,000.00</b>	<b>\$ 75,000.00</b>	
Personnel										
Cloud Administration per server	IT SP II	1000	\$ 53.23	\$ 53,230.00	\$ 54,826.90	\$ 56,471.71	\$ 58,165.86	\$ 59,910.83		
Application Administration & Customization	IT SP II	2550	\$ 53.23	\$ -	\$ 135,736.07	\$ -	\$ -	\$ -		
End user Training	IT SP II	150	\$ 53.23	\$ 7,984.50	\$ 8,224.04	\$ 8,470.76	\$ 8,724.88	\$ 8,986.63		
Knowledge Base/Documentation	IT SP I	450	\$ 43.14	\$ 19,413.00	\$ 19,995.39	\$ 20,595.25	\$ 21,213.11	\$ 21,849.50		
Help Desk Support	IT SP I	550	\$ 43.14	\$ 23,726.14	\$ 24,437.92	\$ 25,171.06	\$ 25,926.19	\$ 26,703.98		
Project Management	IT SP III	3500	\$ 75.60	\$ 264,606.56	\$ 272,544.76	\$ 280,721.10	\$ 289,142.74	\$ 297,817.02		
Legal Consulting	IT SP II	300	\$ 53.23	\$ 15,968.95	\$ 16,448.02	\$ 16,941.46	\$ 17,449.70	\$ 17,973.19		
Other Consulting (IT, HR, Marketing...)	IT SP I	250	\$ 43.14	\$ 10,785.00	\$ 11,108.55	\$ 11,441.81	\$ 11,785.06	\$ 12,138.61		
New FTEs Required in IT				\$ -	\$ -	\$ -	\$ -	\$ -		
<b>Total Personnel Costs</b>				<b>\$ 395,714.15</b>	<b>\$ 407,585.58</b>	<b>\$ 555,549.22</b>	<b>\$ 432,407.54</b>	<b>\$ 445,379.77</b>	<b>\$ 2,236,636.25</b>	
Advertising & Marketing										
Content Development		150	\$ 55.00	\$ 8,250.00	\$ 8,250.00	\$ 8,250.00	\$ 8,250.00	\$ 8,250.00		
Content Production		135	\$ 55.00	\$ 7,425.00	\$ 7,425.00	\$ 7,425.00	\$ 7,425.00	\$ 7,425.00		
Content Distribution		135	\$ 55.00	\$ 7,425.00	\$ 7,425.00	\$ 7,425.00	\$ 7,425.00	\$ 7,425.00		
<b>Total Advertising &amp; Marketing Costs</b>				<b>\$ 23,700.00</b>	<b>\$ 23,700.00</b>	<b>\$ 23,700.00</b>	<b>\$ 23,700.00</b>	<b>\$ 23,700.00</b>	<b>\$ 115,500.00</b>	
Operation Cost										
Third-party Technical Services		150	\$ 55.00	\$ 8,250.00	\$ 8,250.00	\$ 8,250.00	\$ 8,250.00	\$ 8,250.00		
Third-party Non-technical Services		100	\$ 55.00	\$ 5,500.00	\$ 5,500.00	\$ 5,500.00	\$ 5,500.00	\$ 5,500.00		
<b>Total Operation Costs</b>				<b>\$ 13,750.00</b>	<b>\$ 13,750.00</b>	<b>\$ 13,750.00</b>	<b>\$ 13,750.00</b>	<b>\$ 13,750.00</b>	<b>\$ 68,750.00</b>	
<b>Total Cost</b>				<b>\$ 481,680.15</b>	<b>\$ 465,574.78</b>	<b>\$ 615,966.26</b>	<b>\$ 495,737.99</b>	<b>\$ 512,206.30</b>	<b>\$ 2,571,165.47</b>	
<b>Life Cycle Cost</b>				<b>\$ 481,680.15</b>	<b>\$ 465,574.78</b>	<b>\$ 615,966.26</b>	<b>\$ 495,737.99</b>	<b>\$ 512,206.30</b>	<b>\$ 2,571,165.47</b>	

Our budget includes the following sections: Hardware & cloud services, Software, personnel,

advertising & marketing and operation costs. Altogether this budget shows a total cost of

ownership of approximately \$2.57 million.

We will be using Amazon Web Services for our hardware and cloud service. In particular we will

use AWS EC2 for the computing of our app, AWS RDS for the database, Route 53 for our

network, AWS S3 for the cloud storage and AWS Machine Learning for our other cloud services.

All the costs associated with AWS are estimated using the AWS Cost Calculator where the Large

Web Application is used.

Besides the hardware and cloud services from AWS, we will need to have a software developer

which also will need to maintain our software. These costs are shown in the section “Software”.

The biggest part of TCO in our project will be the personnel. We will need a lot of IT specialists to develop, create and most importantly maintain our system. More specifically we will need Cloud Administration, App administration and customization, End user training, Knowledge documentation, Help desk support, Project management and Legal & other consulting.

The major expense in our project will be the project manager that works way more and at a higher wage than everybody else. As the project manager will be the one in charge and making all the critical decisions, this is an expense that follows with a project like ours.

In order to expand our app to colleges, we will need a marketing department that both develops, produces and distributes our advertisement. These costs will occur in every single year our app is functioning to make sure our growth is constant.

We won't have any costs occurring from office rent or office operation costs because the parts LinkUp will be responsible for in the whole process will be done from SDSU, where free group rooms will be used. However we will need third-party technical and non-technical services. These costs are shown in the section "Operation costs".

It is always hard to budget for systems and applications in an ever changing world like ours, and therefore the budget for our project is subject to change. All costs in our budget are assumptions of wages and hours required for each task, as these also are highly likely to change.

## **APPENDIX A: PROJECT MANAGEMENT DOCUMENTATION**

### **Project Management Protocol**

#### **Team Agreement Group 5**

#### **Introduction**

The purpose of this team working agreement is to outline standardized expectations for our MIS 306 project concerning, but not limited to, the working relations and group structure among team members.

The members of the team are:

- ü Eric Le
- ü Zenah Shamoona
- ü Malene Frandsen
- ü Eric Ninh
- ü Borhan Assadi

#### **Communication**

Communication between team members shall be through Asana and weekly team meetings. Members will check their email once daily and reply when requested or necessary. Team meetings are scheduled every Monday evening before class at 3:00 PM. If a member cannot attend a team meeting, they must communicate to all members 24 hours prior to the meeting.

#### **Rules & Procedures**

- All ideas and directions will be kept open until the group makes a final consensus decision.
- Members of the team are expected to complete any and all tasks assigned to them by the due date.
- If unforeseen obstacles prevent task completion, this will be handled accordingly. Difficult or unclear responsibilities must be voiced to other team members swiftly so that they can be clarified or redefined.
- The group will create a timeline that includes dates for expected completion of work and other group objectives.

We will:

1. Regard conflict as normal and as an opportunity for growth.
2. Seek to understand the interests and desires of each party involved before arriving at answers or solutions.

3. Choose an appropriate time and place to discuss and explore the conflict.
4. Listen openly to other points of view.
5. Repeat back to the other person what we understand and ask if it is correct.
6. Acknowledge valid points that the other person has made.
7. Seek to find some common ground for agreement.

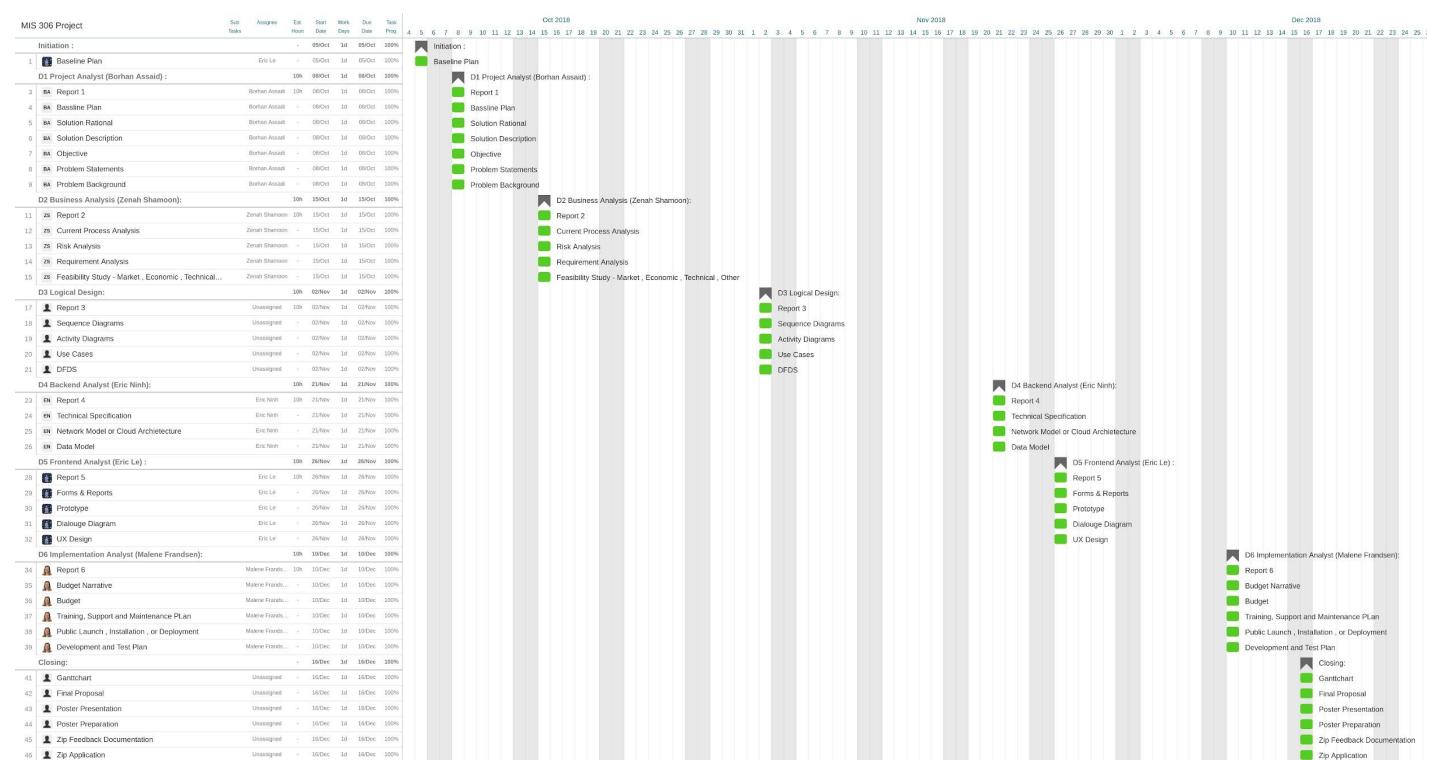
## Team Evaluation

- Evaluations of meetings will be conducted every Monday meeting.
- Evaluations will also be recorded at the end of the project.

## Summary

The ideas and requirements set forth in this working agreement are established so as to provide the best possible working conditions for completing the assigned project.

## Project Gantt Chart



## APPENDIX B: ZIP LAUNCHPAD APPLICATION & FEEDBACK

### ZIP Launchpad Application



1. **Where did you hear about ZIP Launchpad?** Class presentation
2. **Who told you about ZIP Launchpad?** Professor Abhari
3. **If you were referred by a student, staff, or ZIP Launchpad team, please insert their name(s).** Professor Abhari
4. **Which ZIP Launchpad events have you attended?** N/A
5. **Did you attend any of the following to get help on your application?**  
Application Workshop
6. **Tell us about the problem that you are trying to solve and who experiences it.**
  - a. Students often struggle to find like-minded people to make connections with on campus, making it difficult to enjoy the space they spend the most time in as college students. With SDSU LinkUp we wanted to target students with conditions like social anxiety, depression, stress or any disabilities that make it difficult for them to meet new people.
  - b. In addition, students may feel pressured to join clubs, student life, etc. to make friends and connections, but finding that one true connection with someone like-minded to you can help alleviate the stress of 'fitting in'. With our mobile application:
    - i. The user can make a personalized profile that's quick and easy to set-up
    - ii. The user can view matches/connections sorted by potential matches that are ranked by percentage as to how much two users have in common
    - iii. Any connections will be recommended vendors and events based on location around campus to attend

**7. Why is this a significant problem for your customer? Please provide supporting data and sources to back up your answers.**

- a. According to The American Freshman Study, 2014, "In 1987, 37.9% of incoming college students socialized at least 16 hours per week with friends while 18.1% spent five hours or less. By 2014, 18% of students reported spending at least 16 hours per week socializing with friends (an all-time low) whereas 38.8% dedicated five hours per week or less to socializing (an all-time high)."
- b. Aztec Link-Up will be able to better mental health and stress levels for our fellow students. Many students do not enjoy being alone, but it is difficult when students similar to them may be in the same situation but unsure how and where to make friends. We believe this provides our classmates a more efficiently and easier way to connect with peers. Students will be able to use our system to network with each other more effectively through a social app that is a blend of many different social apps.

**12. Tell us about a potential solution that will solve this problem for your customer.**

Aztec Link-Up will combat lonesomeness in a sense that users are not uncomfortable about the idea of making friends online, because they are fellow classmates. Students will enjoy the service because it is secure, girls can make plans with a guy and not worry about being kidnapped, guys can talk to girls and not worry about being catfished. But more importantly students can go back to just being sociable without facing anxiety. With this app we hope for students to not only socialize more but to exercise and study more as well.

**13. Problems can be solved in many ways, if you have other potential solutions to your problem please list them below.**

Other solutions could be:

- Create on-campus events that requires group collaboration
- Hosting study groups
- Offering Incentives for group cohesion ( Ex. Offering discounts if you have a party of more than 5 )

14. As of today, Link-Up has no competition whose purpose is to alleviate social anxiety , stress , depression , etc right on campus. However there are many dating applications that offer similar features to Aztec LinkUp ( listed below ).

### **Competitor 1**

#### **1. Tinder**

1. Tinder is the number one and still growing dating application in today's generation. Tinder is a location-based social search mobile app that allows users to like or dislike other users, and allows users to chat if both parties swiped to the right. The app is often used as a hookup app.
2. Tinder is somewhat addressing our problem by matching users with their potential significant other with the impression that a happy relationship will alleviate stress , depression , etc
3. This is insufficient because users are not always guaranteed a relationship and Tinder has no control on what happens after pairing users together. Tinders main feature is simple matching people together based on looks not interests

### **Competitor 2**

#### **2. Bumble**

1. Bumble is a location-based social and dating application that facilitates communication between interested users. In heterosexual matches, only female users can make the first contact with matched male users, while in same-sex matches either person can send a message first.
2. Similar to Tinder , Bumble is somewhat a competitor because it is designed to match g users with their potential significant other with the impression that a happy relationship will alleviate stress , depression , etc
3. This is insufficient because there is a conflict of interest of wanting a relationship vs simply hooking up. Like Tinder , Bumble's main purpose is to merely match users together and creating relationships rather than social networking.

### **Competitor 3**

#### **3. Meet Up**

1. Meetup is a service used to organize online groups that host in-person events for people with similar interests. Meetup was founded in 2002 by CEO Scott Heiferman and four co-founders. It was popularized by Howard Dean's 2004 political campaign.

2. MeetUp is an application that is more of a potential solution to our problem by organizing events for people with a common interest so it is easier for people to build relationships.
3. This is insufficient because it focuses on such a broad selection of people and individuals , in addition to this there is no set age limit.

## 19. What potential ways can you make money by solving this problem for your customer?

We have two main sources of revenues: SDSU and advertisers. SDSU will be founding the development of the app, and after the app is launched and tested, advertisers would be major sources of revenues.

## 20. What makes you passionate or well suited to solve this problem?

It is critical for students to interact and share opinions to create intellectual development. During the breaks many students go to the food court or library. According to The American Freshman Study, 2014, "In 1987, 37.9% of incoming college students socialized at least 16 hours per week with friends while 18.1% spent five hours or less. By 2014, 18% of students reported spending at least 16 hours per week socializing with friends (an all-time low) whereas 38.8% dedicated five hours per week or less to socializing (an all-time high)." With Link-Up, we expect that students will be more open to connect other students. They will experience college campus events and activities which ultimately will lead to academic motivation. Students will have opportunities to meet new people who could possibly be lifelong friends and try new things that they are interested in.

Congrats Eric, you've applied to ZIP Launchpad Admission

