Project 4 design

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Overview (Christian)

Purpose and Goals

- **Description of system to be built**
  AngelAlums is a website that will aid Alumni donors in finding unique and interesting projects, while also providing students with the opportunity to find financial sponsors for projects they are passionate about.
- **Key goals and purposes (What problem is being solved?)**
  As MIT students, we understand that it is often a difficult and tedious task to search for funding. Conversely, as a donating alumni you want to see where your money goes and you want to know it is going to be valued and put to good use. In order to address these situations we must take the following into consideration:
  - How can a student (group of students) advertise information for their project?
  - How can students reach potential donors who are interested in a key area?
  - How can Alumni find worthy projects to invest into?
  - How will Alumni keep tabs on projects they donate to?
  - How can Alumni become an integral component of a project rather than just funding?

  The main goal of this application is to abstract all of these concerns. More specifically, the app aims to
  - Help students get connected with Alumni in order to gain funds and advice.
  - Allow alumni a way to donate to projects they feel passionate about and if they choose to, they can participate as potential mentors.

- **Motivation for product (current solutions and their deficiency**)
  Current solutions:

  1. Kickstarter (http://www.kickstarter.com/)
     Kickstarter executes the goal of allowing projects to find donors. However kickstarter provides this opportunity to everyone. The relationship between users is simply project creators and donors, instead of a more complex relationship with mentorship as a possibility. We focus on a group of individuals that all share a university in common and provide the donors an opportunity to personally communicate with the project creators by providing them with links to outside contact information.
  2. Smallknot (http://smallknot.com/)
     Smallknot is another crowdfunding site however its goal is not to help individual

trying to complete a project, but rather allow communities to fund and support local businesses. Unlike kickstarter this website does focus on a community, however it does not suit our purpose because it is about funding small businesses.

3. DonorsChoose (http://www.donorschoose.org)

DonorsChoose is actually the closest website that suits our needs. it allows students to get funding from donors for school projects. The only problem is that it centers around students in primary school and thus the projects and website are all managed by the students teachers. It also enables anyone to be a donor rather than making sure the donors are people who belong to that specific school or have any relation to the students

All of these solutions, while perfect in their own specific niches, fail to satisfy the need that AngelAlums aims to fulfill, which is to connect alumni and their donations with ambitious students who need funding.

Context Diagram (Dongyoung)
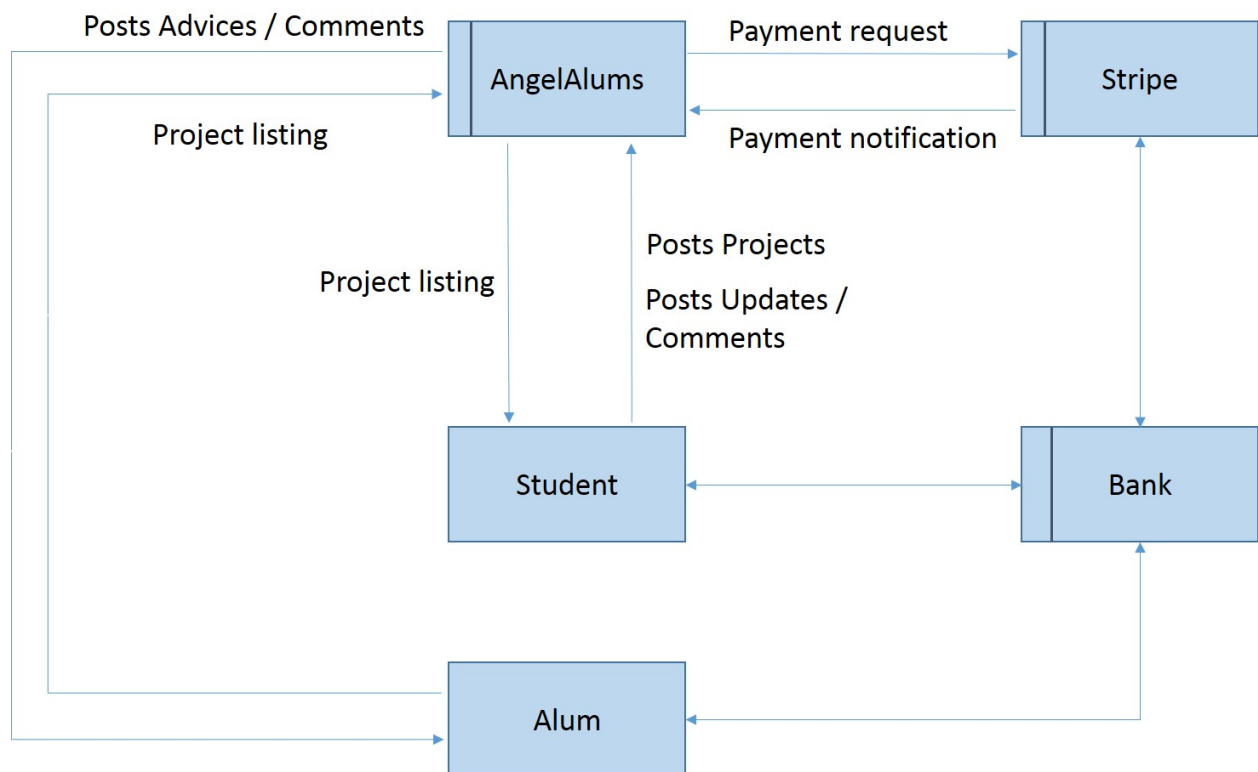
Primary Author: Dongyoung Kim

Concepts (Christian)

Key Concepts

- ● Account

    An account is a way to keep track of a user's personal profile and information such as their interests, class years, majors, and contacts The information in the account will be visible to other users, including the personal contact information.

- ● Student

    A student is someone who has a project they want to start and need to find funding or mentorship in order to complete said project. A student can also explore interesting projects without the need to create a project. A student needs to have a valid school email address for authentication. Students can make a non-revertible decision to change their account status into an Alumni account upon their graduation.

- ● Alumni

    An alumni wants to donate money and search projects to invest into. An alumni should have a valid school alum email address for authentication. When users first register, they will click the checkbox whether they are a student or an alumni.

- ● Donation

    A donation is the notion of an alumni giving their money in support of a students project. An alumni can choose to donate more even after he or she has donated before. There are no minimum and maximum amount an alumni can give even if the donation exceeds the funding goal.

- ● Project

    A project is an idea or plan to potentially build something, or create or fix something but which requires funding and thus a student is looking for donors to help. A student can optionally use a Youtube link to upload a video but needs to upload a project image to be presented on the dashboard. A project can optionally have an advisor such as a professor to give more credibility to alums.

- ● Update

    An update is an optional addition to a project. It represents showing incremental steps taken in the course of completing a project and allows alumni to keep track of progress that is made. A student is able to post their expenditure to be transparent about their budget.

- ● Collaborators

    A collaborator is a student who collaborates with a creator on the project.

The creator of the project specifies a list of collaborators and their AngelAlumns accounts in their project profile. They cannot delete projects, nor do they handle the money. However, they can post updates, edit project information, and see the list of backers. A collaborator can remove himself from the project a creator has added him for.

- ● Creator

  This is a student who is the head of a project and the one that created the project on AngelAlum. A creator manages all the money transactions through donations. In contrast to collaborators, they are the main ones who will be allowed to delete projects, handle money transfers, and add collaborators. Like collaborators, they can post updates, edit project information.
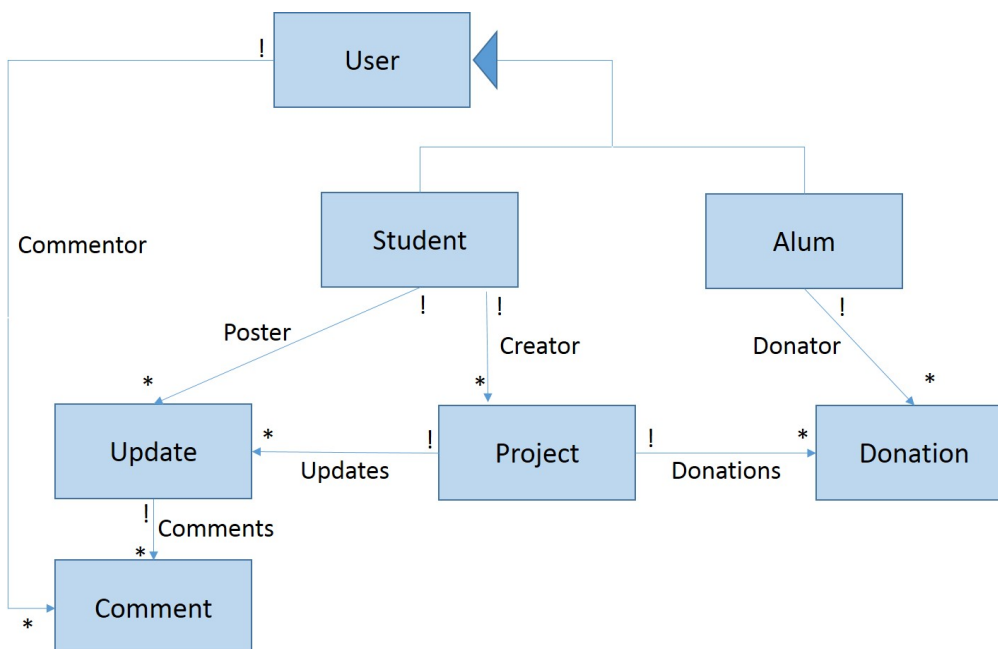
- ● Donor

  A donor refers to an alumni that has given a donation to a particular project. The list of donors will be public in the project profile page.

- ● Comments

  Students and Alumni can all interact with other projects through posting and reading comments on these project pages. Comment section is the platform where alums give advice about the projects and students get feedback.

Data Model (Dongyoung)

a. The Creator Student can designate a list of 'Collaborators' who can edit the Project as well as post Updates
b. The Alum is associated with the Project through Donations

Behaviour (Christian)

Feature Description
- **Payments (MVP)**

  Donors can donate money through our stripe API and creators of projects will receive these payments through stripe.
- **Donation tracker (MVP)**

  A way to keep track money donated from a project perspective. Allows Students and Collaborators the chance to know who and how much they donated.
- **Project Updates (MVP)**

  A project update is a way to communicate with the community any significant progress or milestones completed.
- **Searching/tagging**

  - Users can search for projects and students are allowed to tag their projects with predefined tags so that they are easily searchable. (MVP)
  - In our final implementation we hope to implement custom tags, which allows students to create their own categorization of the project such as tagging student clubs or fraternal groups to describe their project with. (Final)
  - Based on the tags and information from the users, the dashboard page shows related projects which would elicit users' attention (Final)
- **Commenting system for projects (FINAL)**

  A way for the public to put in input, ask questions and interact with projects.

Security Concerns (Ebenezer)

These will mainly be:

- Cross-Registered and exchange students being able to access the system since they will have the school email addresses or hackers using fake email addresses.
- Students can create fake projects to get money.
- Information about credit cards could be access or monitored or recorded.
- A hacker could modify or read the database using javascript and also by reading the urls and the data they send.
- CSRF attacks especially since we will require users to be giving us a link to videos and their social network profiles.

In order to prevent these and order problems we may not have foreseen, these are the measures we will be taking:

- We decided to use an email confirmation system where after the person signs up they have to confirm it from their email account. Also we decided to include exchange students and cross-registered students as part of our definition of students.
- Creators of projects will have the option of adding advisors and collaborators so that alums can do their own background checks to make sure that the projects are legitimate.
- We will be using Stripe to handle money transactions. Stripe has measures to mitigate issues with the credit card information and payment. <https://stripe.com/help/security>
- We will be checking the user logged in and make sure that they are authorized to make whatever actions they try to do by using the "before_action" method. Also we will not be exposing data in the url unless its the user send it in.
- CSRF will be dealt with by using rails "protect_from_forgery".
- We decided to use "strip_tags" method in rails to prevent injection attacks.
- Also, passwords will be encrypted before putting in the database just in case the database is breached.

User Interface (Richard)

- Initial Page

Angel Alums

Email
Password
Password Confirmation
Username
☐ Student   ☐ Alum

Sign Up

Log in if you already have an account

- Alum Dashboard

logo   🔍 search

Richard
Profile
Log Out

Bob is from your frat

Energy-efficient Buildings for Vietnam

By
Bob'16 and Ben'16 $1,500 Funded   tag1   tag2   View

Projects You Donated

Project Name
By
Usename'16 and Usename'16

Project Name
By
Usename'16 and Usename'16

Project Name
By
Usename'16 and Usename'16

Find Projects by Tags

Tag1   Tag2   Tag3   Tag4   Tag5   Tag6   Tag7   Tag8   Tag9   Tag10   Tag11   Tag12   Tag13   Tag14   Tag15

- Student Dashboard

logo	🔍 search	Richard

Projects You Created

Delete	Delete	Delete
Project Name By Usename'16 and Usename'16	Project Name By Usename'16 and Usename'16	Project Name By Usename'16 and Usename'16

Projects You Collaborated

Remove Me	Remove Me	Remove Me
Project Name By Usename'16 and Usename'16	Project Name By Usename'16 and Usename'16	Project Name By Usename'16 and Usename'16

Find Projects by Tags

Tag1 Tag2 Tag3 Tag4 Tag5 Tag6 Tag7 Tag8 Tag9 Tag10 Tag11 Tag12 Tag13 Tag14 Tag15

- Project Page

logo | 🔍 search | Richard

Energy-efficient Buildings for Vietnam

By Bob'16 and Ben'16

30 Backers
$ 1,500

Raised of $ 5,000

Donate to This Project

tag1 tag2

Project Title
Project Description

Update Backers

- Project Creation Page

logo | 🔍 search | Richard

Create New Project

Project Title
Collaborator
Advisor
Project Image
Project Video
Tags — Tag List ▼
Project Description

Funding Goals
Payment

Back Create

- Update Page

Project Title UPDATE

Back To Project

Update Title
Update Date
Update Image
Update Video
Update Description

Comments

Comments

Username1	Comment1		CommentTime
Username2	Comment2		CommentTime
Username3	Comment3		CommentTime
Richard			Create

Update Title
Update Date
Update Image
Update Video
Update Description

Comments

- ## Update Creation Page

logo 🔍 search   Richard

Create UPDATE

Project Title   Project Title

Update Title   [   ]

Update Image   [   ]

Update Video   [   ]

Update Description [   ]

                                    [Back] [Create]

- ## Profile Page

logo 🔍 search   Richard

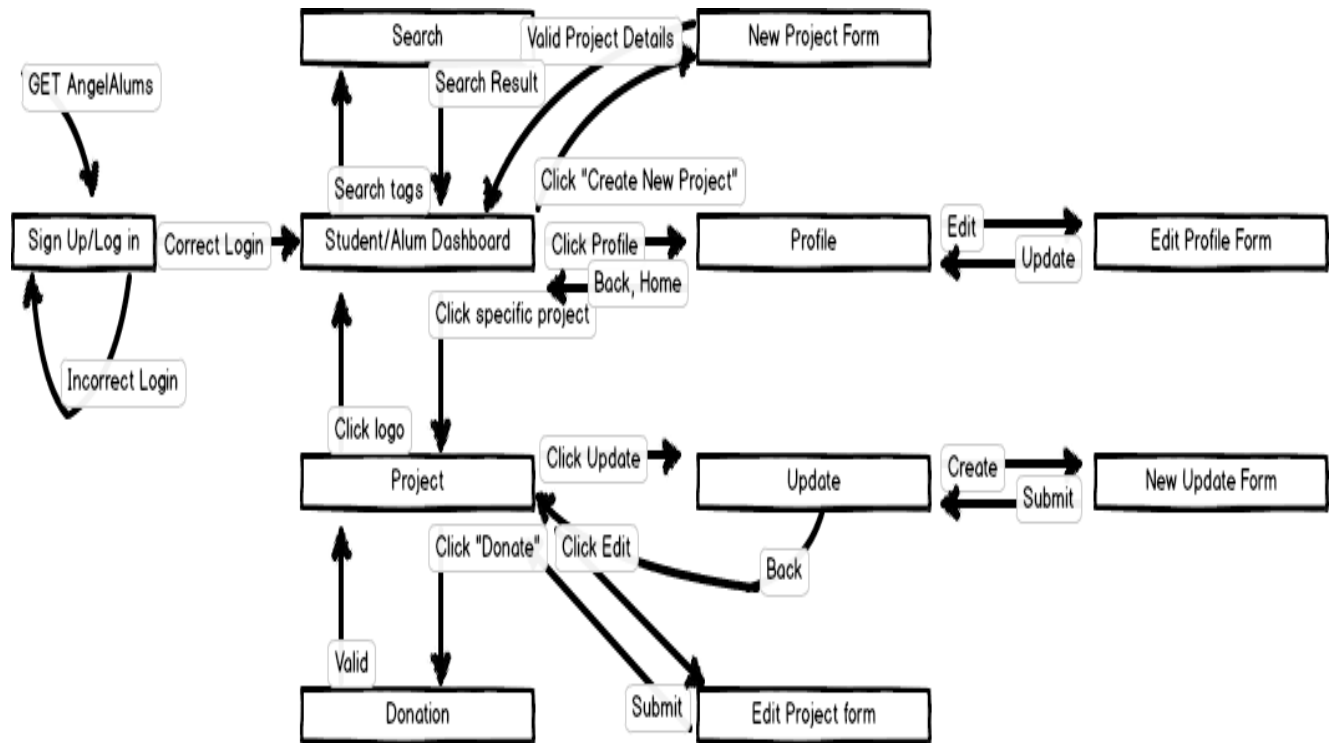### Profile   [Go to Project Listing]

Username   Richard

Class Year   [Class Year List   ▼]

Major   [Major List   ▼]

Introduction [   ]

                                    [Back] [Update]

Challenges and risks(Ebenezer)

Questions we have to contend with with regards to our design and solutions we decided on are:

- **How much access and what actions should differentiate a creator from a collaborator of a project?**

   We could have given them equal access and rights to a project but then there would be a question of who gets the money and who can delete the project. These we thought were too important to give to both creator and collaborator.

   We decided to give both equal access to information and ability to edit stuff except only the creator can delete or decide where the money goes.

- **How do students receive the money?**

   This was tricky because we could either give the money straight to the students or we could use their schools as a means of dispensing the funds. Both had merits of if we gave it to the student the funds would be immediate and they would not have to deal

with bureaucracy. Also students did not have to worry about making sure they get all the money due to them.

If we decided to use the schools, the alumni would donate the money to the school and the school would give the money to the student as they needed it. This would make accountability to the donors easily because they might trust the school authorities more in their discretion than the students themselves.

We decided to pay directly to the students for the reasons already stated and also because the concept of updates would help with accountability.

- **How much information about donations should be public versus private?**

  With this we could make both donors to a project and the amount they contributed public or just make their names public or just show the total amount of money accrued by the project at that point. We realised that displaying amount donated was an issue for some people and that some donors might want to be anonymous.

  We decided to show just the names of donors and the total amount of money accrued by a project and also give donors an option to be anonymous.

- **How and if to implement private communication?**

  We could either create our own messaging system or we could make use of something that already existed. Even though we thought it would be cool to be able to have our own private messaging system, due to the time scope of the class we decided to have users give links to the public profiles. It could be mobile contact, google plus, email or something else and with this users could find each other outside or system and communicate privately with each other.

- **How to implement tagging of projects?**

  There were the options of either giving the students a predefined tags to choose from or give them the ability to create their own tags. The decision to use predefined tags was easy to make because we think it is important to be able to group projects and also it would make it easy to search projects. The problem with allowing students to customize tags for their projects is that they could be spelling mistakes or repeated tags or wrong labeling.

  We decided to do both. In regards to the issues with custom tags we decided that the advantages of having customized tags outweighs the disadvantages and also to help with it we will be putting up an email for users to email us with issues including wrongly tagged projects.

- **How to implement videos on website?**

  We could have the students upload videos or we could use a outside sources help us. This an important feature for updates about projects and describing projects.

  We did not want to have to store too much data in our database thus decided to use outside sources. We will require the students to submit a youtube link to a video describing their project and we will just embed that video.