Final Project Documentation

Project Title: Donate Gifts

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CSC 337

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Project Overview

The DonateGifts project enables users to donate holiday/ birthday gifts and school supplies to children in the foster care system and orphanages. Donation is directly linked to the product that is sold on Amazon and the child's wish item will be added to the donor's Amazon cart. With one button click, it will automatically send the child's wish item to their registered foster care address.

Each year, more than 500,000 kids spend time in foster care. For many children, Christmas time can be sad and lonely because they are undergoing stressful situations due to poverty, illness, or lack of resources. I wanted to create a platform for people to engage in their community and donate Christmas/ birthday gifts to the children who might not otherwise get one. Many people have a vague idea of wanting to help the kids in foster care, but may not have time to do so. By creating this platform, I wish to provide convenient ways to engage our communities to donate needed items to children and share the joy together. It's priceless to make a child feel important, remembered, and loved.

DonateGifts helps people to save time from the traditional way of gift donation where they have to visit the store, shop, and choose gifts and deliver them to the organizations. Needless to say, gift donation takes a lot of volunteer's time and effort. Additionally, with the DonateGifts project, the foster child can wish for a specific gift, such as a basketball or new shoes, rather than having random gifts delivered to them. Children will receive the exact gifts they wished for and people will have an easier way to get engaged in the community.

The functionalities of this web app includes the following:

- User connection
    - sign up, log in, log out
    - User database saves user information
- Access control
    - Only foster care partner users can access to create wish cards for children (donor 'get' access vs. partner 'post' access)
    - Verification for foster care partners (must add their organization name, must use work email & verify work email by clicking the provided verification link)
    - DonateGifts will only accept partnership with non-profit foster care organizations and licensed adoption agencies. If there is a later version, it will broaden partnership categories to small-size state-certified domestic foster homes, etc.
- Donate gift functionality
    - "Donate Gift" button leads to the Amazon cart link that is set up to deliver the wish item to their registry address. The whole thing is handled externally by Amazon. The registered shipping address will be protected by Amazon and will not display to gift donors or any other users.
- Wish card creation

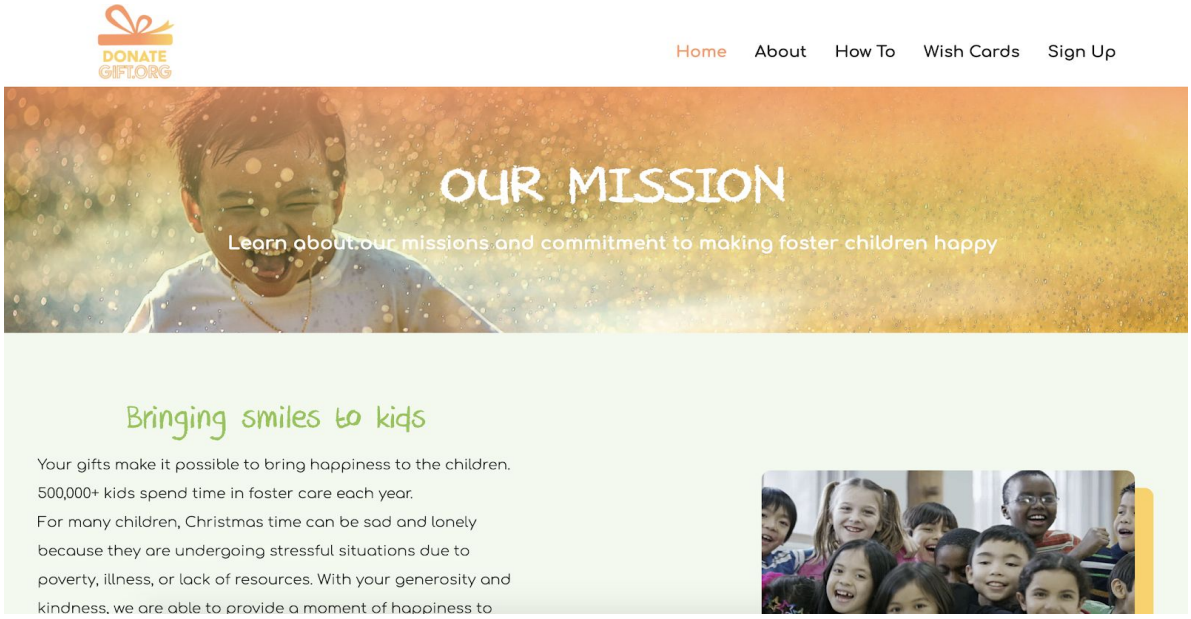
  - No minor or non-certified caregiver can register to create wish cards on their own, in order to prevent misuse of the site. Foster care parents or agency partners will manage the account and create wish cards for the children under their care.
  - Wish card creation is through a form. All data inputs will be stored and managed in MongoDB.
- Wish card page and section random display
  - * All wish cards that are created will be populated and displayed on the 'Wish Card' page
  - From the main home page, there is a sample section in which only a few wish cards will display randomly in a carousel. This will likely incorporate the Fisher-Yates Shuffle Algorithm.

Frontend Outline

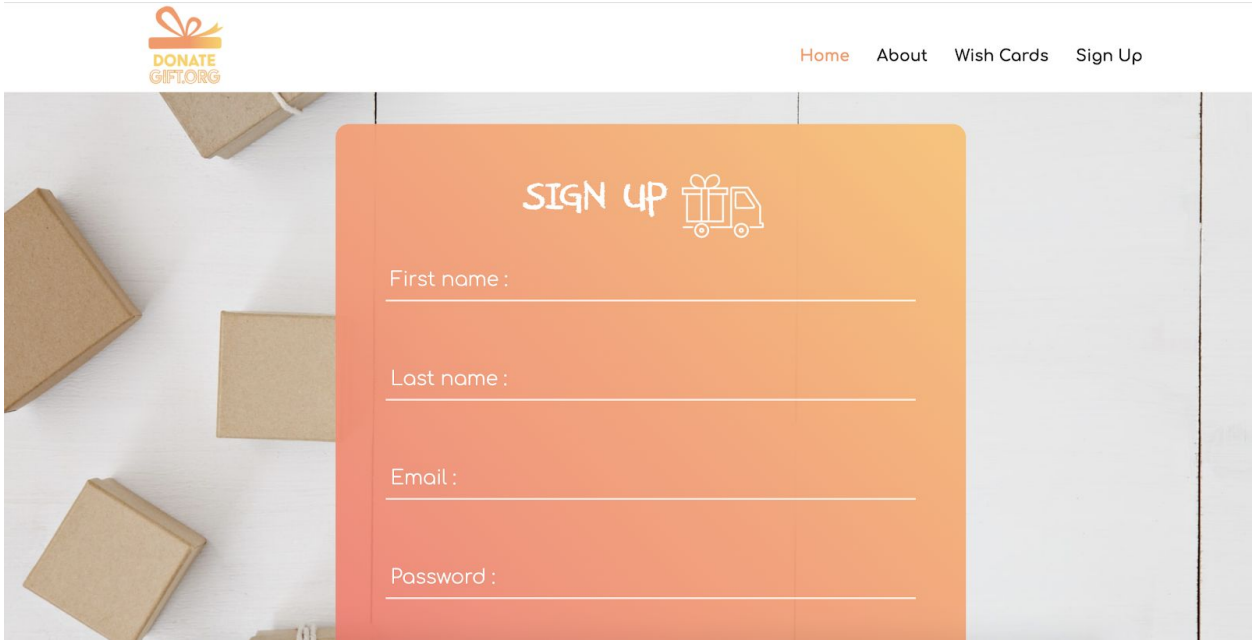
To keep the timeline of this final project, I will not implement messaging functions, but in the future versions, I wish to develop more advanced features, such as messaging, ability to host a corporate donation drive, provide tax-exemption statements, ability to track gifts, etc. Here is the overview of the frontend.

1. Home page (see the screenshot on page 7)
   - Navbar with branding, header with background image and a call-to-action button
   - Sample wish card section for preview, which has 'See More' and 'Donate Gift' buttons embedded with <a href> links
   - Thank you section
   - More info section, changes colors at mouse over
   - Responsive for most screen sizes (using bootstrap for containers, cards, etc)

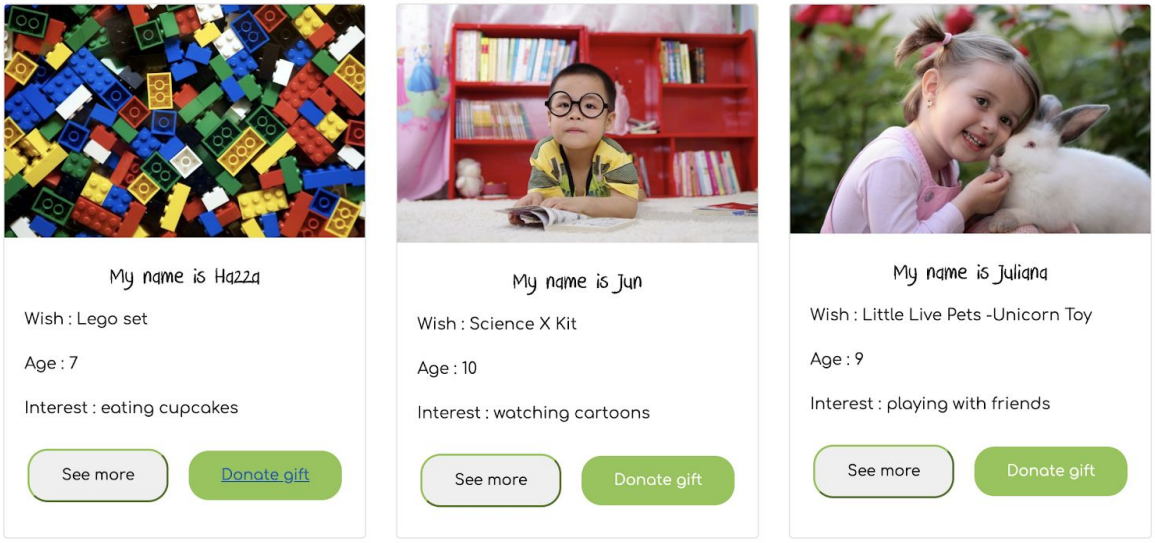
2. About page (see below)



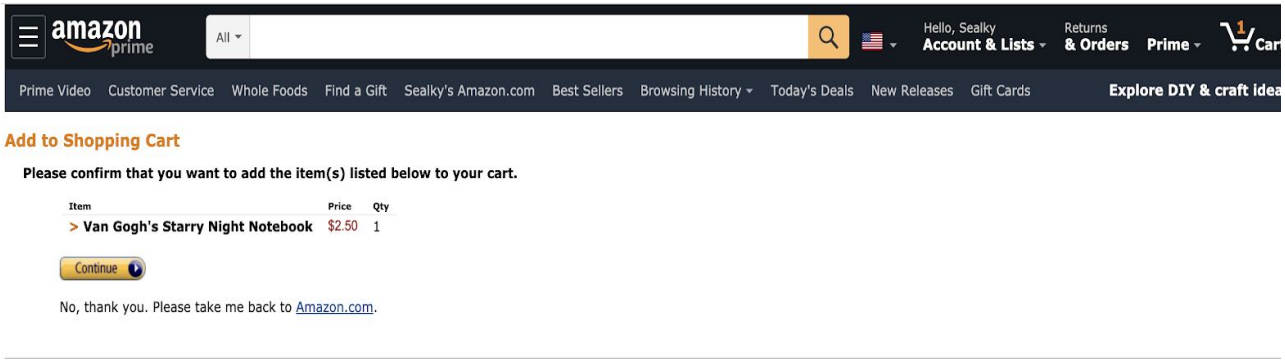
3. Sign up page (see below)



4. Wish card page (see below)

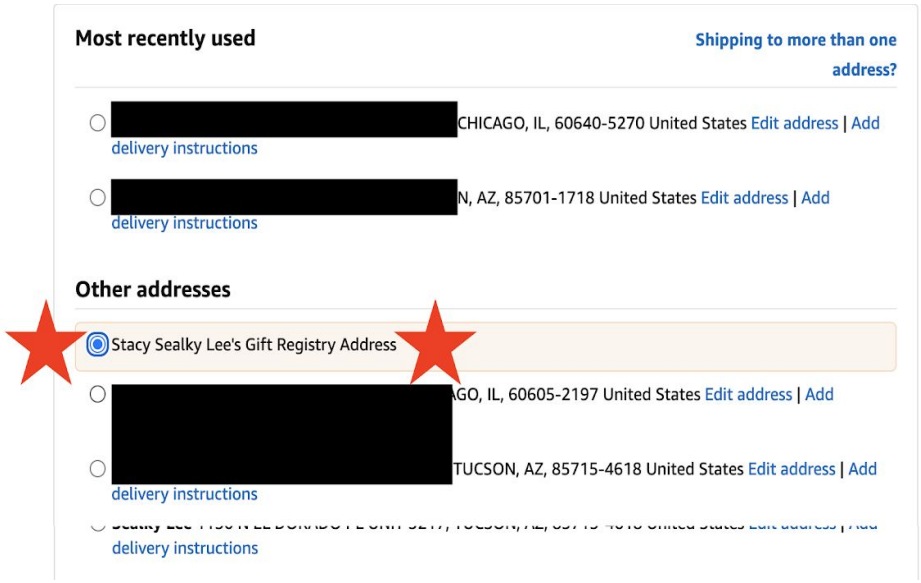


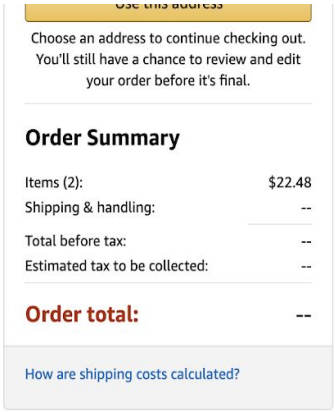
5. Donate Gift feature (see below)
   - When user clicks the button, it will automatically open an Amazon page and add the item to the user's Amazon cart (assuming the user has an Amazon account)
   - All that is required from the user is to click 'Check Out' and select the 3rd party shipping address that is set up to deliver the wish item to the foster care child.

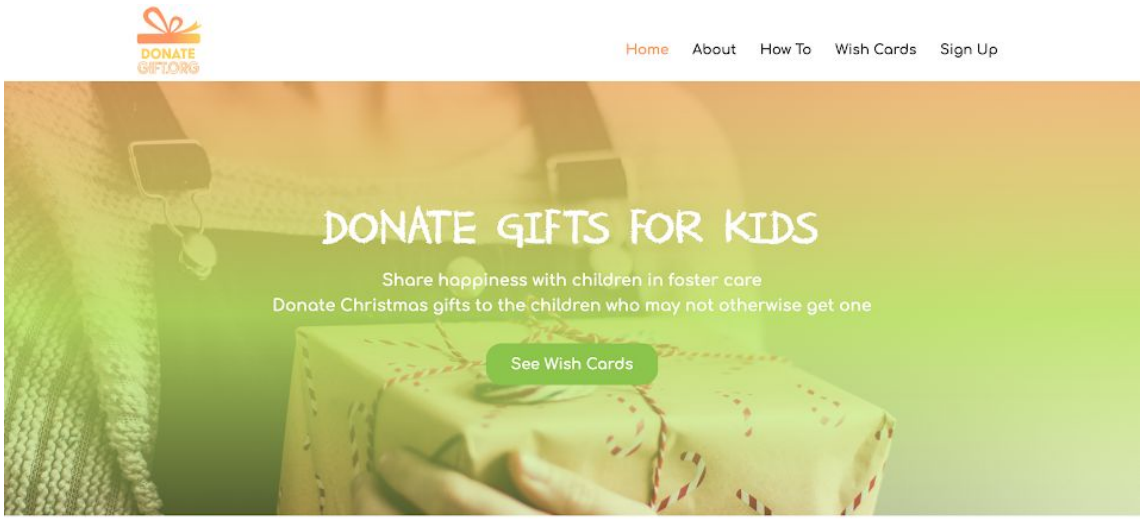


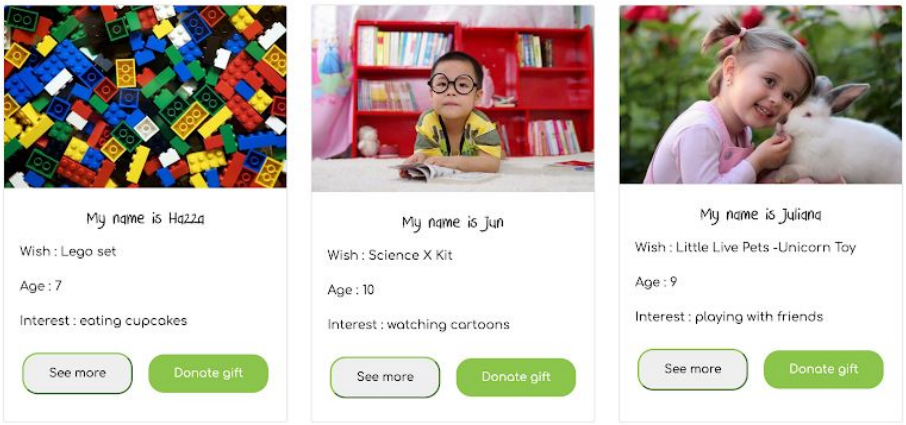
From here, the process goes like this:

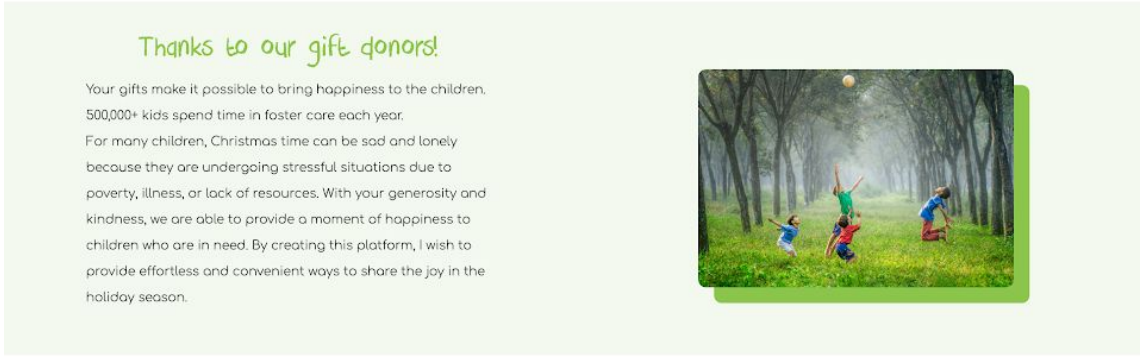
Continue -> Address Selection -> Select Other address / Jane Doe's **Gift Registry Address** -> **Use this address** -> Select payment options -> **Check out** & Order completed -> Gift item will be delivered to the foster child's address through Amazon



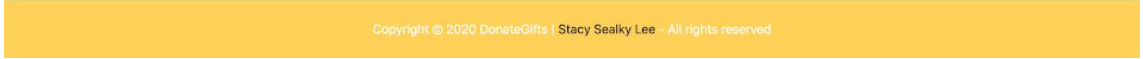



DONATE GIFTORG
Home
About
How To
Wish Cards
Sign Up
DONATE GIFTS FOR KIDS
Share happiness with children in foster care
Donate Christmas gifts to the children who may not otherwise get one
See Wish Cards


My name is Hazza
Wish : Lego set
Age : 7
Interest : eating cupcakes
See more
Donate gift
My name is Jun
Wish : Science X Kit
Age : 10
Interest : watching cartoons
See more
Donate gift
My name is Juliana
Wish : Little Live Pets -Unicorn Toy
Age : 9
Interest : playing with friends
See more
Donate gift


Thanks to our gift donors!
Your gifts make it possible to bring happiness to the children.
500,000+ kids spend time in foster care each year.
For many children, Christmas time can be sad and lonely because they are undergoing stressful situations due to poverty, illness, or lack of resources. With your generosity and kindness, we are able to provide a moment of happiness to children who are in need. By creating this platform, I wish to provide effortless and convenient ways to share the joy in the holiday season.


Become a donor
Together, we can make the kids smile! Hello World Lorem ipsum dolor sit amet, consectetur adipiscing elit.
Learn our mission
Hello World Lorem ipsum dolor sit amet, consectetur adipiscing elit. Mauris tempus vestib ulum mauris quis
Partner with us
Register your foster organization or care home. After you get verified, we are here to help you with creating wish cards on behalf of the children under your care.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Backend Outline

The server side of this application includes npm modules nodejs, express, mongoDB, mongoose, body-parser, cookie-parser, and crypto. This list is subject to change depending on the amount of time we have left after completing the project requirements. The kind of routes this project will have include GET requests such as “/home”, “/about”, “/how-to”, “/wish-cards”, “/signup”, “/see-more/id”, “/donate/id”. It will include POST requests such as “/create/user”, “/create/wish-card”. Once again, the list of routes are subject to change although they will follow the REST resource naming convention. At this moment, the database will contain three collections: users, wish cards, verifications or comments. These three models will provide enough functionality for both the donor and the agencies to interact with each other on the website. For the User model, the plain password will be hashed along with a salt and the hashed password will be stored in the database. The backend will also issue session cookies each time the user logs in to remember that the user has logged in. The cookie could expire every 20 minutes or so. The exact time would be trivial as it is very easy to change. Some extra features that I would like to implement if we have enough time are checking to see if the donations are fulfilled for each selected kid. Another extra feature that would be time consuming but very important would be to introduce load balancing. Assuming that most people use the site to donate during holiday seasons such as christmas, we can expect a lot of traffic and that can be too much for a single server. Introducing a load balancer will help scale the web application more.

Timeline

Stacy:

- July 24
    - Draw the mockups for all the pages
    - Design the skeleton of the landing page
    - Pick a color scheme
    - Design the site logo
    - Create a how-to video
    - Test the Amazon cart / 3rd party address protection features
    - Create branding and plan the necessary functionalities
    - Create the mission, purpose of this project, problems we aim to solve, and other verbiages that will be used in the site
    - Create a project presentation, start documenting everything
- July 27
    - Code HTML, CSS files according to the mockup designs (estimated hours ~6hr)
    - Complete the first version of front end styling (may change a few things later)
    - Plan what data input fields will be used for the wish card creation, etc.
    - Set up the file structure, app.js, create package.json, install npm modules,

    - Create a static sign up page (HTML, CSS, JS)
- July 28
    - First meeting with Jordan, discuss tasks and goals (at this point, most of the front end static pages are complete and we have a clear vision of what needs to be done)
    - Set up github and share the repository with Jordan
- July 31
    - Check with Jordan about the data models
    - Test the data schemas and models
    - Set up Mongodb Atlas cluster
- August 3
    - Create a static page for wish card creation form
    - Add a javascript carousel for browsing wish cards (client side js)
    - Set up nodemailer, mailgun and finish email.js so the contact form sends emails to my gmail account
- Aug 5
    - Test GET/POST requests
    - Complete the signup, login, logout process in both server and client sides
    - Make all of the pages responsive for mobile, tablet, and pc sizes
- Aug 7
    - Make sure that when the foster care partner signs up, all verification part works
    - Make sure the wish card gets created and data is stored in our DB
- Aug 8
    - Test the functionalities created so far with Jordan
    - When wish card is created, make sure it populates in the wish card page and the sample section in the landing page
    - Implement the random function so the sample section in the landing page should display cards randomly every time
- Aug 10
    - Make sure the front end/ back end merge works perfectly
    - Wish cards might need some retouching so that the format looks visually pleasing
    - Connect the live site with a domain
    - Test the live site rigorously
- Aug 11
    - Create the video and .txt file
    - Make sure everything is in order
    - Submit

Jordan:

- July 31st
    - Write down all the skeleton code for every single route we can think of
    - Setup schemas and models (database)
    - Password hashing

- August 2nd
    - Testing and adjusting User login
    - Fill in some of the skeleton code for GET request
    - Test for GET request routes functionality
- August 4th
    - Tweak page to make sure only partners can create wish cards (post access only if you are selected as a partner)
    - Make sure donors can visit the page using the GET requests
    - Test for password hashes and create sessions for login
- August 6th
    - Testing security features for the site
    - Find a way to check if the user has fulfilled the amazon wish card order
    - Test the amazon feature where donors can pay
- August 8th
    - Merge front end and back end together
    - Deploy the application onto digital ocean
    - Make sure the project is running in the background continuously
- August 10th
    - Final testing phases with partner
    - Attempting to insert Nosql injection, Cross-site scripting, etc
    - Check to make sure data is being stored correctly on mongodb atlas
- August 11th
    - Create a 5-8 minute video with partner showing off the final project
    - Create a video.txt file
    - Zip everything and submit it
- August 12th
    - **Project is due!**