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CSC 415
10/9/18
Assignment 3 - OSS Individual Project Proposal and Specifications

Github Repo: https://github.com/madelinefebinger/senior-safeguard
Social Issue: Awareness of online scams, focusing on senior citizens
Project Title: Senior Safeguard
Option: 2
Implementation: A web application written in Ruby on Rails, using a PostgreSQL database
Project Idea: Senior Safeguard will be a web application that protects senior citizens from online scams by improving communication between them and their family members.
Discussion:

With technology changing so quickly in our society, senior citizens often get left behind. In general, seniors lack education about how to use technology safely. Unfortunately, all of this new technology leaves them vulnerable to new kinds of scams. Some of these scams are phone calls that convince the elderly that they owe thousands to the IRS, email messages with links to viruses, and tech support scams where a technician pretends to fix a computer and charges hundreds of dollars. In one recent scam that went viral, the scammer would call senior citizens, pretend to be their grandson, and convince them to send them money.

Every tech savvy person knows that these are completely fraudulent, but seniors fall for them all the time due to their lack of technological experience. The current inefficient solution to this problem is for seniors to call their family members and ask for advice. Often these family members are too busy to respond, and when they do respond, it's too late. Senior citizens also might not know enough about technology to accurately describe the scam over a phone call.

An innovative solution to this problem would be a web application that allowed seniors to contact multiple family members at once regarding the problem they are facing. A senior citizen would connect their account to the account of their tech savvy family members. The senior would log in, then fill out a form with the information with what they suspect to be a "scam". This form would include information about what type of scam it is (ex. phone call, email, virus pop-up), a description of the problem, and an optional picture upload. After submitting the form, the user's family members would receive an email notification. Only one of the family members

have to log in to the website and use their best judgement to respond whether they think there is a security risk or not. These results will be send back to the senior by an email notification.

Another possibility would be for people who have knowledge about technology to sign up as volunteers for the website. Adding volunteers would make the website useful for senior citizens who don't have any family members who are knowledgeable about technology.

Also, the website would contain a page with educational information about common online/phones scams, so that people would know what to look for. That page would have an option to share that information through social media so that the general public gets more educated about technology. Overall, I hope Senior Safeguard will make it easier for families to protect the elderly from online fraud.

Algorithms:

One algorithm I will have to implement is some way for the users to connect with other users. I plan on using a "friend request" model to have seniors able to connect with their families. Another algorithm I'll implement is sending the emails. I will take the information entered in the form, then format that information into an email that can be sent to the user's family members. The user's request will remain "open" until one of the user's family members or a volunteer submits a response on the website. Then, the user will receive an email notification that there is feedback available on the website.

Data Structures:

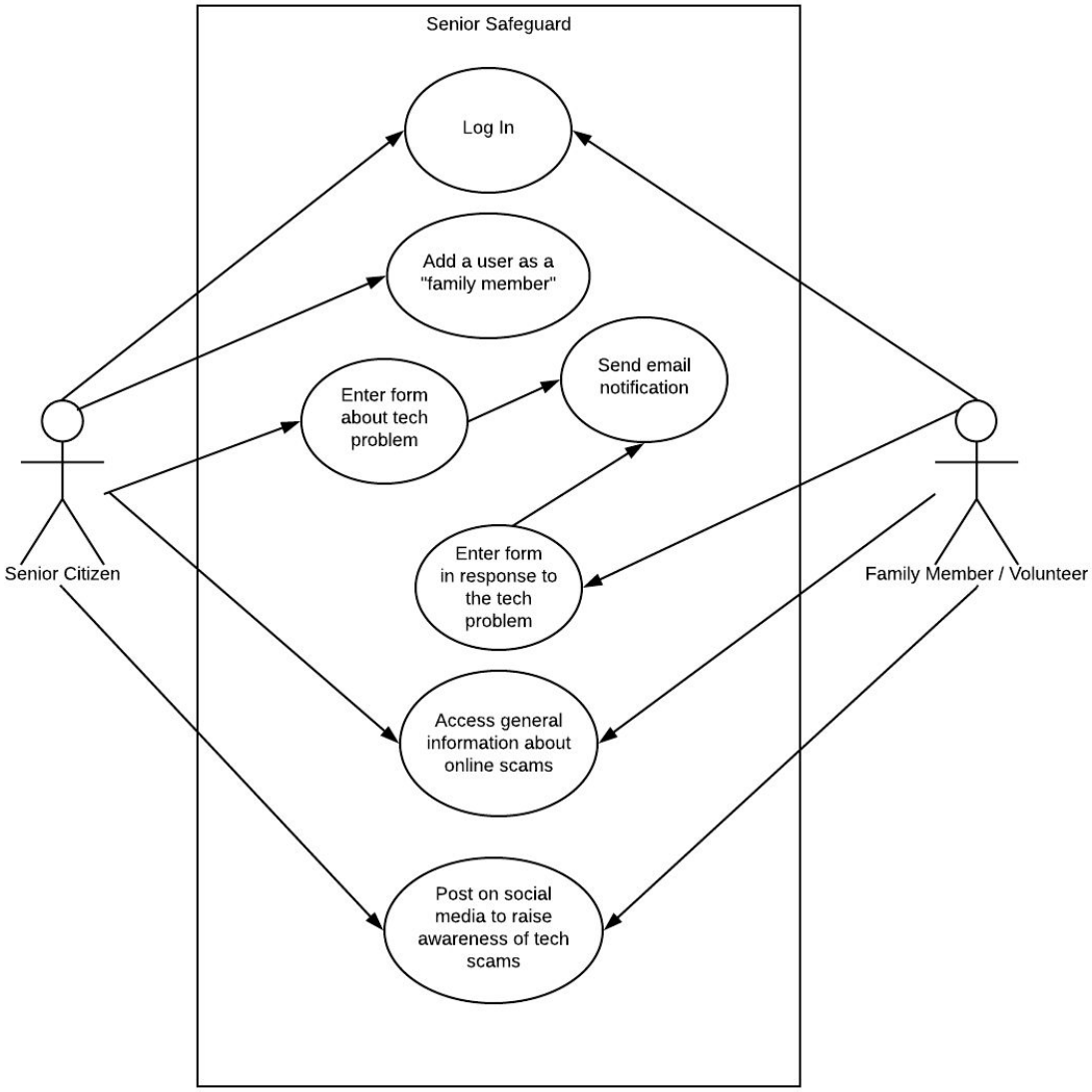
I will be using a PostgreSQL database to store the account information for each user, including username, password, and email. For each senior citizen account, the database will also store a list of the accounts of their family members. I will also have to make a table of requests for each user, one for "open" requests and one for a history of "completed" requests.

New software engineering concepts you expect to learn or reinforce:

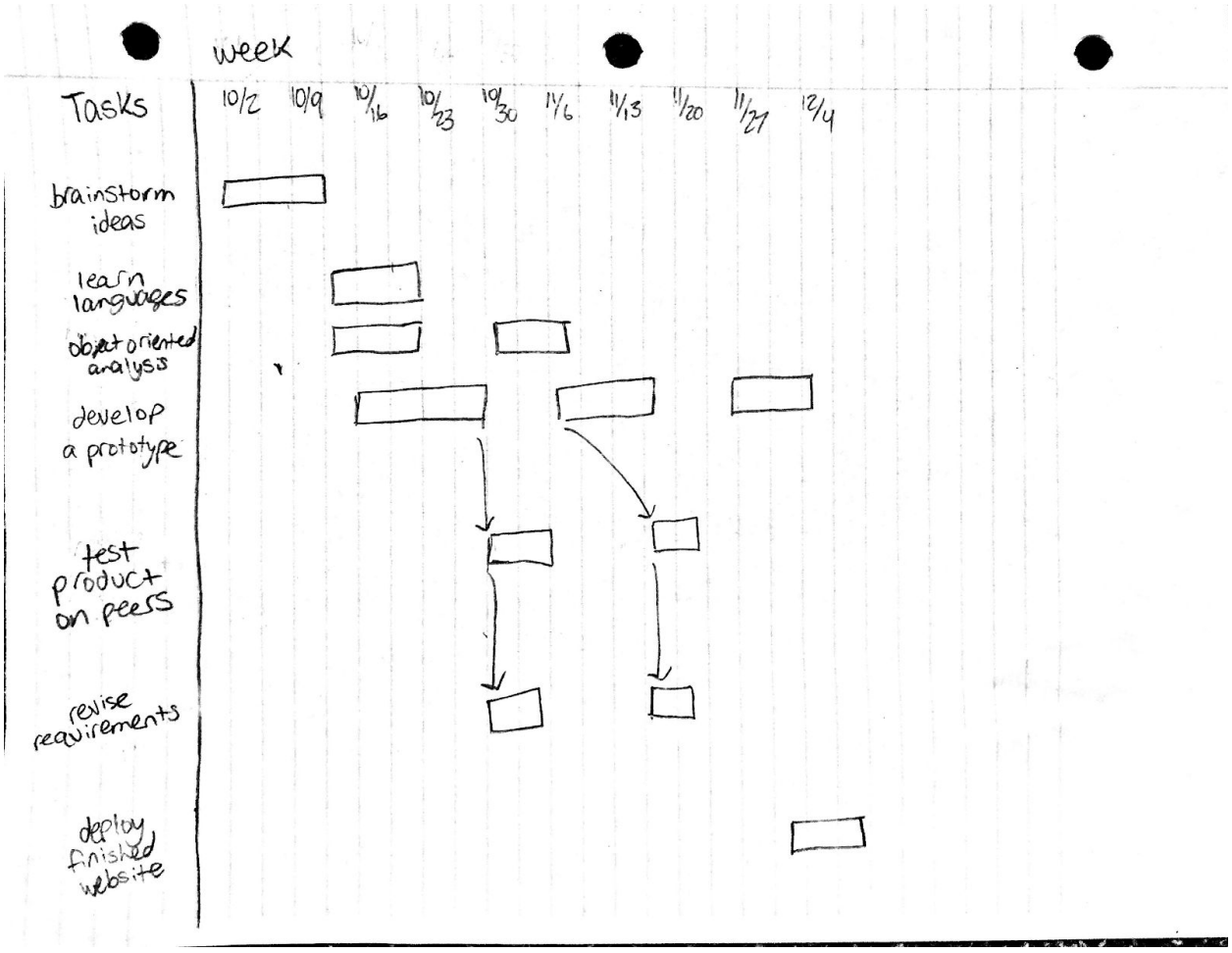
I expect to practice agile development while developing this web application. As this is an individual project, I have more freedom to change the requirements as the project develops, so I need to write code in a way that prepares me for change. I also expect to use an iterative software development model. With an iterative model, I can make sure the most important functionality is completed first. Then with the next iteration, more functionality can be added.

I also will learn to use time management tools such as the Gantt chart to plan when I will be working on each activity. I believe that the Gantt chart will be helpful for completing the project on time.

Use case diagram:



Gantt chart:



License:

For Senior Safeguard, I chose to use the GNU GPL License. This project will be open source, so in the future, anyone who wants to can contribute. The GNU GPL license keeps the software “free”, meaning that anyone can use or modify it as long as they keep the same GNU GPL license. Also, any “derivation” of this software will need to include a copy of the source code. I chose to use the GNU GPL license over the MIT license because I thought the MIT license was too vague, and “derivative” software would not need to include of copy of the source code.