School of Computing Senior Design Project (SDP) – **Creating an app for the Ask Aunt Nellie Project, a crowd-sourced Connecticut farm management knowledge base**

- **The key components** of a Senior Design project statement are **an Engineering Challenge and Deliverables**.
- **The components listed below are for reference only to help you to define a projects statement. Please use all or some of them as you find it appropriate to describe a project.**

(SPONSOR) background - sample: Diane Dorfer is the owner of Cobblestone Farm in Mansfield Center, CT. The farm is a mixed vegetable operation, primarily serving a CSA, local food assistance programs, and the Storrs Farmers Market. Recently, she has also started a position as the Farm Viability Service Coordinator with UConn Extension, in CAHNR.

Project background- sample: In the original iteration of this project, Ask Aunt Nellie (AAN) was to be a collection of spreadsheets detailing the knowledge needed to manage small-scale diversified farms. Resources will include a crowd-sourced farm inventory, agricultural suppliers, and farm-friendly professionals. Eventually CT-appropriate seed varieties, wholesale price lists, and group ordering opportunities could be added on. The current project proposal is to achieve the same goal through an application created through a senior design project. The background planning, administrative, data collection, and outreach components of AAN are funded by a Farmer Grant through Northeast Sustainable Agriculture Research and Education and will be my responsibility. More here - https://projects.sare.org/proposals/920993/6196/

Project requirements / technological challenges:

Note: This is an Innovations on Small Farms project partially funded by the USDA. It will have one or two students from CAHNR supporting the project as well and there are some materials on a HuskyCT site to introduce you to the project, to help the team get started and to provide feedback on the project. There is also an opportunity to participate in a Farm Hack event in January 2025 to share your preliminary work with other farmers and to get feedback.

The big picture goal is to create a user-friendly app that serves as an interface for a dynamic database of all the stuff farmers need to run their businesses. The three core functions will be the abilities to search for, ask for, and contribute knowledge. There will also be the ability to "browse" categories and info within categories.

Categories will be the types of stuff – essentially, if this were done in Google sheets, how each sheet would be labeled. There will be tractor implements, irrigation supplies, harvesting supplies, bulk materials, etc. Within each category, subcategories – essentially, row headers. So, within bulk materials, there would be potting soil, compost, wood chips, etc. And then for each row header, there would be multiple entries with sourcing info, such as where you could get potting soil – businesses names and info, farm that posted the info, why that farm like that business, other subcategories that business covers, etc.

Knowledge search – I imagine a query button in which a farmer could enter what they're looking for, say potting soil. Results come up as a list of companies, and you could hover over each name

and get more info on the company. Also, on the home screen, there could be a dropdown list of categories and subcategories through which farmers could find what they're looking for.

*Request Knowledg*e – If a search is unsuccessful, farmers could hit an "Ask Other Farmers" button and be prompted to fit their query within an existing category or make a new category. For example, they could find bulk materials, and put in potting soil if they found no entries when they made a search. Or maybe bulk materials does not exist yet, so they could create that category, and then the potting soil subcategory. New requests could be on the app home screen, and users could opt in to be notified when a new request is entered. The querying user would be notified when new entries are made to their query.

Share knowledge – Farmers would be able to enter sourcing info for any subcategory. Through a series of dropdown boxes, they could see all the sourcing info for potting soil, and "add new" if a company they like isn't there. They would also be able to search for company names, and add as appropriate if not listed anywhere. As above, they could opt in to be notified when a new query is made, and enter info through a form set up.

There very well may be better ways to structure all this, but from the above hopefully you get the idea of the functions I'm hoping for.

An important component will be creating a way to automatically vet users as actual farmers. There are several possible lists/resources I could use, but essentially users would enter unique personal info that would be verified through an existing list of farmers and their identifiers, enabling them full access to the app. It will be up to me to figure out what info we use. There will also need to be "read only" access to information in the app for non-farmers. It would be good to have a mobile and pc version, as not all farmers use smart phones.

Preferred technologies – samples:

Backend: Use Firebase
 -User registration
 -Cloud storage
 -Push notifications
 -Analytics

App implementation:
 Option 1) to be determined by group.

 Potential project expansion potential)

- **Is there a specific software package required for the projects? Y ___   N __x_**

     Which package (name/version) _____

- **U.S. Citizen/Person (green card) Required?**   Y____ N __x__

- **Will Export Controlled data be used in project (EAR/ITAR)**   Y ___ N_x__

- **NDA/IP Agreements required?**   Y ___ N _x_

- **Other considerations:**

Contacts

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