Project Odyssey

Members:
Achintya Ghalaut (ag72@illinois.edu)
Ananya Ghalaut (ananyag8@illinois.edu)
Ivan Valdez (ivalde5@illinois.edu)
Ram Goenka (rgoenka2@illinois.edu)

1. Describe what data is stored in the database. (Where is the data from, and what attributes and information would be stored?)
The database will store data of professors at UIUC as well as their research areas and contact information. The database will also have a section that stores information about their research labs.

2. What are the basic functions of your web application? (What can users of this website do? Which simple and complex features are there?)
The website prompts the users to a log-in page where the user can create their profile for the website. This log-in page is going to consist of a questionnaire that will include the following questions that the students have to answer with:

- Name
- Email (UIUC email)
- Year in School
- Major
- Interests
- Weaknesses/areas the student wishes to work on

Upon filling out this questionnaire, students will be prompted to a page that will allow them to select the courses they have taken within their major/specific interest/specialization. All of this information will be used to create a personalized pathway for the student. This personalized pathway will contain information that will consist of courses that are within the specialization of the student or courses that might benefit the student and help develop key skills. The website will also have a research tab where students will be presented with information about faculty focusing on research within the student's specific areas of interest as well as a link to their research lab (if available) and their contact information.

Since finding on-campus research is not an easy task, and oftentimes student emails can go ignored, we want to be able to provide the student with a platform/form that will allow them to be able to connect directly with the faculty from the list created as well as any other faculty the student wishes to reach out to. So a key complex feature we wish to include is a networking forum for the students where they are able to have one

centralized platform to be able to reach out to the professors indicating their interests, the courses they have done, as well as any relevant experiences they may have. This forum would serve as a centralized platform between the student and the professor ensuring that the student is able to contact the professor without the danger of their email being lost in the “black-box” that professor inboxes tend to be.

3. What would be a good creative component (function) that can improve the functionality of your application? (What is something cool that you want to include? How are you planning to achieve it?)
Something creative that we want to include in our project is creating a schedule for students who want to learn a skill to improve their resume. For example, let’s say that a student wants to start learning AI because they are interested in pursuing a career in AI or want to gain research that involves AI a component of our application would create a schedule of classes and RSO that a student can join based on what courses they’ve already completed and courses that are offered at UIUC that tailor to AI.

4. Project Title
Project Odyssey

5. Project Summary: It should be a 1-2 paragraph description of what your project is.
One of the questions that keeps getting brought up a lot amongst undergraduate students is “How do I find research?” or “What opportunities exist out there for me as a student?” These are exactly the questions that our project hopes to aim at and answer. Project Odyssey is a comprehensive website that allows students to find and directly reach out to professors conducting research in their area of interest.

Our project has three main components:

1) Filter professors based on strengths, courses taken, and skills possessed. Results will be a curated list of professors with their contact info, relevant websites
2) Forum/networking space: Forum for sharing research experiences, and networking space for contacting professors
3) Pathway builder: gives a map of courses to take, RSOs to join, and skills to cultivate

The first component will be a filtering mechanism where students can put in their major, skills, courses taken, and then get a curated list of professors that match their profile. The user will be prompted to a log-in page where they will be able to enter their credentials (Name and Illinois email) which will then prompt them to the Project

Odyssey home page (check “Post-login page for students” in the layouts). From here the students have the option to find research groups, choose their own adventure, or directly reach out to professors. The direct reach-out feature is one that we consider to be one of our more creative features as unlike cold emails, which are often a shot in the dark, the direct reach-out is meant to be an official method for students to reach out to professors expressing their interest in their research as well as any other relevant information. The website also has a page for professors where they can log in with their credentials and view and reply to student messages.

6. Description of an application of your choice. State as clearly as possible what you want to do. What problem do you want to solve, etc.?
The purpose of this project is to enable UIUC students interested in getting involved with research and finding potential faculty members that match the student’s interests and skill sets. This web-based application is designed to help alleviate the initial struggle that many students experience when they want to get involved with research but don’t know where to begin. They might be incoming students who don’t have a good idea of campus resources or websites. Through this platform, students will get a curated list of professors with relevant links to profiles, research websites, and skills required that they can use to email professors to express their interest.

7. Usefulness. Explain as clearly as possible why your chosen application is useful. Make sure to answer the following questions: Are there any similar websites/applications out there? If so, what are they, and how is yours different?
It’s difficult to find research at UIUC. Students spend countless hours reading professors' research papers and emailing professors just for them not to get an email back. One of the main reasons for this is that students lack the skills that the professor is looking for in their lab. This application is not only creating a plan for students to gain these skills but it’s also a bridge to connect students and professors based on skills that students have and professors want. A similar application is Illinois experts. The application is aimed more towards helping students find research work, however, ours is different because it adds more to just being able to find research but connects professors with students directly. Also, the component of creating a schedule for students to learn a new skill is really useful to get these connections.

8. Realness. Describe what your data is and where you will get it.
We will have to generate our own dataset through web scraping. We will use Illinois experts (https://experts.illinois.edu/en/persons/) to create a dataset of professors, their contact info, personal/group websites, and courses taught. We will create another dataset for courses by scraping Course Explorer. This will come in handy in creating the

pathway builder to delineate the courses to take. We will also scrape the UIUC RSO dataset to help create a dataset of all campus RSOs in Illinois.

9. Description of the functionality that your website offers. This is where you talk about what the website delivers. Talk about how a user would interact with the application (i.e., things that one could create, delete, update, or search for). Read the requirements for stage 4 to see what other functionalities you want to provide to the users. You should include:

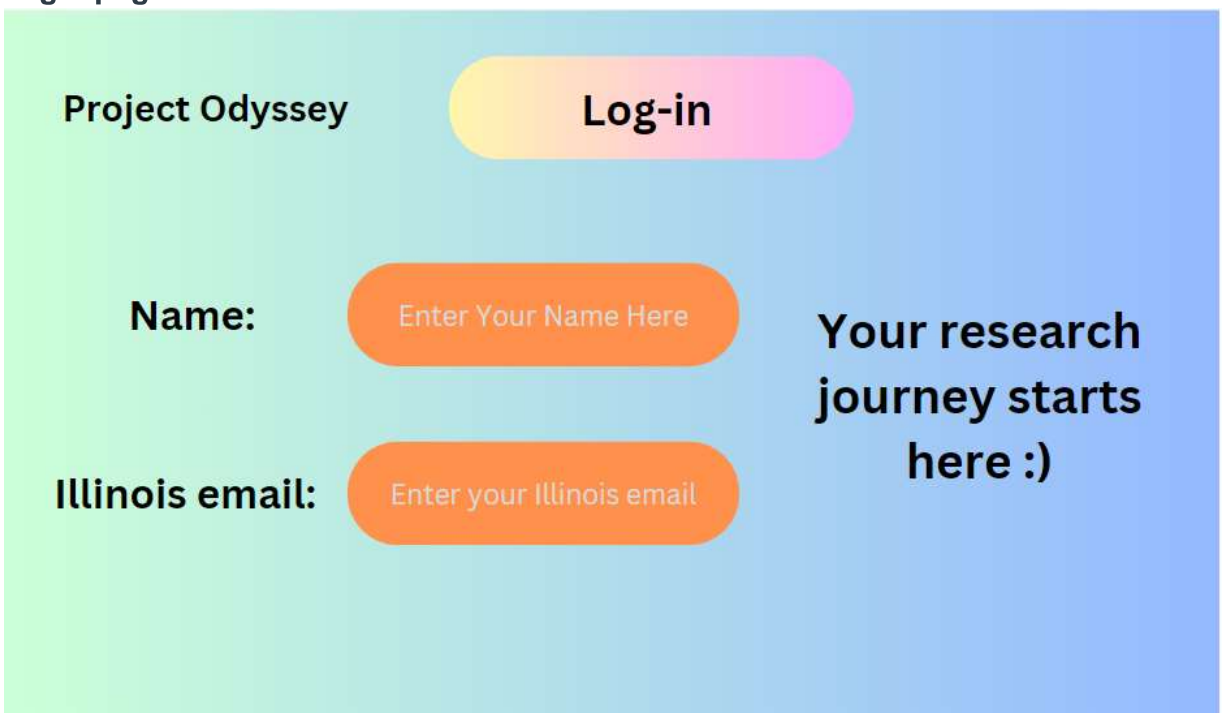
Our website will allow users to search for professors and research positions based on the skills that they currently possess and the courses that they've taken.

On the login page, the user will be able to enter their NetID and email. If they happen to be a professor, they will be redirected to the post-login direct reach-out page for professors. If they are a student, they will be redirected to the post-login page for students. Here the student has the option of clicking on three different tabs: Find Research Groups, Choose your own adventure, and Direct Reach Out. The Find Research Groups page for students will have 5 drop-down menus. The first is the major, where they will be able to select their engineering major. The second is which year they are in (1st year, 2nd year, etc.) The 4th is a drop-down menu of the courses taken. Here they will check off the courses they have taken. The 5th is a drop-down menu of any skills they have (e.g. C/C++, Javascript, CAD). The 6th is any UIUC RSOs they are in.

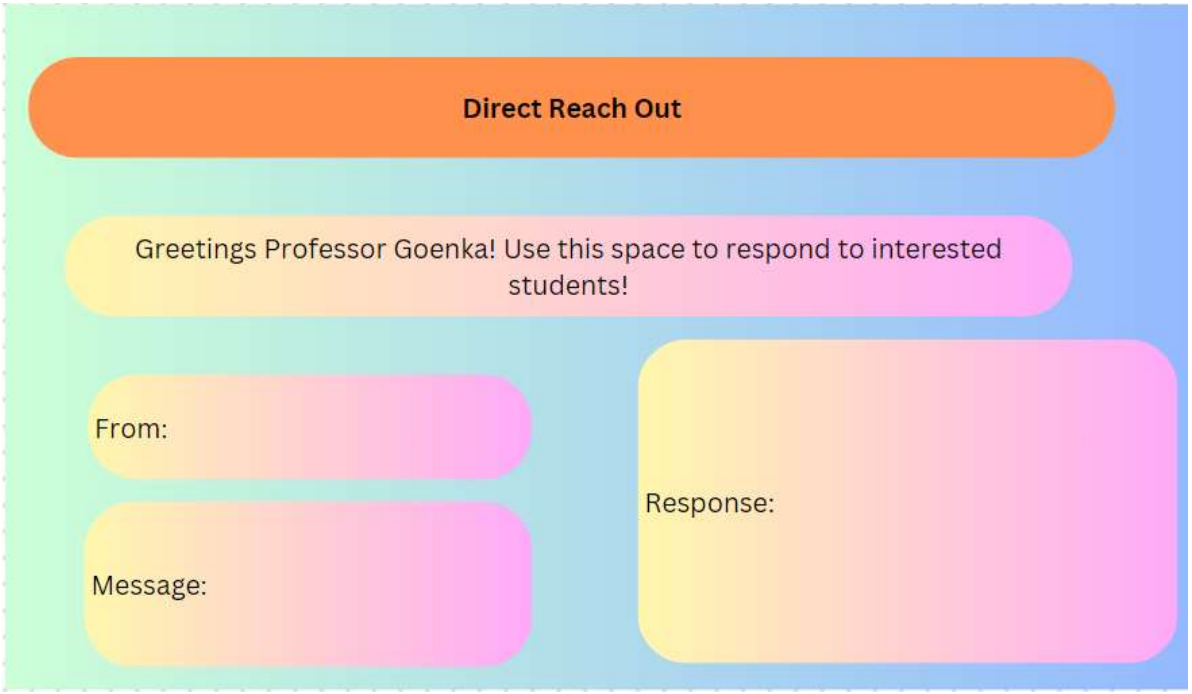
Students also have the option to click on the Choose Your Adventure tab. This is specifically designed for students who feel like they don't have the skills to apply for a position and don't know where to begin. All they have to do is select a drop-down menu for their major, year, and interests. Then they will get a curated map of courses to follow, RSOs to join, and skills to gain if they want to get research in their particular interest field.

The last tab is the Direct Reach Out. This will serve as a method by which professors and students can interact with each other. Students can use this tab to DM professors from their curation from the "Find Research Group" tab and message them about their interest in joining a professor's research project. The professor's version of the DM will consist of the same layout, where they will be able to respond to students.

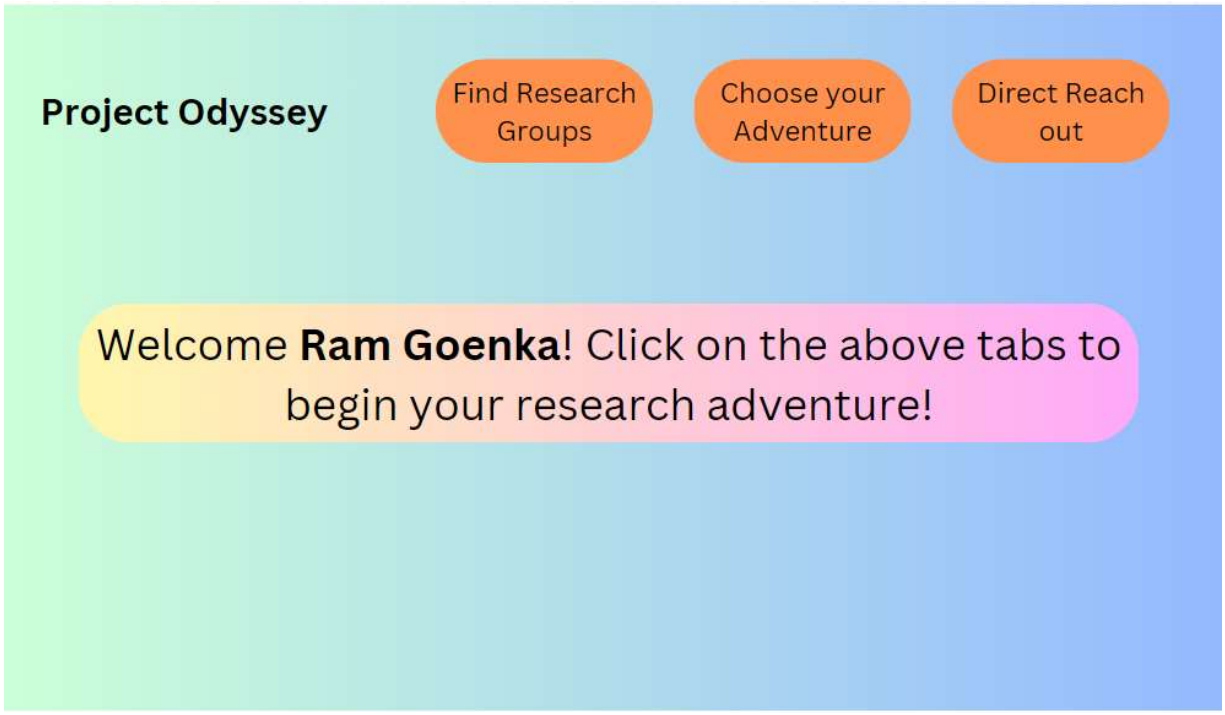
Login page:



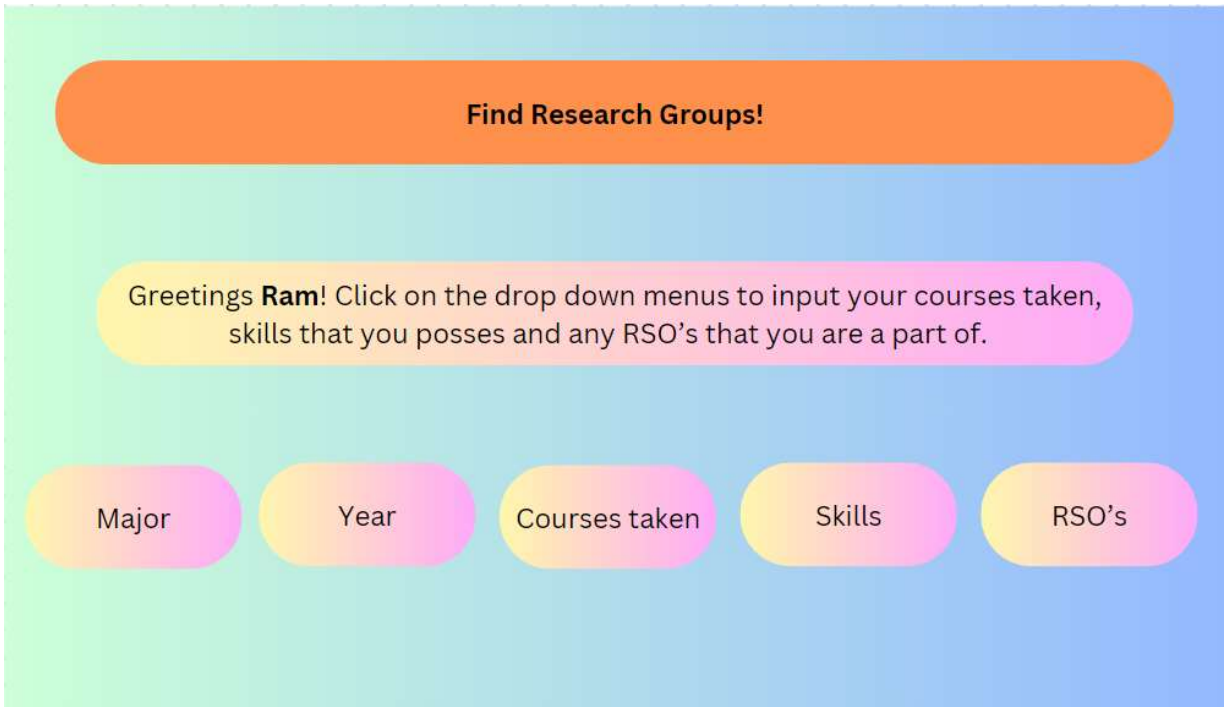
Post login page for professors:



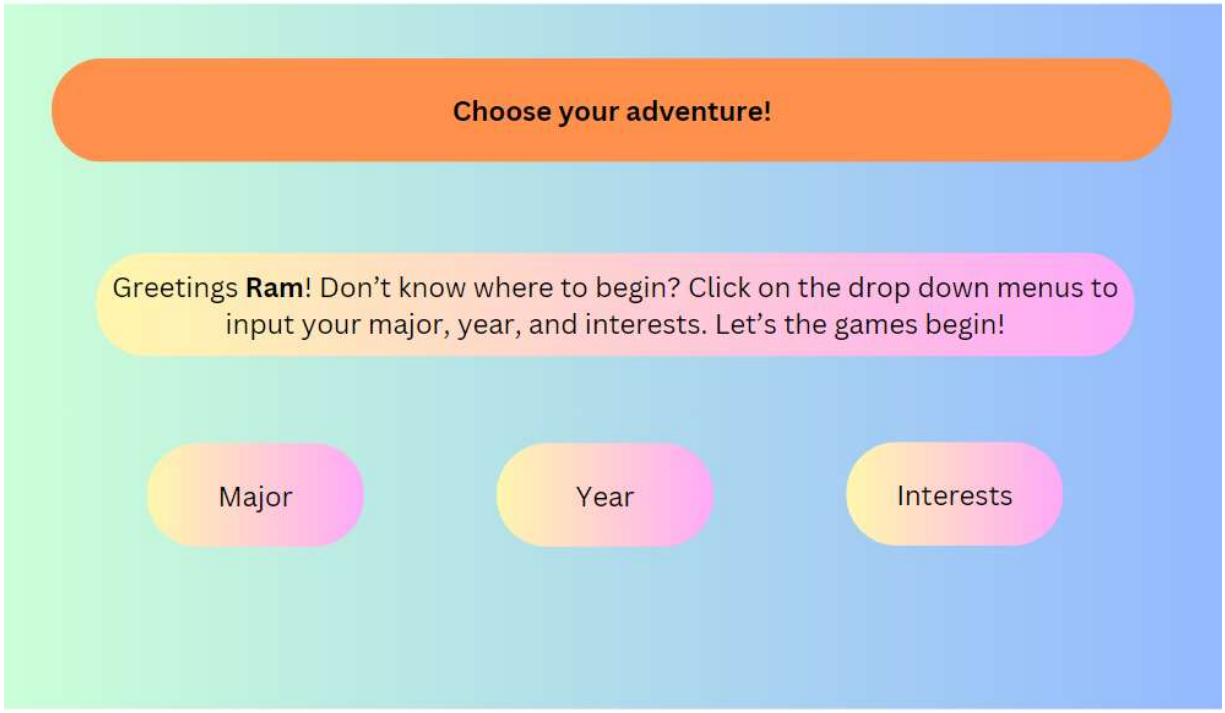
Post-login page for students:



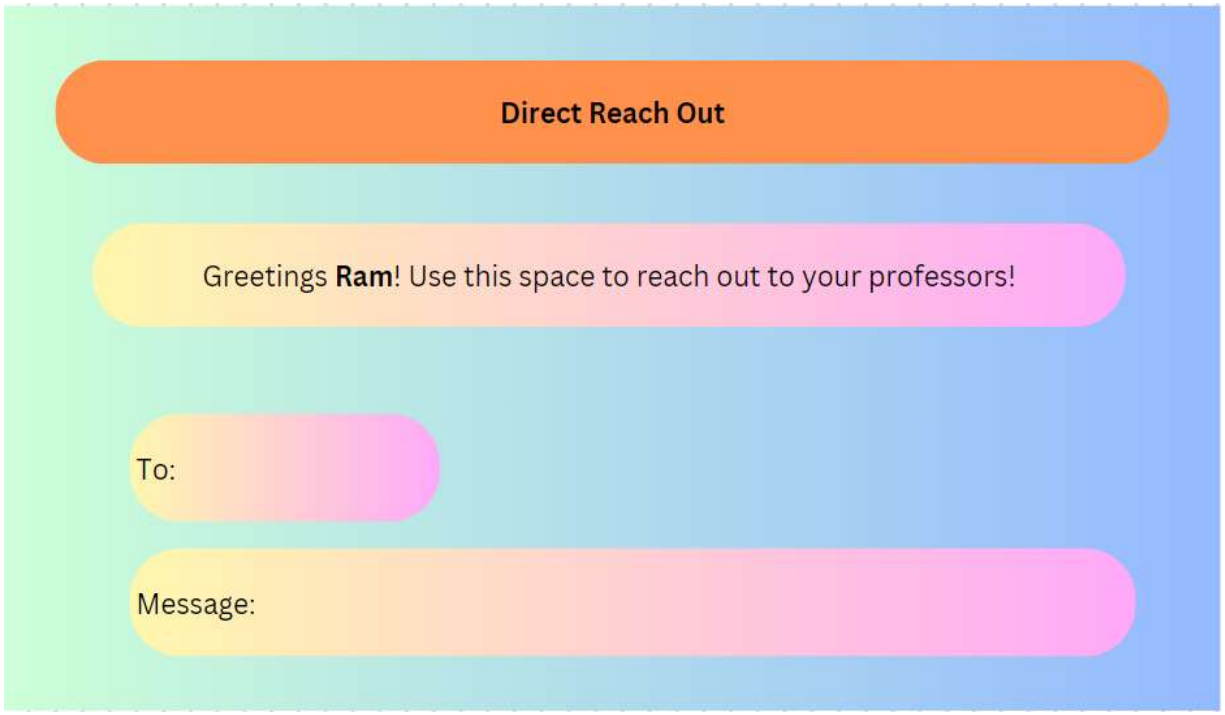
Find Research Groups Page for students:



Choose your own adventure page for students:



Direct Reach out page (for students):



Project Work Distribution

Achintya: Achintya is the project manager for the team project. He will be working on implementing the back end for the web application and assisting with the database development.

Ananya:
Ananya will work on implementing the back end and assisting with the database development. Ananya will work on documenting the process throughout the project.

Ivan: Ivan will work on implementing the back-end and assisting with database development. Ivan will assist Ananya in working on the documentation for our project.

Ram: Ram will be working on the front end of the web application. He will be utilizing React.js to develop the front-end components of the web application. In addition to working in the front-end, he will also be working on scraping data from our chosen database of professors (https://experts.illinois.edu/en/persons/), Illinois experts.