Design Journey Part 2

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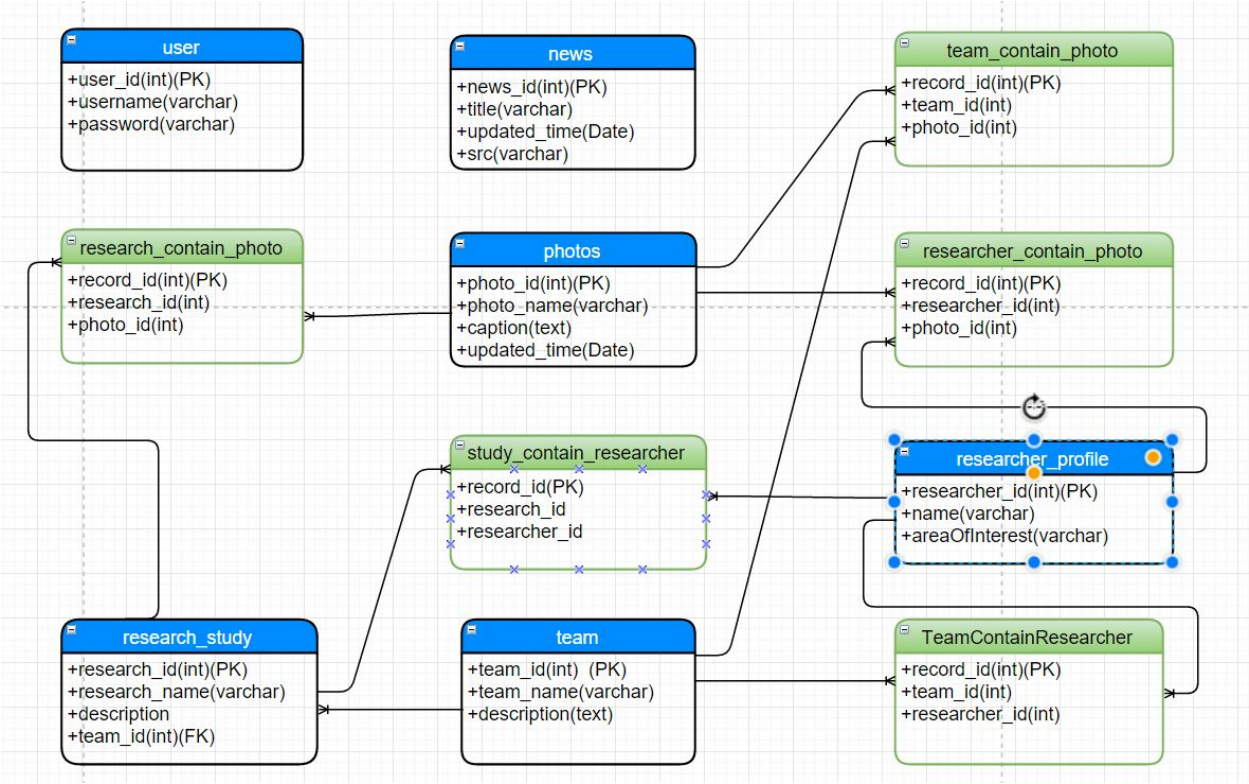
Section: 201

Part 1: Database Design

Conceptual ER Diagram

The following Diagram is the entity relationship for our database. As you can see, all the relationship implemented in the diagram are one-to-many relationship.



Database Description

The relationship above are implemented based on the following rules.

1. **Store user information.** A user table has been maintained in the database to store information of administrators so that they can login and update the contents of the lab website.
2. **Store news information.** We are providing an API to users so that they can edit news or events and then publish them. In this case, all user edited contents has been saved into a .txt file, together with HTML and CSS. For this reason, this table has no relation with others.

3. **Team, research_study and researcher_profile.** These three entities are closely related to each other. A record will be created in team table for every team in the lab. Each researcher in the lab will have his own record in researcher_profile table. The same happens to every study that the lab used to work on or has been working on. Currently we assume that each study can only be done by one team and a team can have many studies. In addition, a team have many researchers, a researcher can involve in many teams. A researcher may participate in more than one study, and a study definitely requires more than one researcher.
4. Team, research_study and researcher_profile all maintain a many to many relationship with photos, since we will allow user to upload more than one profile photos while they create a new team, study, or researcher profiles for the lab, and a photo may be used by different entities.

Part 2: Website Layout

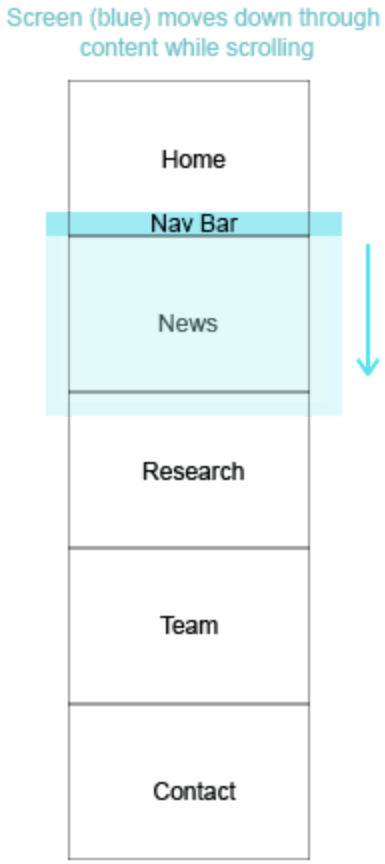
Main navigation	**Sub category**	**Content**
Home	About	**Home Page:** Give a brief introduction to the lab, animated logo at the top **About:** A two paragraph summary of the Organizational Robotics lab provided by our client.
News	Current Update Past Updates	**News:** The client can access this feature to writes updates about the lab or current studies. **Current Update:** The two latest news update from, submitted by an admin. **Past Updates:** A collapsible form that allows users to see past news updates from admins. As an admin, the client will be able to add new updates or delete old ones.
Research	Current Studies Past Studies	**Research:** Lists all the present and past research opportunities from the Organizational Robotics Lab. **Current Studies:** A paragraph summary for each of the current studies in the lab and their researchers. Our client will provide us with

		the summaries and designated researchers. **Past Studies:** A collapsible section will show all of the past studies of the lab, in the same format as Current Studies. As an admin, the client will be able to add new studies or delete old ones.
Team	Profile Pictures About Personal Info Contact Info	**Team:** Shows all current graduate and undergraduate researchers involved with the lab (14 total). The client will provide this information. **Profile Pictures:** Each researcher will have a CSS-styled profile picture, to the right of their info. **Personal Info:** Each researcher will have a small introduction and list the studies they are working on. **Contact Info:** Each researcher will have their email listed so that visitors to the site will be able to contact them through an outgoing PHP form. As an admin, the client will be able to add new researchers or delete old ones.
Contact	Contact Form	**Contact Form:** A section detailing the main email, number, and address of the lab. This information will be provided by the client.

Navigational Structure

Our client specifically requested that the entire website be located on one page. To accomplish this, we are considering a navigational bar that is fixed at the top of the screen. However, each section of the website (About, Team, Research, etc.) is located one right below the other. The sections will be separated by color and title. If a user would like to jump to any section without wanting to scroll to it, the navigational bar can easily take them there. We designed our navigation categories to fit our client's modern and simple design request. Our "About" is located at the top to get visitors to the site a small introduction to the lab. "News" and "Research" are featured directly after to show the principal information about the lab, as

requested by our client. Meanwhile, "Team" and "Contact" are located at the bottom in case any user is interested in contacting researchers after having read through the lab's studies. A simple diagram is located below.



Part 3: Interactive Functionality

The main interaction of our site will come with the login feature and in the contact section. In these, we will need to include utilizing PHP session variables so that an admin is able to add updates to the News section of the site and PHP form validation for our contact form. These interactive features are needed because our client requested a page of the site dedicated to current lab updates and other news and the ability to add these posts himself. For this reason, we decided it would be best to implement a login system. Our client also expressed that he would like the website visitors to be able to reach him directly via email through the site, and we plan to accomplish this with a PHP-validated form.

PHP Interactivity

Login functionality. This is where the bulk of our PHP interactivity comes from. We will use session variables and functions to allow an admin (our client or members of his team) to login and add posts to the News section of the site. We will use mySQL to ensure that the login information is correct and password_hash to make sure that the passwords themselves are not present anywhere in the code. We will also include a log out option once the logged-in user has made all changes he or she wishes to make.

Contact form. We plan to include a contact form and to validate each inputted field with PHP. The form itself will be HTML, but we will use PHP to access the input for each field and make sure that each input is acceptable (e.g., that names are only characters, that emails are actually emails). We will also use PHP to place a character limit of 500 for each message sent to the lab. If each field is properly entered, this will be sent to the lab. We will use functions such as $_POST, isset, and preg_match with regular expressions to perform these checks.

Updating the database. We will use PHP and mySQL elements to update the database as new information is added to the site by logged-in users. This includes utilizing mysqli() functions and PHP validation (as described above). We will include these when an admin adds updates to the news section or wishes to add a new research team member profile to the team section. We will use PHP forms so the user can add this information into the database seamlessly and use mySQL to actually enter this into our database. The user will also have the option to remove team members or updates.

JavaScript Interactivity

The majority of our interactive functionality will come from PHP, as described above. However, there will be some elements of JavaScript used. For example, we plan to include a function that will ask the user to confirm submission before contacting the lab or researchers directly. We will do this by using JavaScript onClick functionality. We are also currently working on having our website scroll smoothly from section to section, which will involve using jQuery. This is still currently a work in progress.

Compared to the first milestone, did you make any changes to your plan to use the existing libraries (e.g. editor.js, jQuery Cookie, Image Sliders, jQuery) for the site?

As mentioned above, we might be using jQuery to implement a smooth scrolling effect for our one-page designed site.