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**Data Flow Diagram for Login PHP Script**

Explanation:

User: The end-user interacts with the system through a web browser.

Web Server: The web server receives HTTP requests from the user's web browser.

PHP Script (login.php): This PHP script handles the login process. It consists of the following components:

User Input: The user provides a username and password via a web form.

Server-Side Processing: The PHP script performs server-side processing of the user's input.

Validation Process: The script validates the user's input by checking it against predefined user data (username and password pairs).

Invalid Login: If the provided login credentials are invalid, the script sends a response to the user to display an error message.

Successful Login: If the provided login credentials are valid, the script sets a session variable to remember the user's authentication state and then redirects to the dashboard page.

User Input: The user's login data is transmitted to the server as part of an HTTP POST request.

Invalid Login: If the user's credentials are invalid, the server sends a response to the user's web browser, which displays an error message.

Successful Login: If the user's login is successful, the PHP script sets a session variable to maintain the user's logged-in state and redirects the user to the dashboard page.

Web Page: The web browser renders the web page. If the login is unsuccessful, it displays an error message. If the login is successful, it loads the dashboard page.

Dashboard: The dashboard page is accessible only to authenticated users and provides access to authorized features and content.

This detailed DFD represents the various components involved in the login process, including user interaction, server-side processing, validation, and the transition to the dashboard upon successful login.

A black and white rectangular object with text

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**Snapshots of my Website:**

Homepage:

A computer and a mug on a table

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A group of people looking at a computer

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A group of people sitting on a table looking at a computer

Description automatically generated

A group of people in a classroom

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**Description of my Homepage:**

The homepage of the provided HTML code is an essential part of the website for the "Virtual Study Room" platform. It serves as the initial landing page for users and provides an introduction to the platform's key features and purpose. Let's take a closer look at the components of the homepage:

1. \*\*Header\*\*:

- The header contains the title "Welcome to the virtual study room." This title serves as a welcoming message and an immediate indication of the website's purpose.

2. \*\*Navigation Bar\*\*:

- A navigation bar (`<nav>`) is present, offering a menu of links to various sections and pages. These links likely allow users to navigate to different parts of the website, including their profile, login, study goals, virtual study room, schedule, chats, finding friends, an "About Us" page, and a "Donate" page. This navigation bar provides easy access to different features of the platform.

3. \*\*Main Content\*\*:

- The main content is organized into sections, each enclosed in a `<section>` element. The homepage consists of three primary sections:

a. \*\*"About Us" Section\*\*:

- This section provides information about the platform. It includes:

- A title ("About Us") for the section.

- An image that represents the virtual study room, allowing users to visualize the environment.

- A descriptive paragraph that explains the purpose and benefits of the virtual study room. It mentions features like remote and collaborative learning, access to resources, and support services.

b. \*\*"My Courses" Section\*\*:

- In this section, users can explore their enrolled courses. It includes:

- A title ("My Courses") for the section.

- An image that might relate to the course content.

- A list of course links, where each link likely leads to a specific course or subject.

c. \*\*"Find Friends" Section\*\*:

- This section focuses on social interaction and collaboration among students. It includes:

- A title ("Find Friends") for the section.

- An image representing social connections.

- A description of the "Find Friends" feature, explaining how users can connect with others based on subjects, interests, or study goals.

- A call-to-action button ("Find Friends") that encourages users to utilize this feature.

4. \*\*Footer\*\*:

- The footer (`<footer>`) is at the bottom of the homepage.

- It includes a call-to-action with a title ("Ready to boost your studies?"), an image to emphasize the message, and a button ("Get Started") that encourages users to take action and explore the platform.

The homepage aims to provide users with an overview of the virtual study platform's purpose and features, guiding them to explore different sections of the website. The combination of informative content, imagery, and navigation options allows users to quickly understand what the platform offers and how to get started.

**About Us page:**

A screenshot of a website

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The "About Us" page is a crucial section of the website for the "Virtual Study Room" platform. It provides detailed information about the platform's history, mission, and how users can support it. Let's explore the key elements of this "About Us" page:

1. \*\*Header\*\*:

- The page features a header with the title "About Us." The title is styled with a black color, making it prominent and easy to identify.

2. \*\*Main Content\*\*:

- The main content is structured into sections enclosed within `<section>` elements. Each section focuses on a specific aspect of the platform's story and purpose.

a. \*\*"Our Story" Section\*\*:

- This section provides an overview of the platform's history and purpose. It includes:

- A title ("Our Story") for the section.

- A descriptive paragraph explaining that the platform is designed to provide a dynamic and interactive learning environment. It emphasizes collaboration, accessibility, and support within a virtual setting.

- Information about the platform's founding in 2020 by educators and tech enthusiasts with a clear mission.

b. \*\*"Our Mission" Section\*\*:

- This section outlines the mission and goals of the platform. It includes:

- A title ("Our Mission") for the section.

- A descriptive paragraph detailing the platform's commitment to empowering learners. It lists core objectives, such as facilitating remote and collaborative learning, offering access to study resources, promoting group work, and providing support services.

- A bulleted list that summarizes the key elements of the mission.

- A paragraph emphasizing the commitment to enhancing the learning experience and helping students worldwide achieve their academic and personal goals.

c. \*\*"Support Us" Section\*\*:

- In this section, users are encouraged to support the platform. It includes:

- A title ("Support Us") for the section.

- A paragraph inviting users to make a donation if they find the platform valuable. It highlights how contributions help maintain and improve services for students and learners.

- A call-to-action button ("Donate") that links to the donation page ("donate.html").

3. \*\*Footer\*\*:

- The page concludes with a footer that displays the copyright notice ("&copy; 2023 Virtual Study Room").

The "About Us" page serves the purpose of introducing users to the platform's background, mission, and how they can contribute to its mission by making a donation. The black title color helps draw attention to the page's central message and adds to the overall visual appeal. This information is crucial for users who want to understand the platform's values and objectives.

**Brief description of my PHP Code’s functionality:**

The provided PHP code is responsible for handling user authentication for a basic login system. Here's an explanation of the functionality of the code:

Access the code via clicking this link: <https://github.com/avneeshnaha/Semester-Project-123.git>

1. \*\*User Data Array\*\*:

- At the beginning of the script, an array named `$users` is defined. This array stores sample user data, including usernames and passwords. In a real-world application, this data would typically be retrieved from a database.

2. \*\*Session Start\*\*:

- The `session\_start()` function is called to initiate a PHP session. Sessions are used to store user-specific information across multiple pages and requests.

3. \*\*Form Handling (POST Request)\*\*:

- The code checks if the current request method is POST. This is typically the method used for form submissions (e.g., when a user submits their login credentials).

- If the request method is POST, the code proceeds to handle the login attempt.

4. \*\*Login Attempt\*\*:

- The code retrieves the username and password submitted via the POST request. These values are stored in the variables `$username` and `$password`.

5. \*\*User Authentication\*\*:

- The code then iterates through the `$users` array to compare the submitted username and password with the stored user data.

- If a matching user is found (i.e., the submitted username and password match a user in the array), the code sets a session variable named `$\_SESSION['username']` to the submitted username. This session variable is used to identify the authenticated user in subsequent pages.

6. \*\*Successful Login Redirect\*\*:

- After a successful login, the code redirects the user to the "dashboard.php" page using the `header("Location: dashboard.php")` function.

- The `exit()` function is called to terminate the script, ensuring that no additional HTML content is output.

7. \*\*Login Error Handling\*\*:

- If no matching user is found in the `$users` array, an error message is stored in the `$error` variable. This message indicates that the username or password is invalid.

8. \*\*HTML Login Form\*\*:

- The code contains an HTML form that allows users to input their username and password for login.

- The form submits a POST request to the same page ("login.php") for processing.

9. \*\*Error Display\*\*:

- If an error message exists in the `$error` variable (indicating an unsuccessful login attempt), it is displayed to the user in red text.

In summary, this code provides a basic login functionality where users submit their credentials, and the script checks if the provided information matches any user data in the `$users` array. If a match is found, the user is authenticated and redirected to a dashboard page. If there is no match, an error message is displayed. Note that in a real-world application, user data would be stored securely in a database, and password hashing and other security measures would be employed for user authentication.

Flowcharts related to my website and user journey

Flowchart #1 – Simple Login Journey

A screenshot of a diagram

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The Image above shows a simple login journey for a user on my website. Steps in the Login Journey:

1. Access the Login Page: Users start by accessing a login page on a website or application.
2. Enter Credentials: Users enter their login credentials, which often include a username or email address and a password.
3. Submit the Form: Users submit the login form with their credentials.
4. Server-Side Validation: Is the credentials or data valid? The server checks the entered credentials against the database to verify if they are correct. This includes checking the username or email's existence and comparing the provided password with the stored, hashed password.
5. Authentication: If the credentials are valid, the user is authenticated, and a session is created to remember the user's identity.
6. Access Denied: If the credentials are invalid, users may receive an error message and are not granted access. They may be prompted to try again or recover their password.
7. Access Granted: If the credentials are valid, users may continue with their journey on my website.

Flowchart #2 – Toggle to ‘My Courses’ Page

A screenshot of a computer

Description automatically generated

The above flowchart depicts an easy flow towards logging in to the website and then accessing ‘My Courses’ page to find the courses a student has saved. This means that data from backend or the database is going to be needed in order to be shown on the website.

The user journey to access the "My Courses" page on my website or application typically involves the following steps:

1. Login to Website: The user starts by logging onto the website or application's home page.
2. Find "My Courses": In the navigation menu, the user identifies the "My Courses" link or menu item.
3. Click on "My Courses": The user clicks on the "My Courses" link to access the dedicated page for their courses.
4. My Courses Page: Upon clicking the link, the user is directed to the "My Courses" page, which displays a list of courses they are currently enrolled in or have access to.
5. Course Information: On the "My Courses" page, the user can view information about each course, such as the course name, instructor, schedule, and any additional details.
6. Interact with Courses: Depending on the design and functionality of the page, the user may have the option to interact with their courses, such as accessing course materials, assignments, grades, or discussion boards.

(Note: I have not coded this part of the milestone yet.)

This user journey allows users to easily access and explore their courses and related content, making it convenient for students and learners to manage their educational materials and progress.

Flowchart #3 – Toggle to ‘Find Friends’ Page

A screenshot of a computer

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The user journey to access the "Find Friends" page on my website or application typically involves the following steps:

1. Login: The user starts by logging onto the website or application's home page.
2. Find "Find Friends": In the navigation menu, the user identifies the "Find Friends" link or menu item.
3. 4Click on "Find Friends": The user clicks on the "Find Friends" link to access the dedicated page for finding friends or connections.
4. Find Friends Page: Upon clicking the link, the user is directed to the "Find Friends" page, which provides options to search for and connect with other users.
5. Search and Filters: On the "Find Friends" page, users may have the option to search for friends based on specific criteria such as interests, subjects, location, or other relevant filters.
6. View Profiles: Users can view profiles of potential friends or connections to learn more about them. Profiles may include information about the user, their interests, and their study goals.
7. Send Friend Requests: If a user wants to connect with another user, they can typically send a friend request or connection request.
8. Accept or Decline Requests: If a user receives friend requests from others, they can accept or decline these requests, building their network.

(Note: several elements of this code have not been revised yet.)

This user journey allows users to discover and connect with like-minded individuals, fostering a sense of community and collaboration within the platform. It is commonly used in social networking or community-oriented websites and applications.

Flowchart #4 – Click on ‘Virtual Study Room’

A diagram of a computer program

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The user journey to access the "Find Virtual Study Room" page on my website or application typically involves the following steps:

1. Access or login to the Home Page: The user starts by accessing the website or application's home page.
2. Find "Find Virtual Study Room": In the navigation menu, the user identifies the "Find Virtual Study Room" link or menu item.
3. Click on "Find Virtual Study Room": The user clicks on the "Find Virtual Study Room" link to access the dedicated page for finding virtual study rooms or study groups.
4. Virtual Study Room Page: Upon clicking the link, the user is directed to the "Virtual Study Room" page, which provides options for discovering study rooms and groups.
5. Search and Filters: On the "Virtual Study Room" page, users may have the option to search for virtual study rooms based on specific criteria, such as subjects, topics, availability, or location.
6. Browse Study Rooms: Users can browse a list of available virtual study rooms or groups, each with descriptions and details about the focus of the study sessions.
7. Join or Create Study Groups: Users have the option to join existing virtual study rooms or create their own study groups, depending on their preferences and needs.

This user journey enables users to connect with fellow learners and access virtual study environments that promote collaborative learning and mutual support. It's particularly valuable for students and individuals seeking to study together online.

Flowchart #5 – Click on ‘My Schedule’ Page

A diagram of a flowchart

Description automatically generated

The user journey to access the "My Schedule" page on my website or application typically involves the following steps:

1. Access the Home Page: The user starts by accessing the website or application's home page.
2. Find "My Schedule": In the navigation menu, the user identifies the "My Schedule" link or menu item.
3. Click on "My Schedule": The user clicks on the "My Schedule" link to access the dedicated page for managing their schedule.
4. My Schedule Page: Upon clicking the link, the user is directed to the "My Schedule" page, which displays their personal calendar or schedule.

This user journey provides users with a convenient way to organize and keep track of their appointments, classes, and study sessions, helping them manage their time effectively and stay on top of their commitments.

Flowchart #6 – My Chats Page

A diagram of a computer

Description automatically generated

The user journey to access the "My Chats" page on my website or application typically involves the following steps:

1. Access the Home Page: The user starts by accessing the website or application's home page.
2. Find "My Chats": In the navigation menu, the user identifies the "My Chats" link or menu item.
3. Click on "My Chats": The user clicks on the "My Chats" link to access the dedicated page for managing their chats and messages.
4. My Chats Page: Upon clicking the link, the user is directed to the "My Chats" page, which displays a list of their recent conversations or chat threads.

This user journey provides users with a seamless and organized way to manage their chat conversations and engage in real-time communication with others, enhancing their online interaction and collaboration.

Flowchart #7 – ‘About us’ Page

A diagram of a flowchart

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The user journey to access the "About Us" and "Donate" pages on a website typically involves the following steps:

Access the Home Page:

The user starts by accessing the website's home page, often the landing page when they visit the site.

Navigate to "About Us":

2. The user looks for a navigation menu or links that help them explore different sections of the website.

In the navigation menu, the user finds and clicks on the "About Us" link or menu item.

The user is directed to the "About Us" page, where they can learn about the organization, its mission, history, and other relevant information.

Navigate to "Donate":

5. While on the "About Us" page, the user may find information about supporting the organization.

The user may click on a "Donate" link or button that is often provided on the "About Us" page.

The user is directed to the "Donate" page, where they can contribute to the organization by making a donation.

Make a Donation:

8. On the "Donate" page, the user has to first login to the website. Then they can specify the donation amount, payment method, and any additional details required for the donation.

After providing the necessary information, the user confirms and completes the donation transaction.

Return to Home Page or Explore Further:

10. Following the donation or exploration of the "About Us" and "Donate" pages, the user can choose to return to the home page or continue exploring other sections of the website.

This user journey allows users to access information about the organization, learn about its mission, and make contributions to support the cause. It's a common path for users who are interested in both understanding an organization's purpose and providing financial support.

Pointer to my repository: <https://github.com/avneeshnaha/Semester-Project-123>

<https://github.com/avneeshnaha/Semester-Project-123.git>

Self Evaluation: 2/4