



INFORMATICS
INSTITUTE OF
TECHNOLOGY

INFORMATICS INSTITUTE OF TECHNOLOGY

In Collaboration with

UNIVERSITY OF WESTMINSTER

6COSC022C.1

Advanced Server-Side Web Programming

Coursework 1

Student IIT ID	20191258
Student UOW ID	W1790276
Student name	Nanduni Mihisaree Gajanayake
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Question 01

The author has chosen to continue the project with "A social networking application". It has also been decided to carry out with the photography domain as it is specified. The application is driven towards the people interested in photography and enthusiasts them upon different scenarios of the images. The application would allow users to determine their photography skills methodically in a unique manner. I chose this domain because I have a personal interest in photography, which will provide me with a consistent drive to develop the application properly.

Question 02

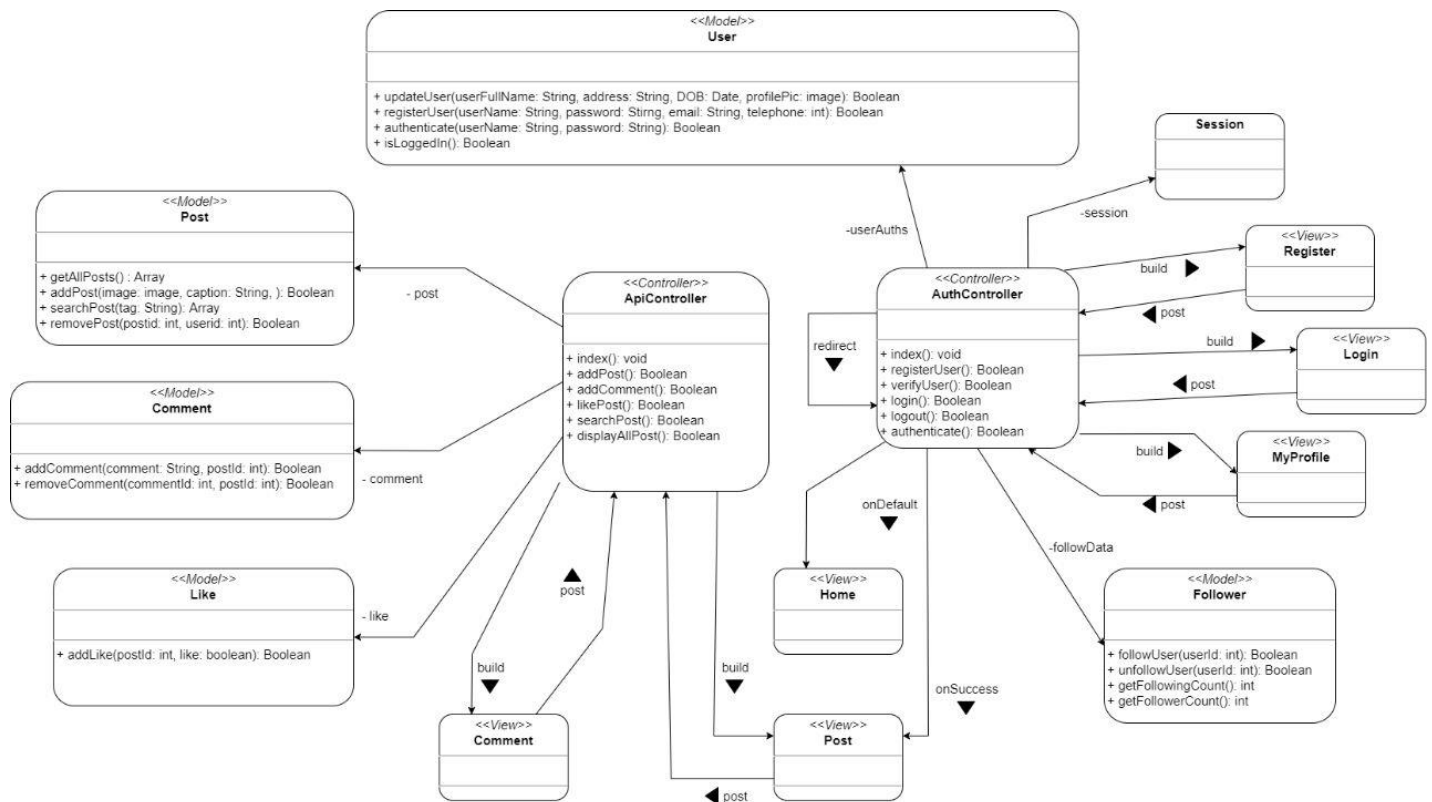
The application requirements that the author is willing to introduce are listed in this section of the paper. It is split into three categories such as essential, desirable, and luxury since there are different needs for each.

Essential	<ul style="list-style-type: none">• Register• Create an account• Login / Logout• Upload content• Show contents of all users
Desirable	<ul style="list-style-type: none">• Add comments• Finding and browsing content• Add user profile photo• Add captions to the content
Luxury	<ul style="list-style-type: none">• Follow existing users of the application.• Show the count of followings and followers.• Show user's content count.• Maintain administration account

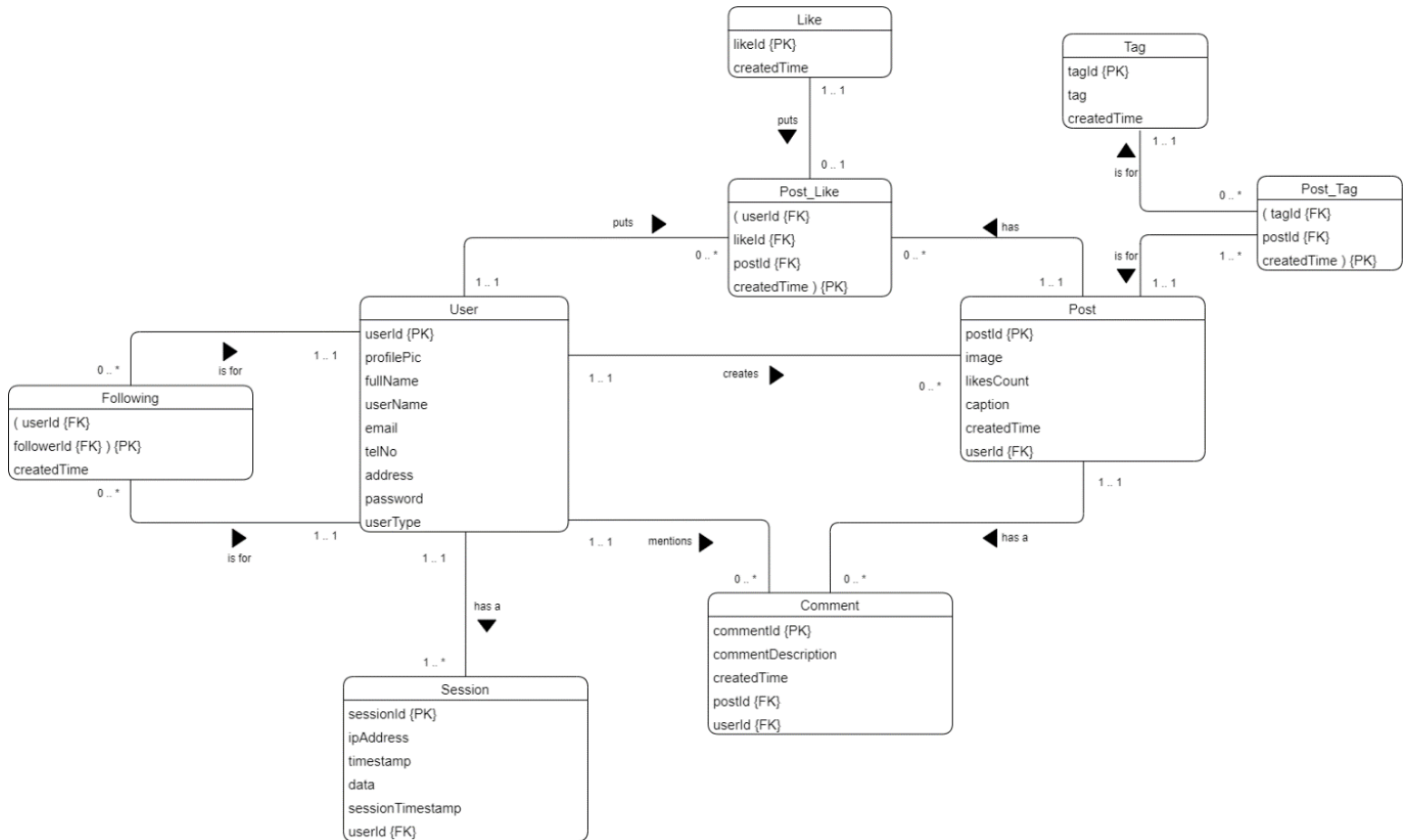
- Administrator can remove irrelevant content.
- Administrator can ban users.
- Ability to sort content
- Show posted time of the post

Question 03

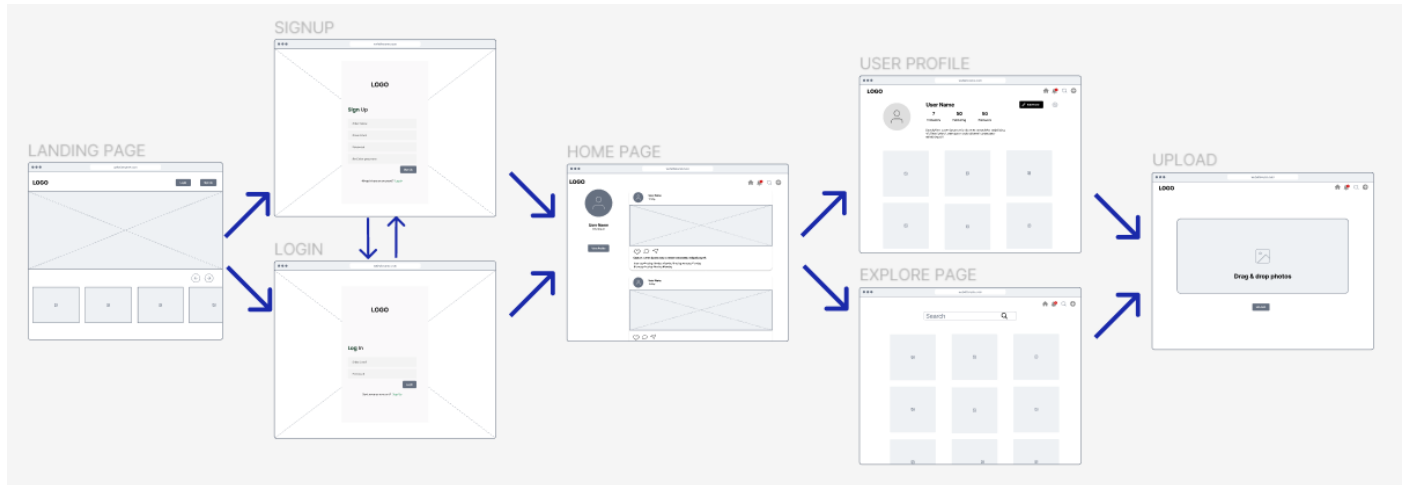
(I) Class Diagram



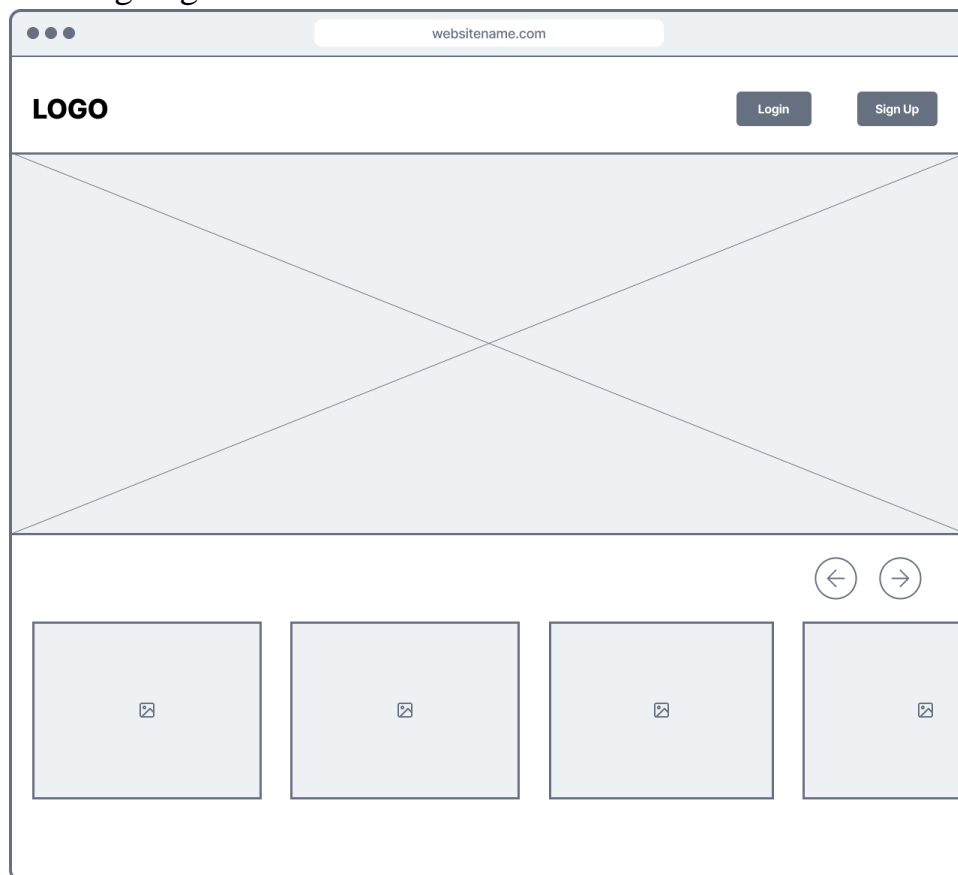
(II) Database Diagram



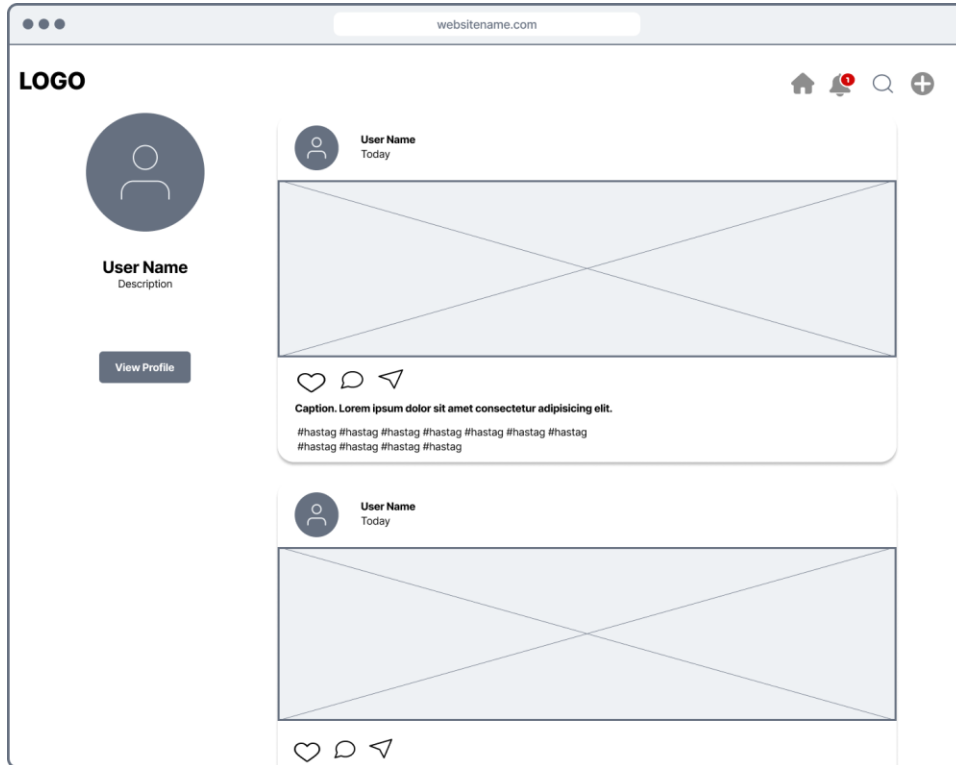
(III) Wireframe



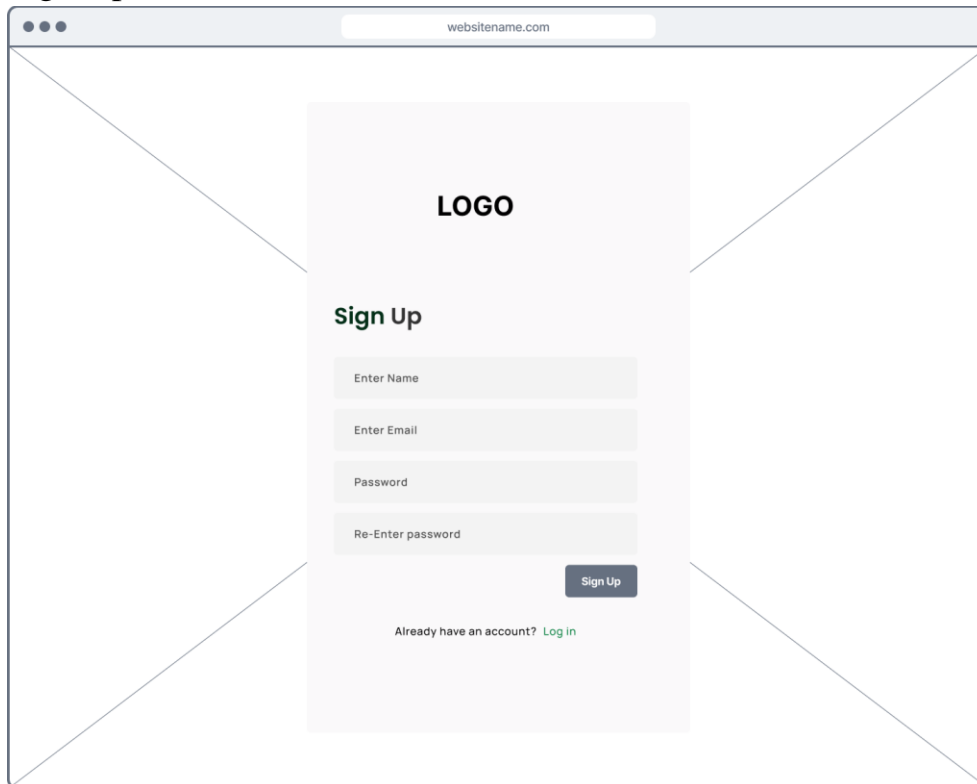
Landing Page



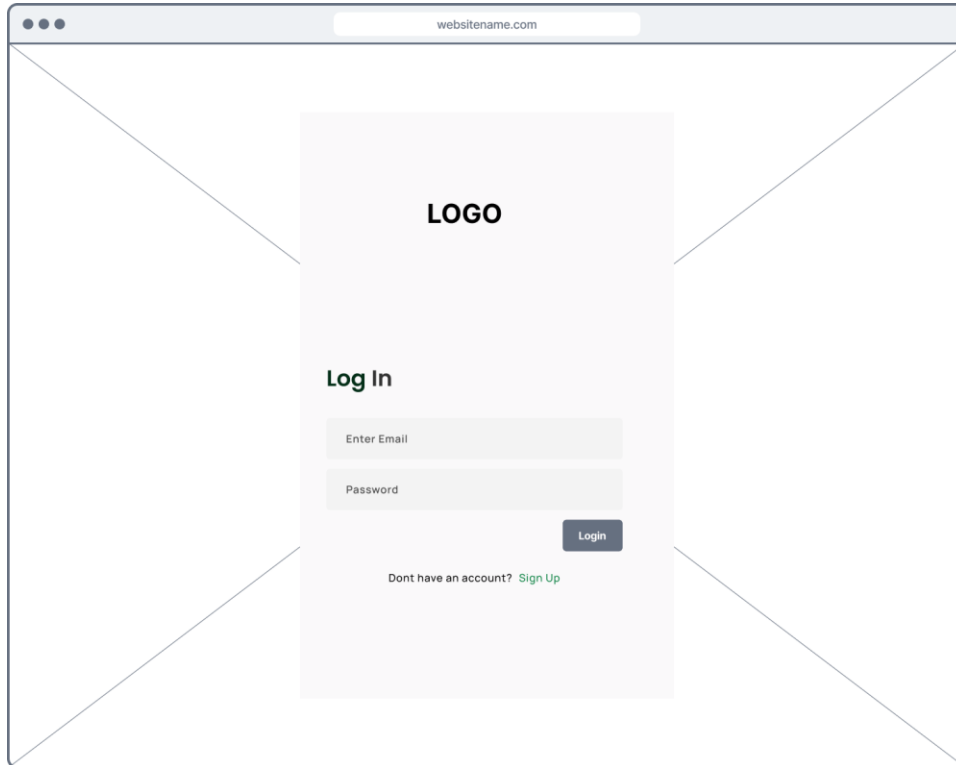
Home Page



Sign Up

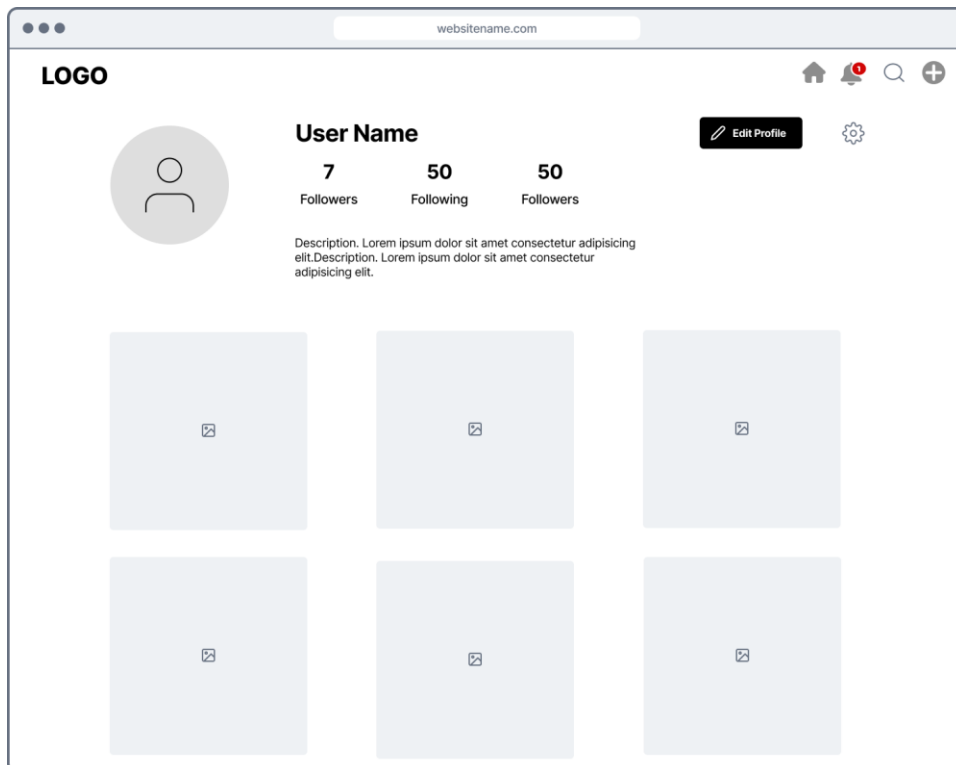


Log In



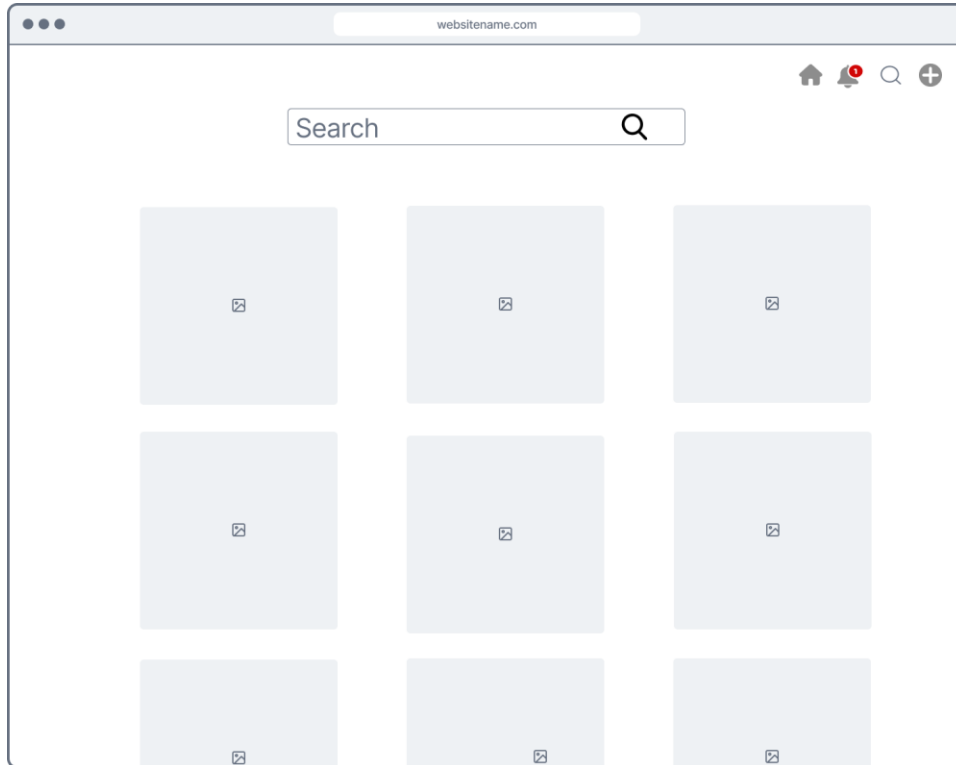
A mockup of a web browser window showing a login page. The browser's address bar displays 'websitename.com'. The page features a large, light gray rectangular area in the center. At the top of this area is the word 'LOGO' in bold. Below it is the text 'Log In'. Underneath are two input fields: 'Enter Email' and 'Password'. To the right of the 'Password' field is a dark gray button labeled 'Login'. Below the input fields is a link that says 'Dont have an account? Sign Up'.

User Profile

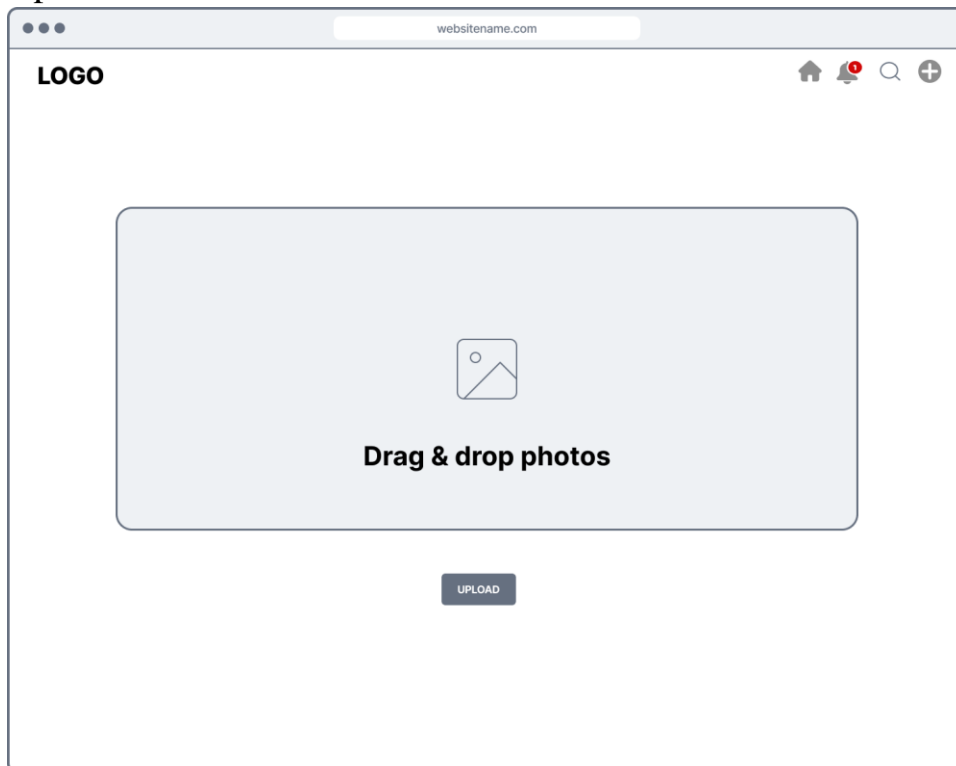


A mockup of a web browser window showing a user profile page. The browser's address bar displays 'websitename.com'. The page features a header with the word 'LOGO' on the left and navigation icons (home, notifications, search, and a plus sign) on the right. Below the header is a user profile section. On the left is a circular profile picture placeholder. To the right of the profile picture is the text 'User Name' in bold. Below 'User Name' are three statistics: '7 Followers', '50 Following', and '50 Followers'. To the right of these statistics is a dark gray button labeled 'Edit Profile' and a gear icon. Below the statistics is a description: 'Description. Lorem ipsum dolor sit amet consectetur adipiscing elit. Description. Lorem ipsum dolor sit amet consectetur adipiscing elit.' Below the description are six square placeholders for posts, arranged in two rows of three. Each placeholder contains a small icon of a document with a checkmark.

Explore Page



Upload



Question 04

Server-Side web development is the server-based program responsible for creating the content of web pages. Such as using a database query, Database-related operations, Read/Write to a server file, Communicate with other servers, Define web application structures and Deal with user feedback.

Since this allows us to effectively send content customized for specific customers and so significantly improve user experience, server-side programming is quite helpful. The fundamental benefit of server side scripting is that no raw data is ever carried across the internet because all data processing is done entirely on the server side rather than the client side.

Programming languages for dynamic scripts have entered the general purpose programming language market. They offer autonomous memory management and trash collection, they are dynamically typed, they emphasize succinct syntax, majority of them are interpreted (instead of compiled). These attributes are desirable for web application development because they enable quick prototyping, quick code modifications, and quick testing procedures.

There are several programming languages for server side web development. Such as PHP, Python, Ruby, C++, Java etcetera.

Python was not initially designed with the building of web applications in mind, hence it took some time before web scripting in Python became widespread. Python enables quick work and more efficient system integration. Since its creation in the 1990s, it has been extensively utilized for processing system administration duties and web programming. Its grammar is comprehensible and precise. Since its inception, Python has been an object-oriented language, but it is not restricted to this paradigm and also allows procedural programming and a few functionalities. As there are few keywords, it is asserted that its syntax is simple to read and comprehend. One key syntax feature sets Python syntax apart from PHP and Ruby: code blocks must be indented. The majority of other programming languages do not require the source code to be correctly structured, therefore this means that it is always in that format. Semi-colons are

permitted but not required when using Python to separate statements. Python has a solid type system. There is a traceback of recent calls that provides debug information for runtime issues.

Node.js is a framework for quickly creating scalable network applications that is based on Chrome's JavaScript runtime. Node.js is lightweight and efficient because to its event-driven, non-blocking I/O approach, which is ideal for data-intensive real-time applications that leverage distributed devices.

Ruby on Rails is the only significant web framework available for the language. It uses CGI as a gateway but also offers a web server of its own, which is solely advised for development and testing. Python-like in appearance, but with slightly different semantics Ruby is entirely object-oriented and has a syntax similar to Smalltalk. This implies that objects communicate with one another by sending messages and that primitive types are not different from complex kinds. Any message can be sent to an object, and it will begin processing exceptions when it does. Every linguistic construction, even the most basic ones like assignments and if clauses, is regarded as an object that may accept messages with certain parameters. Ruby also uses newline characters to divide statements, and it also allows you to finish a statement with a semicolon. Ruby employs the "do" and "end" keywords (or curly braces in a shortened form) to denote blocks but does not require indentation like Python does. Additionally, it supports meta-programming, some functional language structures, and procedural programming paradigms.

PHP (Hypertext Preprocessor) is a popular general-purpose scripting language PHP is well suited for creating websites. PHP, which includes CLI (command line interface) and GUI (graphical user interface) programs, is primarily used in dynamic Web pages. It has the benefits of high cross-platform compatibility and simple transplant. PHP was one of the first server-side languages that HTML could incorporate, making it simpler to add functionality without having to call outside files for information. With frequent updates that unlock new capabilities and introduce new features, its use has developed over time.

There are certain advantages to using PHP as a server side web development language. It's simple to learn and use. Most people could quickly and easily create a web page using a single PHP file, even without extensive knowledge or experience in web programming. Due to PHP's

enormous popularity, there are a ton of forums where experts may share their coding tips and tricks. It is free since it is open source. This makes it easier for developers to start using PHP because it can be swiftly and cost-freely installed. A large selection of PHP frameworks, including Laravel and Symfony, are also accessible freely. Companies find this feature intriguing since it lowers the cost of web development. It is adaptable: The fact that PHP is platform independent and works with the majority of web browsers as well as Mac OS, Windows, and Linux is one of its main advantages. Large selection of databases. Although PHP enables you to deal with nearly any database you require, connection is astounding. This gives developers more freedom when choosing which database is best suited for the application being built. You can utilize a variety of databases, including SQLite, MS-SQL, and MySQL. Although MySQL is a popular choice among developers, there are other options as well. Deployment using cloud services is a possibility. Cloud-based solutions are hugely popular right now, and PHP compatibility shouldn't be a concern. Numerous cloud services, like the enormous AWS, enable it. As a result, your solution may be more advantageous than you had anticipated. It is quick and safe. When using the most recent versions, PHP uses its own memory and performs well in terms of speed. Although it is crucial to highlight that PHP is neither intrinsically more or less secure than other programming languages, there have previously been concerns regarding its security.

Additionally, PHP has several drawbacks. Since PHP is a well-known open-source language, security issues have been raised. If someone finds a code weakness, the others can quickly have access to that information. This implies that the vulnerability can be exploited by knowledgeable developers for harmful purposes before the problem is resolved. As of right now, PHP does not have any libraries that can support any recent technology trends. Use another programming language, such as Python, C#, C++, or Java, if you want to start with a simple software and then turn it into something revolutionary.

PHP has advantages and disadvantages like every other programming language. And it has no intention of disappearing anytime soon. Therefore, it is absurd to hate PHP and look for little defects when you should study it and make the most of all of its benefits.

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