**Cahier des charges du projet**

**“photoStockage”**



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1. Introduction

Project overview

“photoStockage” is a website / platform that enables users to freely download and utilize high-quality photographs for any purpose. The platform also encourages users to upload and share their own photographs and experiences, creating a diverse collection of images. The core functionality of "photoStockage" includes user registration, photo uploading, photo downloading, photo saving, and liking of photos, as well as photo browsing for inspiration.

"photoStockage" addresses the need for easy access to high-quality photos without the need for expensive licenses or annoying credits to websites and creators. The service is free, allowing users to download and upload high-quality photos for personal and commercial use without legal complications. Unlike other websites that charge for commercial usage, impose heavy restrictions on usage, and have availability limitations, "photoStockage" eliminates these barriers by providing a library of images that can be used freely, as long as users agree to the terms of service. However, it is important to note that the platform cannot effectively enforce its terms of service, and users who use photos in unlawful ways will be reported to the authorities.

The target audience of the website includes photographers seeking inspiration for their next project, content creators, graphic designers, web developers, marketing professionals, small and large companies, students, and educators.

The main selling points of "photoStockage" are its free pricing model, with no hidden fees, premium memberships, or subscription-based content. Additionally, the platform's simplicity and user-friendly interface make it easy to use. The spirit of a community and the feeling of contributing to making projects better while sharing stories and experiences are also key selling points.

The main goals of this platform are to create a comprehensive, user-driven webpage for free photography sharing, fostering a community of photographers, photography enthusiasts, and users who contribute to a resource pool, and providing easy access to high-quality images for various users.

The objectives of this project are to promote the value of shared resources and open, truly free content, establish "photoStockage" as a leading platform for free photo sharing, increase brand visibility and recognition, and support the creative industry by providing a resource pool at no cost, which will enhance brand loyalty and user engagement.

Scope

The platform's features include user account creation, photo uploading, downloading, sharing, and management, advanced searching and filtering options for photos, a legal agreement confirmation for photo usage, GDPR compliance, community features such as liking photos and saving downloaded and liked photos, and a mobile-friendly design for usage on various devices.

The target browsers include all major browsers, such as Chrome, Firefox, and Edge, as well as support for older versions of Internet Explorer. The mobile-friendly user interface allows ease of use for both desktop and mobile users worldwide, as the platform is not region-locked or restrictive, making it accessible to any user with internet access.

"photoStockage" does not offer direct photo editing tools, such as cropping or adjusting lighting, as part of its features. Additionally, the platform does not support memberships, whether premium or subscription-based, nor does it offer e-commerce features for buying or selling photos or other merchandise. This means that users can access and utilize high-quality photos without any additional costs or commitments.

Future features include native support for mobile devices, the ability to comment on photos, and more extensive management of photos using albums and tags.

II. Objectives

Functional Objectives The platform/app's basic functionalities include viewing and downloading photos, uploading photos, liking photos, and storing photos in the user's profile. Additionally, users can add tags to photos, search photos based on tags, create and manage user profiles, and communicate with the administration of the platform/app via email for reports, suggestions, etc. Users will also have the ability to share personal information like CV/portfolio website and email address for communication with other members.

In more detail, users of the platform/app will have the ability to view and download photos without the need for an account or profile, but will be reminded of the possibility of creating one. This way, the user experience will not be interrupted by unnecessary steps like creating an account, if the user only wants to browse the page or download specific photos. However, they will be encouraged to do so to access more features if they find them necessary.

Also, users will have the ability to share their photos by uploading them to the platform's/app's server, editing their names and tags, and removing them or changing them for others when necessary. These actions will require a user account by registering to the website for security and usability reasons.

The users will have the ability to "like" photos by clicking on the corresponding button on each photo or simply by downloading a photo using their account. In that way, they can store photos they found inspiring for easier access to them in the future. As content creators, they will be able to view if their photos are liked by the community and measure their performance by counting how many times they were liked/downloaded.

The website will feature the ability to search photos based on tags and/or the date they were originally uploaded. This will enable users to find what they are looking for much faster and more efficiently. This is also a feature that does not require an account.

Users will have the ability to create accounts and manage them, deciding what parts of their account they want exposed to the public, such as their name or email address or portfolio site, etc. This will ensure compliance with privacy of data on the part of the website, as well as give the ability to the users to have more control over their own account, which is an important and appealing feature on modern platforms, as most of them decide on their own for the treatment of given information, by only giving the option to agree or disagree with the sharing of personal information of users.

The platform will offer the option to contact the administration directly by completing a contact form or by email for reporting suspicious or illegal acts on part of other users and for suggesting improvements to the platform. Reports will be thoroughly examined by the administration in order for actions to be taken, for example, the ban of a user, reporting an illegal action to authorities or dismissing a case for being a false claim.

Finally, the website enables and encourages its users to contact each other in order to promote the spirit of a community and to enable communication between its members.

Primary features

As mentioned above, the primary features of the website are the ability to view and download photos freely, without the need of an account and without dealing with copyrights and other legal matters that slow down the creative process.

Secondary features

As secondary features, the platform offers the ability to register an account and manage the given data, uploading photos, editing photos owned by the user that uploaded them, and the communication of members between each other and with the administration.

Unique Features

The most important unique feature the website offers is the ability to personally choose what data will be exposed to the public in order to promote your business if, for example, the user is a photographer or other content creator and needs the engagement, or hide personal information to avoid being tracked or harassed.

Non-Functional Objectives ATTENTION Performance, security, and usability features cannot be presented at the current state of the platform as they are not implemented!

Ideally, performance-wise, the objective is to have a responsive and fast platform that is able to serve photos quickly. In order to achieve this, thumbnails of photos or photos with lower resolution and quality will be displayed on the home page, and only when viewed individually or downloaded will they have their full size and quality. This way, performance will be ensured both for slower machines and for slower internet connections.

Security is a very important task and an objective that is seriously taken into consideration. Both security of personal information and security of content need to be taken into account. The backend of the website will be tested thoroughly, and the latest libraries will be used to ensure security. Data sent to the database will be sanitized and monitored both on the front-end and the back-end, and measures for allowing only specific types of content will be implemented (for example, only jpg, jpeg, gif, etc., extensions will be allowed for uploading photos).

The front-end will be tailored to each screen size so the usability of the platform will be seamless across all platforms. Calls to action, buttons, and navigating the site will be clear and obvious, so it will be easy for all users to perform these actions. Accessibility is also taken into account; the site will offer buttons with high contrast for the visually impaired, as well as big and clear text, and all photos will include automatically an alt tag for alternative text as well as the aria tag for the narrator. Furthermore, users will be able to contact the administration to suggest their own changes to be implemented.

III. Stakeholders

Project Sponsor

The project sponsor is the same individual who developed and conceptualized the project. There is no specific client in mind, and there are no plans to sell the project. The project's expectations are to create a platform that offers an enjoyable user experience and contributes to the creative community by making photo usage easier, faster, and more efficient.

Upon launch, the platform will require standard hosting fees and domain fees. Since most features are created by the owner, no additional funding will be needed in theory. Any community support or donations are welcome but not necessary.

Project Team

The platform is developed and managed solely by Sotirios NATSIOS, who assumes all responsibilities.

End Users

The platform does not target a specific age demographic or ethnicity demographic but focuses on content creators. It enables navigation and usage on any platform, including desktops with larger monitors and devices like smartphones with smaller screens.

The target audience is primarily content creators, and the platform is tailored to their needs with a variety of features mentioned in Chapter II. Objectives. Secondary users are individuals who visit the website for inspiration or to engage with the website's content creators.

IV. Requirements

Functional Requirements

User Roles

"photoStockage" offers three distinct user roles: administrative, user, and guest. The guest role allows users to view, search, and download images without the ability to like or store images for future reference. The user role builds upon the guest role, adding the ability to upload photos, edit and delete photos owned by the account, like other people's photos, and save downloaded photos to the liked album. The administrative role allows users to manage photos and users, with the exception of making changes to the website's appearance and functionality.

Use Cases

In case a user needs to download a photo, the website's flow is as follows: they access the website, navigate the home page featuring the latest uploaded photos, use the search feature if necessary, and finally, upon finding the photo, they can view a full-size and full-quality depiction and download it if they decide to do so.

Another use case scenario is the desire to share a photo with the community, edit or remove a photo from the platform. The process can be split into two types: already owning an account and not owning an account.

Non-Functional Requirements

ATTENTION

Performance, security, and usability features cannot be presented at the current state of the platform as they are not implemented!

The expected response times would ideally be under 3s. Optimizations for images and faster loading teams will be implemented as it is a crucial part of the user experience. The platform in its current state is not expected to meet heavy loads or scalability issues, but if they do happen, the solution is to divide the server into a number of servers to share traffic, improving response time.

Encryption and authentication methods have not been decided yet.

The website is designed with respect to smaller screen users and people with accessibility issues and disabilities. The user interface's goal is to offer an enjoyable experience to every user of the platform.

V. Technical Specifications

Platforms

The "photoStockage" platform is designed to be platform-agnostic, ensuring that its content is accessible and viewable across all browsers. The website's responsive design allows for seamless navigation on various devices, including mobile devices, desktops, and laptops. To ensure a smooth user experience, a stable internet connection with relatively fast speeds is required.

Technology Stack

The front-end of the platform is built using Next.js, a JavaScript framework based on the popular React library. This choice enables faster development, a more user-friendly experience, and access to a vast community of developers from the JavaScript, React, and Next.js ecosystems, thereby minimizing potential resource availability issues.

The back-end is powered by Node.js, a JavaScript framework that serves as an intermediary between the front-end and the database, as well as other middleware such as Clerk, which handles user subscription and authentication.

For data storage, MariaDB was selected, a reliable and secure SQL-based database. The large community surrounding SQL-based databases and MariaDB ensures that solutions are readily available whenever problems arise, and external resources can be easily accessed.

Integration

The platform integrates third-party services, such as Clerk, and other libraries that handle back-end and database security as needed. Security is a fundamental feature of the platform, and we prioritize it as a core offering.

Additionally, Large Language Models (LLMs) like ChatGPT, Llama3, and Mixtral are leveraged to provide assistance when the aforementioned resources are insufficient.

VI. Design and User Experience

Wireframes

The platform's wireframes will be delivered by the end of June, providing a detailed visual representation of the website's layout and functionality.

User Journey

As the project progresses, a comprehensive user journey map will be developed, outlining the navigation and interaction flow of the website, ensuring an intuitive and seamless user experience.

Visual Design

Although the design is still evolving, our current visual direction is guided by a natural color palette, carefully selected to complement the website's logo. The chosen colors are: #FBB328, #A88C66, #FFF8F0, and #DFE0DF. The online tool, mycolor.space, was used to generate this palette based on the logo's primary color.

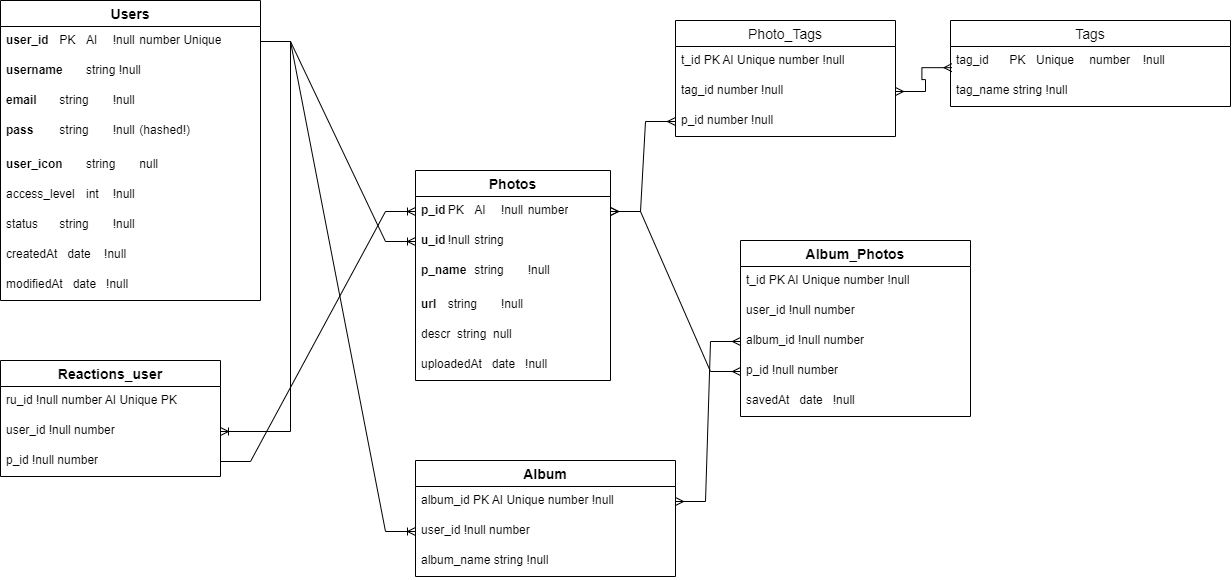
For typography, Roboto font family from Google Fonts was selected, a clean and modern sans-serif font, ideal for digital interfaces. The logo font, Star Avenue, is also a free Google Font, ensuring consistency and cohesiveness throughout the platform.

The visual style is characterized by simplicity and minimalism, reflecting the core values and focus of "photoStockage". This design approach ensures a clean, intuitive, and user-friendly experience, allowing users to effortlessly navigate and engage with the platform.

VII. Data Management

Data Models

Database Schema



The database consists of seven tables. The users table comprises nine columns: a user ID, which serves as the primary key and must be unique, non-null, and of type number. The user ID is also automatically incremented upon each user creation. The next column consists of the username, which is a required string field. An email and password field are also included, both of which are required string fields with the password being hashed before storage to ensure data security. A user icon column is also included, which is not required and can therefore be null. This column allows users to store the address of the icon they choose as their avatar. Additionally, there is an access level column, which is required and of type integer. A status column, indicating whether an account is banned, temporarily suspended, or has no restrictions, exists and is required. Finally, the table includes a created at and modified at field, both of which are required and of type date.

The photos table comprises six columns: p ID, u ID, p name, URL, description, and uploaded at. With the exception of the description field, all other columns are required. P ID or photo ID is used to identify stored photos, is a number value, and serves as the primary key of the table. It is also automatically incremented. U ID or user ID is an imported field from the users table, used to identify the owner of the photo. P name or photo name is used to define a name for the photo and is a string. URL is the field that defines the path in which the image is stored and is also a string. Description is a string field used to describe the photo. Uploaded at is a date field that defines when the photo was uploaded to the server.

The reactions user table consists of three columns: ru ID, user ID, and p ID. Ru ID or reaction user ID is the primary key and shares the same properties as in every other table. The user ID is imported from the users table, and the p ID or photo ID is imported from the photos table.

The album table's columns are: album ID, user ID, and album name. The first two are numbers, with the album ID serving as the primary key and the user ID being an imported key from the users table. Album name is a required string that describes the name of the created album.

The album photo table includes the following columns: t ID, user ID, album ID, p ID, and saved at. Saved at is a date field, while all the others are numbers. T ID is the primary key of the table, user ID is imported from the users table, album ID from the albums table, and p ID or photo ID from the photos table.

The tags table consists of two columns: tag ID and tag name. Tag ID is the primary key, sharing the same properties as in every other table, and tag name is a string that describes the tag and is therefore a string. All fields are required.

Finally, there is a photo tags table. The t ID field is the primary key, a tag ID is imported from the tags table, and a p ID or photo ID is imported from the photos table.

Data Storage

The website's data will be stored on a shared server hosted by Namecheap, a reputable hosting services provider. To ensure data safety and integrity, daily, weekly, and monthly backups will be performed automatically. Furthermore, regular local backups will be conducted to provide an additional layer of security for both database data and the actual photos, minimizing the risk of data loss in the event of errors or breaches.