**Software Requirements Specification**

**1. Introduction**

**1.1 Purpose**

The purpose of this document is to provide a comprehensive overview of the requirements for the development of CodeBin, a code-sharing platform similar to Pastebin.com.

**1.2 Scope**

CodeBin is designed to allow users to share and store code snippets securely. Users can create, edit, and delete snippets, set expiration periods, and share them with others. The platform will support syntax highlighting for various programming languages.

**2. Functional Requirements**

**2.1 User Registration and Authentication**

2.1.1 User Registration

* The system shall allow users to create an account by providing a valid email address and password.
* Users shall receive a confirmation email for account verification.

2.1.2 User Authentication

* Registered users shall be able to log in using their email and password.
* The system shall implement secure authentication practices to protect user accounts.

**2.2 Snippet Management**

2.2.1 Create Snippet

* Users shall be able to create a new code snippet by entering code content, title, and optional description.
* Syntax highlighting shall be applied based on the selected programming language.

2.2.2 Edit Snippet

* Users shall have the ability to edit their existing code snippets.
* Changes to a snippet should be reflected in real-time.

2.2.3 Delete Snippet

* Users shall be able to delete their own code snippets.

2.2.4 Expiration

* Snippets may have an optional expiration period.
* Expired snippets shall be automatically deleted from the system.

**2.3 Sharing**

2.3.1 Share Snippet

* Users shall be able to share a snippet by generating a unique URL.
* The shared snippet shall be viewable by anyone with the URL.

**2.4 User Profile**

2.4.1 View Profile

* Users shall have a public profile displaying their shared snippets.

2.4.2 Account Settings

* Users shall be able to update their account settings, including email and password changes.

**3. Non-functional Requirements**

**3.1 Performance**

* The system should respond to user actions within 2 seconds.
* The platform shall be capable of handling concurrent user requests.

**3.2 Security**

* User passwords shall be securely hashed and stored.
* Snippet URLs shall be hard to guess to prevent unauthorized access.

**3.3 Scalability**

* The system architecture should be scalable to accommodate a growing number of users and snippets.

**3.4 Usability**

* The user interface shall be intuitive and user-friendly.

**4. Constraints**

* The development shall adhere to legal and ethical standards.
* The system shall comply with relevant data protection regulations.

**5. Glossary**

* **Snippet:** A piece of code shared on the platform.
* **Syntax Highlighting:** The process of applying colors to code to improve readability.
* **URL:** Uniform Resource Locator, a web address.