

CEN 302 Software Engineering

WeBlog

Requirements Document

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1. EXECUTIVE SUMMARY

1.1 Project Overview

WeBlog is a social publishing platform, where anyone can share their ideas or give their insights on different published topics. The goal is to provide registered members with a web-app, which can help them launch their own blog, the contents of which they can share with the other users of this platform.

1.2 Purpose and Scope of this Specification

WeBlog is intended to be a platform that enables the management of all client Bloggers, who will purchase a blog, as well as specifically designing and managing an individual blog as a product. Thus, this documentation intends to regulate the behavior amongst the Administrators, Bloggers and Blog Visitors interacting with the platform. This specification will contain the description of every use case and all the respective features, explained in details, avoiding so the ambiguity during development, as well as during usage of the platform and interaction with it.

In scope:

- WeBlog application will be responsible to provide a safe environment where Bloggers purchase their products and share their lifestyles and interests.
- The application will serve as an interaction FRidge between the Bloggers and their followers, named in our project as Blog Visitors, via comments, likes and posts.
- WeBlog will provide several templates for Blogger clients to use and maintain their feed aesthetically.
- Security policies shall be provided to all platform users, keeping their personal data and information safe and encrypted in secured databases administered by software maintenance.

Out of scope:

- The platform shall not be responsible to suggest or create itself content or support for Blogger clients.
- The web application features may change in the future to meet new client requirements and necessities.

2. PRODUCT / SERVICE DESCRIPTION

A blog is a web page, the contents of which are regularly updated by its user. It is used as a personal webpage or for business marketing. A blog post enables your business to rank on the search engine for a variety of keywords. Additionally, a blog is a tool that allows you to engage more with an audience, either by analyzing how many readers share your blog posts on social or by allowing readers to interact via comments and likes on your individual posts. Bloggers should not have to go through the hassle of hiring a web developer, come up with a theme template and wait for the development process. Blogging should be as easy as clicking a button. As creators of WeBlog, we aim to provide Bloggers with a fast way to launch their blog and start sharing.

2.1 *Product Context*

This product is independent and self-contained, in that it does not rely or communicate with other APIs.

2.2 *User Characteristics*

This system will be used by three types of users: Administrator, Blogger-Client, Blog-Visitor.

1. **Administrator**

- Login / Logout
- Manage Bloggers (CRUD)
- Manage Blog Visitors (CRUD)
- Approve and Activate or Decline Blogs

2. **Blogger**

- Register
- Request for Creation of Blog
- Login / Logout
- Manage Blog (CRUD)

- Manage Posts (CRUD)
- Manage Tags (CRUD)
- Manage Comments (R-D)

3. Blog Visitor

- Register
- Login / Logout
- Comment on Posts (CRUD)
- View Posts
- Like / Unlike Comments or Posts

2.3 Assumptions

It is assumed that the selection of technologies (Java Spring Boot, JavaScript, MySQL) will be optimal for the developments process of this platform. We assume that the team members are capable of meeting all the platform requirements and to create the described web application.

It is assumed that users of this platform will be working on a computer that is connected to the Internet, to be able to access their webpages. All the WeBlog users shall have basic computer and management skills to maintain and interact with their accounts, as well as be familiar to other social applications interaction features and usage.

2.4 Constraints

Describe any items that will constrain the design options, including

- Technologies used: Java Spring Boot, ReactJS, MySQL.
- The feed content in WeBlog webpages shall be posted by the Bloggers themselves.
- The support and reactions in several posts shall be given only by the Blog Visitors and Bloggers.
- Comments updates shall be made only by the one creating and posting them.

- Bloggers and Blog Visitors shall not have the opportunity to edit and/or delete the comments of others. Bloggers may only delete unpleasant comments from their followers on their own posts.

2.5 Dependencies

This platform shall require a post or interaction in webpage's feed for at least once in three months to prevent closing down the webpage activity and remove the account.

3. REQUIREMENTS

3.1 Functional Requirements

Req#	Requirement	Comments	Priority	Date Reviewed	SME Reviewed/ Approved
FR_01	Administrator as a user of the system should be provided with a specific User Interface appropriate for his role.	When Administrator logs in, he should be able to see a dashboard and pick from all the entities he manages, in order to view the tables of records.	1	18/04/22	Ari Gjerazi
FR_02	Blogger as a user of the system should be provided with a specific User Interface appropriate for his role.	When a Blogger first enters, he should be able to select a theme in order to request the creation of his blog, to proceed with the registration. When he gets his blog, the interface should make it possible to manage posts and tags.	1	18/04/22	Ari Gjerazi

Req#	Requirement	Comments	Priority	Date Reviewed	SME Reviewed/ Approved
FR_03	Blog Visitor as a user of the system should be provided with a specific User Interface appropriate for his role.	When a Blog Visitor visits the homepage, he should be able to see a list of different blogs. To be an active part of a specific blog he should register and login. Then he can view posts, comment and like other visitors' comments.	1	18/04/22	Ari Gjerazi
FR_04	The system should provide various templates for blog creation.	While the Blogger is creating his blog page, he should be able to choose different themes.	3	18/04/22	Ari Gjerazi
FR_05	The platform should provide Blog Visitors with a like and unlike button.	A like button improved the interaction between Blog Visitors and Bloggers.	2	18/04/22	Ari Gjerazi
FR_06	The system should enable Blog Visitors with the information that a comment has been edited.	An edited label over a comment provides readers with more information on the history of comments.	3	18/04/22	Ari Gjerazi
FR_07	The system will provide Administrators with tables to view and manage users.	Records of users should be displayed in a table, with options of editing and deleting.	1	18/04/22	Ari Gjerazi
FR_08	Administrator will have access to records of requests for creation of blogs. There will be displayed an option to approve the request and activate blog.	In a table of requests by Blogger-clients, there will be options to activate blogs as selected by admin.	1	18/04/22	Ari Gjerazi

3.2 Non-Functional Requirements

3.2.1 Product Requirements

3.2.1.1 User Interface Requirements

Initially, the Blogger will see the homepage of the platform. Amongst other parts, a button will be displayed that will redirect the user to the page which gives the opportunity to create a blog page. Therefore, the user fills in the registration form, the submission of which sends a blog creation request to the administrator of the platform. The registration form includes the necessary information to be filled by the user. On login the correct credentials should be provided.

The Administrator is expected to insert his credentials to enter the system and work with a dashboard. This part of the system will include the tables that hold records of Bloggers, Blog Visitors to specific blogs and options to manage these users. For each record of a blog creation request, the Administrator will be provided with an option of editing the record to activated. Furthermore, on the table which provides information of active blogs, the Administrator may make changes or delete the blog as requested or seem convenient by his objective judgment.

Blog Visitors may select some blog classifications based on the topics they address, and follow some Blogs which meet their interests from the list displayed. To help them pick, the blogs will be described by different category tags. Succeeding selecting a specific blog, the Blog Visitor must register in order to be able to interact with them and their posts. Upon registration, he will have to provide a few details to complete the form. If the Blog Visitor owns an account and is logged in, he will be able to like, unlike comments and posts or leave their own comments in posts.

Nevertheless, some general user interface requirements consist of a flexible interface which fits completely any screen size, functional and standard forms of registration and login/logout pages, with navigating words in several pages with different functionalities and purposes, and providing various options of activities and interactions to make the platform useful and enjoyable.

3.2.1.2 Usability Requirements

Our aim is to create a user-friendly web application which can be easily used even by users with very little knowledge in technology and social media platforms. Our main objective is to give an opportunity to people in different countries to interact with each other and introduce themselves to global market and community. In case of updates or new feature added, a tutorial should be

provided to Bloggers to introduce them with the updated features and the templates and/or themes available to help them create aesthetic and creative contents in their feed.

Errors should be handled with friendly warnings for the users to make their user experience satisfactory. Furthermore, risky operations such as updates, deletion of posts or reports should be handled with explanatory prompts for the users so they know the impact they are making.

3.2.1.3 Efficiency Requirements

3.2.1.3.1 Performance Requirements

- Latency from the website shall be less than 3s.
- Server shall be able to handle 2000 active users simultaneously.
- An average traffic shall be around 200 users/s.
- System should support a number of transactions of 30/s.

3.2.1.3.2 Space Requirements

Assuming that each user may post an average of 3 posts per day, of maximum 4GB size, maintain an average of 50 comments, each of maximum 2200 characters, meaning 2KB, giving as a result a size of approximately 4GB (since $100\text{KB} = 9.53674 \times 10^{-5} \text{ GB}$) per user in a day. Following this logic, assuming that a user will post every day 3 posts per day, 1460GB will be needed for each year per user. In addition, considering to have 100 active bloggers, and operations on the platform not having a complex nature, a 3000TB drive storage shall be needed for 20 years.

3.2.1.4 Dependability Requirements

Availability

- The platform shall be running and available at any time.

- Our aim is to give access to the web application to everyone despite of location, fulfilling the only condition to have Internet access.
- The web application shall have a tolerance of 2 hours of down time per week during sleep hours, meaning that the down time will be different in distinct countries. The sleep hours will be defined by the decrease in user traffic.

Reliability

The platform shall be reliable during user traffic hours, taking into consideration that at that specific time the interaction, benefits and Business or influencers' blogs profit are at its highest peak. Moreover, the data shall be updated and backed up continuously and very often to provide users with up-to-date data in real time.

Monitoring

Logs will be kept for user access and user changes to maintain any changes in the system and manage trackability back to the users. CPU usage and RAM usage of the server shall be maintained under 80%, meanwhile space usage shall be maintained under 90%.

Maintenance

Maintenance and the deployment of new features shall be scheduled during the sleep and/ or low traffic hours, to keep the users' activity runnable and accessible during activity hours.

Integrity

The integrity of the platform will be assured via logs, HTTPS and TLS.

3.2.1.5 Security Requirements

- Sensitive information such as passwords will be encrypted.
- Blog creation will be approved by Administrators, after contact with client.

- Access to different functionalities of the system is provided based on user roles.

3.2.2 Organizational Requirements

3.2.2.1 Environmental Requirements

The platform shall be able to operate and offer its services in any electronic device which is connected to the Internet. It shall be available to users in distinct countries during respective activity hours. The applications storage space shall not be very large and shall not prevent or interfere in normal usage and execution of other applications running in the same time.

3.2.2.2 Operational Requirements

This web application is a suitable platform for online business advertisement and marketing and people who want to share their lifestyle and influence others via online communication and interaction. The platform may easily be adopted to any theme a user may desire to create. Classification and tag features ease interest approaches and make the user journey interesting and entertaining.

3.2.2.3 Development Requirements

The software must not contain any bugs or errors, it shall run without interruptions and be functional. The technologies used to develop the web application are:

- Back-end – Java Spring Boot, REST API
- Front-end – HTML, CSS, JavaScript, React.js
- Database – MySQL

3.2.3 External Requirements

3.2.3.1 Regulatory Requirements

WeBlog platform privacy and security policies will be clearly stated and explained to the user through an agreement statement, providing information on how the data will be kept, the policies which ensure safety to the users while running their activities on the platform and so many more management tactics for crucial problematics with regard to privacy and security of users in online social media network.

3.2.3.2 Ethical Requirements

Platform users shall agree to provide helpful, entertaining information, maintaining a healthy and respectful relationship between the Bloggers and Blog Visitors. They shall agree to provide only necessary information on the blog, which contributes in the improvement of blog activity and performance.

3.2.3.3 Legislative Requirements

WeBlog platform shall comply with Albanian laws, standards and regulations imposed by law enforcement agencies of the Albanian government. The platform data management policy shall ensure that the organization and usage of data and information assets are managed consistently and used properly via a set of documented guidelines.

This includes: continually improving end-user awareness of proper data management; maintaining physical security of data infrastructure; implementing appropriate data access; providing data cataloging technologies to users and so on.

3.2.3.3.1 Accounting Requirements

The WeBlog web application shall not charge any fees to users of the software, nor shall provide monetary transactions in between the users. If the need of monetary transactions shall arise between the users as a result of using a service from a Blogger or Business Blog, then the users shall rely on banking platforms and softwares.

3.2.3.3.2 Security Requirements

As far as security is concerned, the Spring Security Framework is used. This is a Spring framework that provides a powerful and customizable authentication and authorization. An authentication manager is configured with the correct password encoding schema that will be used for credentials verification. For this, the bcrypt password-hashing algorithm has been used. Also, through authorization with a JWT determine if a user has proper permission to perform a particular action or read particular data.

3.3 Domain Requirements

The domain requirements consist of providing an interactive environment between businesses, influencers and visitors. The platforms target is to create a communication bridge and network in online market, giving the opportunity to entrepreneurs to know and understand costumers' needs, to influencers to advertise diverse services and products, and visitors to act as customers and express their necessities which are not found in real life markets but facilitate their lifestyles.