**Software Design Description (SDD)**

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**Revisions Page**

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**Overview**: This document outlines the design details of the Article-Publishing Website project. It covers the system architecture, component descriptions, and user interface design.

**Target Audience**: This document is intended for project stakeholders, including project managers, developers, designers, and anyone involved in the design and development of the project.

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1 INTRODUCTION

1.1 Design Overview

The Software Design Description outlines the architectural and component-level design for the article-publishing website. It explains the system's structure, the interaction of its components, and the user interface design.

1.2 Requirements Traceability Matrix

The SDD will reference the requirements outlined in the Software Requirements Specifications (SRS) document, ensuring that each requirement is addressed in the design.

2 SYSTEM ARCHITECTURAL DESIGN

2.1 Chosen System Architecture

The website will use a three-tier architecture: Presentation Layer, Application Layer, and Data Layer. This architecture enables modularity and scalability.

2.2 Discussion of Alternative Designs

Alternative designs were considered, including a monolithic architecture and microservices architecture. The three-tier architecture was chosen for its balance of simplicity and scalability.

2.3 System Interface Description

The Presentation Layer will interact with users through web browsers. The Application Layer will communicate with the frontend and the Data Layer using RESTful APIs. Database interactions will be managed through SQL queries.

3 DETAILED DESCRIPTION OF COMPONENTS

3.1 Component: Article Management Module

- Purpose: Manages the creation, editing, and deletion of articles.

- Description: This component provides functionality for authors to submit articles, edit drafts, and manage their published content.

- Interactions: Communicates with the frontend to display article management options and with the Data Layer to store article data.

3.2 Component: Category Management Module

- Purpose: Handles the categorization and organization of articles.

- Description: This component allows administrators to define and manage article categories. Users can filter articles by categories.

- Interactions: Communicates with the frontend to display category options and with the Data Layer to store category data and associate articles.

3.3 Component: Commenting System

- Purpose: Manages user comments on articles.

- Description: This component enables users to leave comments on articles. It includes functionality for posting comments, editing them, and moderating inappropriate content.

- Interactions: Communicates with the frontend to display comment sections and with the Data Layer to store comment data.

3.4 Component: User Profile Management

- Purpose: Allows users to manage their profiles.

- Description: This component provides users with the ability to view and edit their profile information, including username, email, and password.

- Interactions: Communicates with the frontend to display profile options and with the Data Layer to store and retrieve user profile data.

3.5 Component: Search and Filtering Module

- Purpose: Enables users to search for articles and apply filters.

- Description: This component provides a search bar and filtering options, allowing users to search for articles by keywords, authors, categories, and publication date.

- Interactions: Communicates with the frontend to display search and filtering options and with the Data Layer to retrieve relevant article data.

3.6 Component: Notification System

- Purpose: Sends notifications to users.

- Description: This component handles the sending of notifications to users, such as new article alerts, comment replies, and account-related notifications.

-Interactions: Communicates with the Data Layer to retrieve user preferences and with external services (email, push notifications) for notification delivery.

3.7 Component: Admin Dashboard

- Purpose: Provides administrators with control over the website's content.

- Description: This component offers a secure admin panel for managing articles, user accounts, comments, and categories. It includes features for content moderation and user management.

- Interactions: Communicates with the frontend to display admin options and with the Data Layer to perform administrative actions.

4 USER INTERFACE DESIGN

4.1 Description of the User Interface

The user interface will have a clean and intuitive design. It will feature a navigation menu, search bar, and categories for articles. Users can register, log in, browse articles, and leave comments.

4.1.1 Screen Images

- Home Page: Displays featured articles and categories.

- Registration Page: Allows users to create accounts.

- Login Page: Enables user authentication.

- Article Page: Displays the full article content and comment section.

4.1.2 Objects and Actions

- Buttons: "Register," "Login," "Submit Article," "Comment."

- Links: Navigation links to different sections.

- Search Bar: Allows users to search for articles.

- Comment Section: Users can input comments and submit.