
SOFTWARE REQUIREMENTS SPECIFICATION

For

News Media Application

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1. Introduction:

1.1 Purpose

In today's fast-paced digital landscape, the News Media Application is driven by a clear and vital purpose. Our mission is to provide users with a convenient and enriching news consumption experience. With the sheer volume of information available, our application seeks to simplify the process of staying informed by offering efficient access to a diverse range of news sources. Moreover, we understand that one size does not fit all when it comes to news, which is why our platform employs advanced algorithms to tailor content to each user's preferences and interests. In an era where multimedia formats dominate, we embrace this shift by seamlessly integrating text, images, videos, and audio to ensure a comprehensive and engaging news experience. Beyond convenience, we prioritize the security of user data, implementing stringent measures to protect their privacy. Ultimately, our News Media Application is not just a news aggregator but a tool to foster media literacy and empower individuals to make informed decisions in an increasingly complex world.

1.2 Document Conventions

- Entire document should be justified.
- Convention for Main title
 - Font face: Times New Roman
 - Font style: Bold
 - Font Size: 14
- Convention for Sub title
 - Font face: Times New Roman
 - Font style: Bold
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- Convention for body
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1.3 Scope of Development Project

The scope of the News Media Application development project is both ambitious and comprehensive. It encompasses various facets of design, technology, and user engagement to create a holistic news consumption platform. Firstly, from a technological perspective, the project will involve the creation of a user-friendly and responsive cross-platform application, ensuring compatibility with both mobile devices and web browsers. The development scope extends to the integration of APIs and data sources to provide real-time news updates, categorization, and multimedia-rich content delivery.

Personalization is a crucial aspect of this project, requiring the development of sophisticated algorithms for user profiling and content recommendation. Users will have the ability to tailor their news feeds, selecting topics and sources of interest, thereby enhancing the personalization aspect. Additionally, the project scope includes the seamless integration of diverse media formats, including text, images, videos, and audio, to cater to the evolving preferences of news consumers.

Security is a paramount consideration, necessitating the implementation of robust measures to protect user data and privacy, thereby ensuring a safe and trustworthy environment for news consumption. Lastly, the scope encompasses post-launch activities, such as ongoing maintenance, updates, and the gathering of user feedback to drive continuous improvement. In summary, the scope of the News Media Application development project is comprehensive, aiming to create a versatile, secure, and user-centric platform that redefines how individuals access and engage with news content.

1.4 Definitions, Acronyms and Abbreviations

JAVA -> platform independence

SQL-> Structured query Language

ER-> Entity Relationship

UML -> Unified Modeling Language

IDE-> Integrated Development Environment

SRS-> Software Requirement Specification

ISBN -> International Standard Product Number

IEEE ->Institute of Electrical and Electronics Engineers

1.5 References

➤ Products

- "The New Media Monopoly" by Ben H. Bagdikian
- "Digital Journalism" by Janet Jones
- "The Elements of Journalism: What Newspeople Should Know and the Public Should Expect" by Bill Kovach and Tom Rosenstiel

➤ Websites

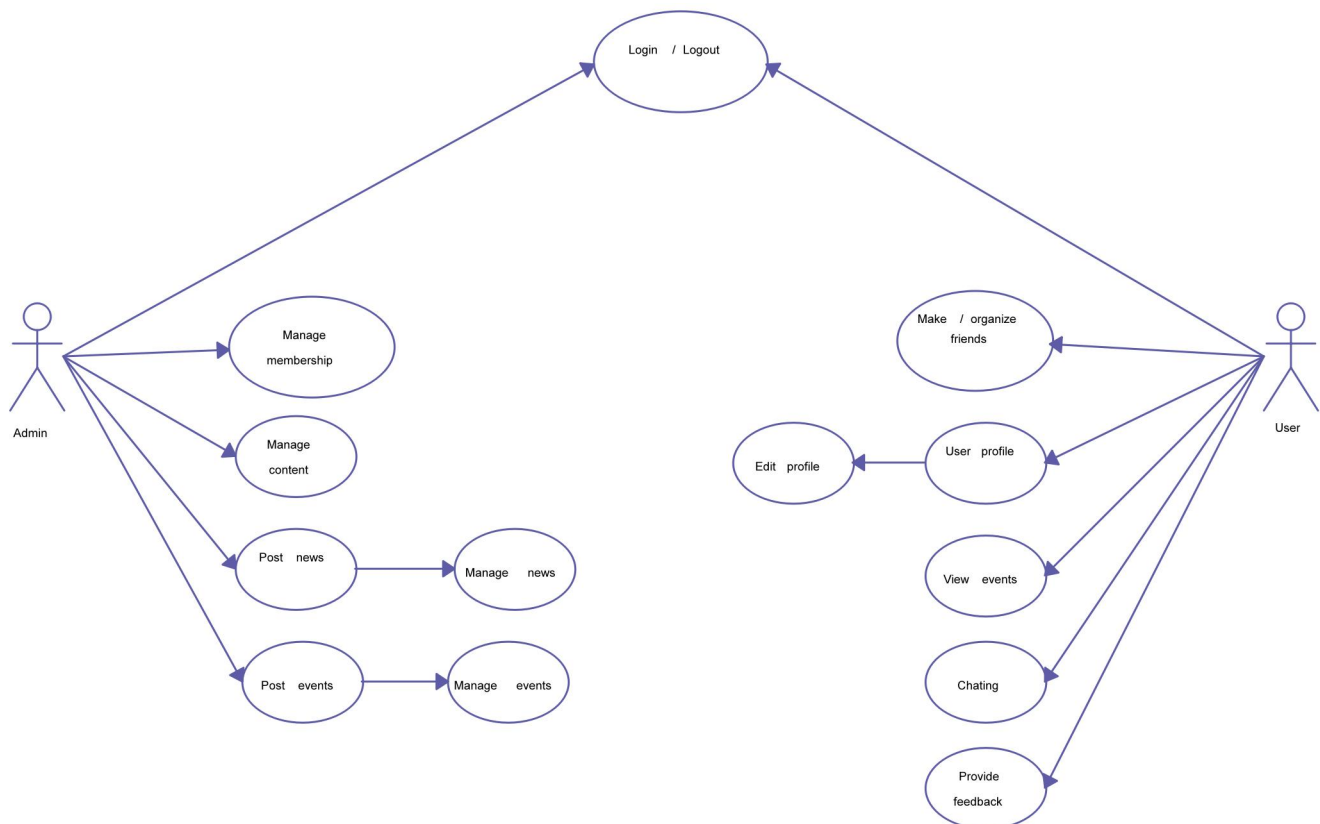
- <https://mediashift.org/>
- <https://www.journalism.co.kk>

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2. Overall Descriptions:

2.1 Product Perspective

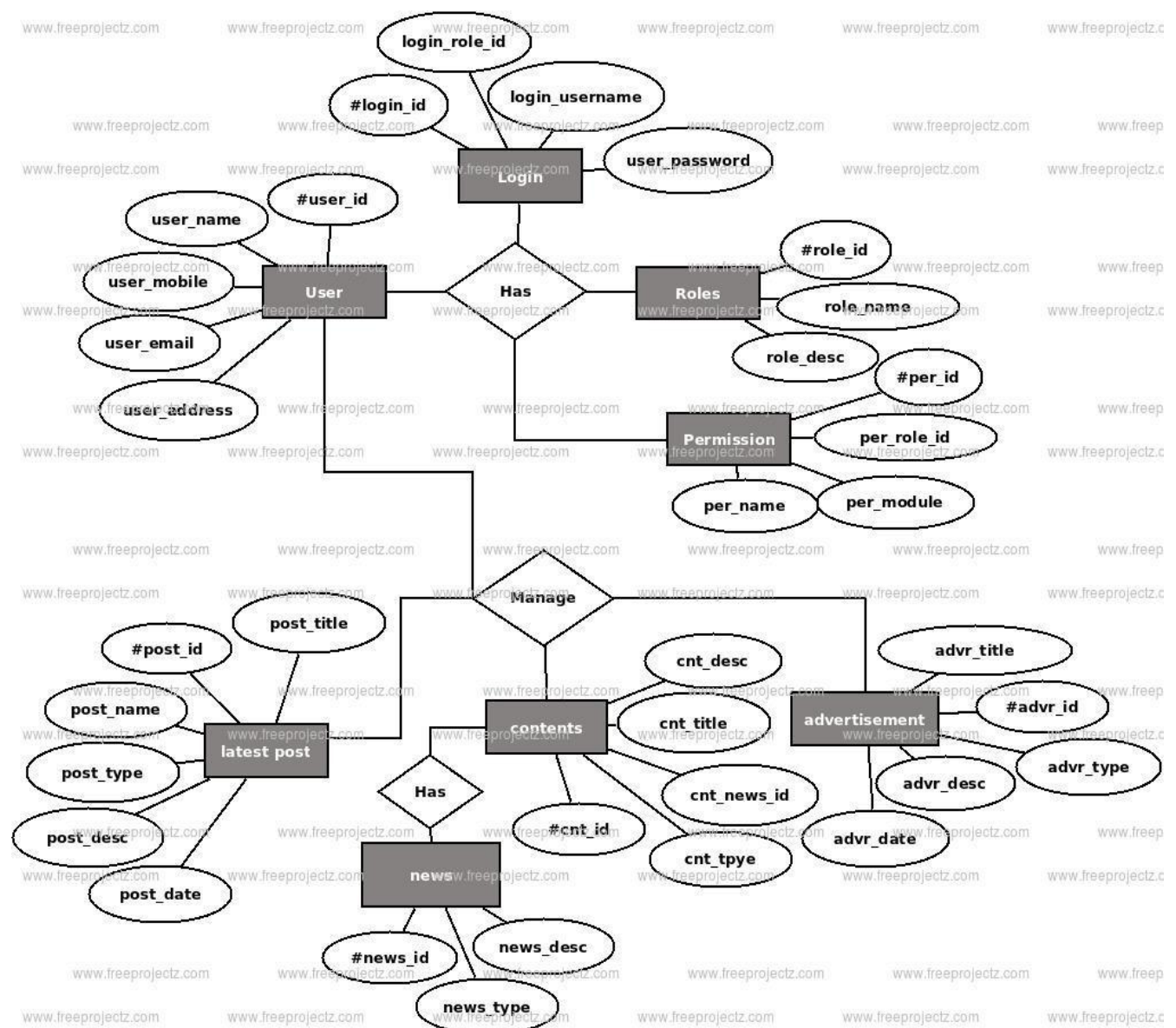
Use Case Diagram of News Media Application



Creating a use case diagram for a news media application can help illustrate the various interactions and functionalities of the system. Here's a simplified use case diagram for a News Media Application. Users can register for a new account or log in to an existing one. Users can browse and view news articles. Users can access a personalized news feed based on their preferences and behavior. Users can save articles to read later. Administrators can manage and curate news content, including adding, editing, or removing articles. The system may include features for tracking user engagement and generating reports for administrators.

2.2 Product Function

Entity Relationship Diagram of News Media Application



The Entity Relationship Diagram (ERD) for a News Media Application depicts the core entities and their relationships within the system. At its heart lies the "User" entity, representing application users who interact with news content. Users can register, log in, and personalize their experience based on their preferences and profile information. The "Article" entity represents news articles published within the application, containing attributes like title, content, author, and publication date. Users can engage further with articles by posting "Comments," creating a one-to-many relationship, and by saving articles for later reading, forming a many-to-many relationship.

2.3 User Classes and Characteristics

In a News Media Application, user classes and their characteristics can vary depending on the application's design and functionality. Here are some common user classes and their characteristics:

Regular User Characteristics:

- Registers and logs into the application.
- Can view the different categories of products available in the website
- Views news articles and multimedia content.
- Customizes their news feed based on preferences.
- Saves articles for later reading.
- Shares articles on social media.
- Posts comments and engages in discussions.
- Receives personalized recommendations.

2.4 Operating Environment

The operating environment of a News Media Application is a critical aspect that ensures the application's reliability, scalability, and accessibility to users across various platforms. In this dynamic digital landscape, the application operates within a complex ecosystem of hardware, software, and network components.

To deliver real-time news updates, the application relies on a network of APIs and data sources, often integrating with news agencies, social media platforms, and multimedia content providers. This integration ensures that users receive up-to-the-minute information in various formats, including text, images, videos, and audio.

In terms of security, robust measures are implemented to protect user data and ensure compliance with privacy regulations. This includes data encryption, secure authentication processes, and regular security audits to identify and mitigate potential vulnerabilities.

2.5 Assumptions and Dependencies

The assumptions are:-

In the development of a News Media Application, several key assumptions underpin the project's foundation. Firstly, the assumption of ubiquitous internet connectivity among users is paramount, as the application relies on real-time data and multimedia content. Additionally, it is assumed that a diverse array of news articles and multimedia content will be available from various sources, including news agencies and content creators. The project also assumes that users possess devices capable of running the application and rendering multimedia elements effectively. Furthermore, robust security measures, such as data encryption and user authentication, are assumed to safeguard user data and privacy. User engagement with features like comments, sharing, and saving articles is another critical assumption, reflecting the application's interactive nature. Finally, the assumption of content moderation being necessary ensures a safe and respectful user environment.

The dependencies are:-

A News Media Application project is intricately interwoven with external factors and dependencies that profoundly impact its success. Foremost among these dependencies is the integration with external APIs and data sources, which is fundamental to accessing news content and real-time updates. The project also relies on various third-party services for functions like authentication (e.g., OAuth) and analytics. Moreover, the underlying server infrastructure and cloud services are critical dependencies for hosting, managing, and delivering content to users. Content providers play a pivotal role, as the project depends on their timely and high-quality supply of news articles, images, videos, and audio. Ensuring compliance with data protection and privacy regulations is a significant dependency, given the diverse regulatory landscape.

2.6 Requirement

Software Configuration:-

On the software front, developers typically utilize a variety of operating systems, such as Windows, macOS, or Linux, depending on their preferences and toolsets. Development tools like integrated development environments (IDEs), version control systems, and database management systems are essential for efficient coding, collaboration, and data handling.

Hardware Configuration:-

On the hardware side, robust server infrastructure, often hosted in the cloud, is crucial for handling the application's server-side processes, databases, and media content storage. Adequate networking equipment, including load balancers, ensures reliable internet connectivity and efficient traffic distribution. User devices, such as smartphones, tablets, and desktop computers, need modern operating systems and web browsers to access the application.

2.7 Data Requirement

In the development of a News Media Application, data requirements are pivotal for its functionality and user experience. These requirements encompass the need for diverse and up-to-date news content from external sources, including articles, images, videos, and audio. User data, gathered during registration and interactions, plays a vital role in personalizing the user experience and refining content recommendations. Efficient database systems are essential to handle the vast repository of news content and user-generated data. Data security measures, including encryption and user authentication, are crucial for safeguarding user information and ensuring privacy compliance. Additionally, data analytics capabilities may be required to glean insights into user engagement and content performance, enabling informed content strategies and improvements..

3. External Interface Requirement:

External Interface Requirements for a News Media Application encompass the application's interaction with external systems, services, and users. To facilitate a seamless user experience, the application should integrate with various external sources of news content, such as news agencies, publishers, and content providers, through APIs (Application Programming Interfaces). These APIs enable the application to retrieve real-time news articles, images, videos, and audio for presentation to users. Additionally, the application may require integration with third-party services for user authentication, allowing users to register and log in using their social media or email accounts. Social media sharing features necessitate integration with platforms like Facebook, Twitter, and others. Moreover, the application may rely on advertising networks for monetization, requiring integration with ad platforms to display targeted advertisements. These external interface requirements are integral to delivering an engaging, content-rich, and user-friendly News Media Application while ensuring interoperability with the broader digital ecosystem.

4. System Features:

The system features of a News Media Application project encompass a wide array of functionalities designed to provide users with a comprehensive and engaging news consumption experience. Key features include real-time news updates sourced from various providers, ensuring the latest information is readily available to users. Personalization features enable users to tailor their news feeds based on preferences and behavior, enhancing relevance. Multimedia integration allows the inclusion of text, images, videos, and audio content, catering to diverse user preferences. User engagement features, such as commenting, sharing, and saving articles, foster interaction and user-generated content. Robust security measures ensure data privacy and compliance with regulations, while analytics capabilities provide insights into user behavior and content performance for continuous improvement. Together, these system features create a dynamic and user-centric News Media Application, empowering users to stay informed and engaged in today's fast-paced digital news landscape.

Other Non-functional Requirements

4.1 Performance Requirement

Data synchronization across devices should be seamless, allowing users to access their preferences and saved articles consistently. Load balancing mechanisms distribute traffic effectively, preventing server overload and maintaining optimal performance. Importantly, these performance requirements must not compromise the security of user data, and robust security measures should not significantly impact system performance. In achieving these performance benchmarks, a News Media Application can deliver timely, engaging, and secure news content to a diverse and dynamic user base.

4.2 Safety Requirement

Implement robust data encryption techniques to protect user data, including personal information and login credentials, during transmission and storage. Adhere to data protection and privacy regulations, such as GDPR or CCPA, to safeguard user privacy and provide transparency regarding data collection and usage. Implement strict access controls to limit user access based on roles and permissions, preventing unauthorized actions within the application. Conduct regular security audits and penetration testing to identify and address vulnerabilities in the application's infrastructure and code.

4.3 Security Requirement

- Security requirements for a News Media Application project are vital to protect user data, ensure the application's integrity, and safeguard against potential threats and vulnerabilities.
- Implement stringent data security measures, including encryption during data transmission and storage, to protect user information, such as login credentials and personal details, from unauthorized access or data breaches.
- Adhere to data protection and privacy regulations, such as GDPR (General Data Protection Regulation) or CCPA (California Consumer Privacy Act), to protect user privacy rights, provide transparency regarding data practices, and secure user consent for data collection and processing.
- Implement access control mechanisms to restrict user access based on roles and permissions, preventing unauthorized actions within the application and limiting data exposure to only authorized personnel.

4.4 Requirement attributes

- Each requirement should have a unique identifier, often in the form of a code or number, to distinguish it from other requirements.
- This identifier facilitates easy reference and traceability.
- A clear and concise description of the requirement, specifying what needs to be achieved or delivered.
- This description should be unambiguous and understandable by all stakeholders. The method or approach to be used for verifying that the requirement has been met.
- This could include testing, inspection, or user acceptance criteria.
- The current status of a requirement, indicating whether it is in the planning, development, testing, or implementation phase. Status tracking helps project managers monitor progress.

4.5 Business Rules

Business rules for a News Media Application are essential to govern how the application operates, ensuring consistency, compliance, and user satisfaction. Key business rules may include content quality guidelines to maintain journalistic integrity, user registration and authentication policies to protect user data, privacy rules in line with data protection regulations, and editorial guidelines for content curation. Monetization strategies, including ad placement and subscription models, are also pivotal business rules. Lastly, engagement and interaction rules, such as comment moderation policies and content sharing guidelines, contribute to fostering a respectful and engaging user community. These business rules collectively shape the application's behavior, ensuring it aligns with ethical, legal, and operational standards.

4.6 User Requirement

User requirements for a News Media Application are the foundation upon which the entire system is built, as they directly cater to the needs and expectations of the application's user base. These requirements encompass a broad spectrum of functionalities and features aimed at delivering a tailored and engaging news consumption experience. Users expect real-time news updates, diverse multimedia content, and seamless navigation.

Personalization features, such as customizable news feeds and saved articles, allow users to curate their news consumption. Interactivity through commenting, sharing, and social media integration enhances user engagement. Furthermore, data privacy and security measures are paramount to instill trust in the application. Addressing user requirements effectively ensures that the News Media Application remains relevant and user-centric, fostering user satisfaction and retention in an ever-evolving digital news landscape.

5. Other Requirements:

5.1 Data and Category Requirement

The application must source a continuous stream of news articles from various credible sources, including text, images, videos, and audio content. User data, such as usernames, email addresses, and user preferences, is required for user registration, personalization, and account management. Support for various multimedia formats, such as images, videos, and audio, to complement news articles and enhance user engagement. Data on user interactions within the application, including saved articles, liked content, and sharing activity, to inform personalization algorithms. A defined set of news categories, such as politics, sports, technology, and entertainment, to organize and categorize news articles for users. Algorithms that suggest relevant news articles and multimedia content based on user preferences and historical interactions. Tools for content editors and administrators to assign articles to specific categories and ensure content alignment with editorial guidelines.

5.2 Appendix

A: Admin, Abbreviation, Acronym, Assumptions; B: Business rules; C: Class, Client, Conventions; D: Data requirement, Dependencies; G: GUI; K: Key; M: Member; N: Non-functional Requirement; O: Operating environment; P: Performance, Perspective, Purpose Products;; R: Requirement, Requirement attributes; S: Safety, Scope, Security, Seller, System features; U: User, User class and characteristics, User requirement;

5.3 Glossary

The following are the list of conventions and acronyms used in this document and the project as well:

- Administrator: A login id representing a user with user administration privileges to the software
- User: A general login id assigned to most users
- Client: Intended users for the software
- SQL: Structured Query Language; used to retrieve information from a database
- SQL Server: A server used to store data in an organized format
- Layer: Represents a section of the project
- User Interface Layer: The section of the assignment referring to what the user interacts with directly
- Application Logic Layer: The section of the assignment referring to the Web Server. This is where all computations are completed
- Data Storage Layer: The section of the assignment referring to where all data is recorded
- Use Case: A broad level diagram of the project showing a basic overview
- Class diagram: It is a type of static structure diagram that describes the structure of a system by showing the system's cases, their attributes, and the relationships between the classes
- Interface: Something used to communicate across different mediums
- Unique Key: Used to differentiate entries in a database

5.4 Class Diagram

A class is an abstract, user-defined description of a type of data. NewsMediaApp represents the main application class. It manages users and articles and provides functions like user registration, login, and article searching. User represents the user class with attributes such as username, email, and preferences (preferred news categories). Users can view news feeds, save articles, and comment on articles. Article represents news articles with attributes like title, author, content, and comments. Users can view articles and leave comments on them. Category represents news categories, allowing articles to be categorized by topics. Comment represents user comments on articles, with a text attribute and a reference to the comment's author.

This simplified class diagram provides an overview of the major classes and their relationships in a News Media Application. Depending on the application's complexity, you may need to expand and refine the diagram further to include additional details and classes.

