



Name : Muhammad Shahzeb

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Submitted to : Miss Mahwish

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Functional Requirements for Web-Based Application:

1. **User Management:** Registering and managing user accounts, user authentication, and authorization.
2. **Content Management:** Managing the content of the application, which includes creating, updating, deleting, and publishing content.
3. **Search Functionality:** Providing users with the ability to search for content within the application.
4. **Payment Processing:** If the application involves selling products or services, it should have a payment processing system to handle transactions securely.
5. **Messaging:** Providing messaging functionality to enable communication between users.
6. **Reporting and Analytics:** Providing reports and analytics to help users monitor and analyze the application's performance.
7. **Integration:** Integrating with other systems and services that the application relies on.
8. **Security:** Ensuring that the application is secure from unauthorized access, data breaches, and other potential threats.

Non-functional Requirements for Web-Based Application:

1. **Performance:** Ensuring that the application loads and runs quickly and efficiently, with minimal delays or lags.
2. **Reliability:** Ensuring that the application is reliable and stable, with minimal downtime and errors.
3. **Usability:** Ensuring that the application is easy to use and intuitive, with clear navigation and user-friendly interfaces.
4. **Scalability:** Ensuring that the application can handle increased traffic and user activity without impacting performance.

5. **Accessibility:** Ensuring that the application is accessible to users with disabilities or special needs.

6. **Compatibility:** Ensuring that the application is compatible with different web browsers, devices, and operating systems.

7. **Security:** Ensuring that the application is secure from unauthorized access, data breaches, and other potential threats.

For Desktop Application:

Functional Requirements for Desktop Application:

1. **User Management:** Registering and managing user accounts, user authentication, and authorization.
2. **Content Management:** Managing the content of the application, which includes creating, updating, deleting, and publishing content.
3. **Search Functionality:** Providing users with the ability to search for content within the application.
4. **Data Entry:** Allowing users to enter data into the application for storage and manipulation.
5. **Reporting and Analytics:** Providing reports and analytics to help users monitor and analyze the application's performance.
6. **Integration:** Integrating with other systems and services that the application relies on.
7. **Printing:** Providing the ability to print out reports or other data from the application.
8. **File Management:** Allowing users to manage and manipulate files within the application.

Non-functional Requirements for Desktop Application:

1. **Performance:** Ensuring that the application loads and runs quickly and efficiently, with minimal delays or lags.
2. **Reliability:** Ensuring that the application is reliable and stable, with minimal downtime and errors.
3. **Usability:** Ensuring that the application is easy to use and intuitive, with clear navigation and user-friendly interfaces.
4. **Scalability:** Ensuring that the application can handle increased traffic and user activity without impacting performance.

5. Compatibility: Ensuring that the application is compatible with different operating systems and hardware configurations.
6. Security: Ensuring that the application is secure from unauthorized access, data breaches, and other potential threats.
7. Accessibility: Ensuring that the application is accessible to users with disabilities or special needs.
8. Backup and Recovery: Providing backup and recovery functionality to ensure that data is not lost in the event of a system failure or other issue.

For Mobile Application:

Functional Requirements for Mobile Application:

1. User Management: Registering and managing user accounts, user authentication, and authorization.
2. Content Management: Managing the content of the application, which includes creating, updating, deleting, and publishing content.
3. Search Functionality: Providing users with the ability to search for content within the application.
4. Messaging: Providing messaging functionality to enable communication between users.
5. Payment Processing: If the application involves selling products or services, it should have a payment processing system to handle transactions securely.
6. Geo-Location: Allowing users to access location-based services, such as maps or location-based recommendations.
7. Camera Access: Allowing users to take pictures or record video within the application.
8. Social Media Integration: Integrating with social media platforms to allow users to share content or login with social media accounts.

Non-functional Requirements for Mobile Application:

1. Performance: Ensuring that the application loads and runs quickly and efficiently, with minimal delays or lags.
2. Reliability: Ensuring that the application is reliable and stable, with minimal downtime and errors.

3. Usability: Ensuring that the application is easy to use and intuitive, with clear navigation and user-friendly interfaces.
4. Scalability: Ensuring that the application can handle increased traffic and user activity without impacting performance.
5. Compatibility: Ensuring that the application is compatible with different mobile devices, operating systems, and versions.
6. Security: Ensuring that the application is secure from unauthorized access, data breaches, and other potential threats.
7. Accessibility: Ensuring that the application is accessible to users with disabilities or special needs.
8. Battery Life: Optimizing the application to minimize battery usage and extend the device's battery life.

Case Study:

Functional and Non-functional Requirements for Hospital Management System

Functional Requirements for Hospital Record Management System:

1. Patient Record Management: Creating and managing patient profiles, including personal information and medical history.
2. Appointment/Checkup Record Management: Managing appointment schedules, checkup records, and patient readings.
3. Doctor Information Management: Storing and managing doctor information, including their availability and timings.
4. Patient Appointment Request Handling: Handling patient appointment requests and updating patient records accordingly.
5. Doctor Checkup Handling: Recording and managing patient readings and checkup details.
6. Prescription Management: Creating and managing prescriptions, including medicines information and recommended tests.

Non-functional Requirements for Hospital Record Management System:

1. Performance: Ensuring that the system loads and runs quickly and efficiently, with minimal delays or lags.
2. Reliability: Ensuring that the system is reliable and stable, with minimal downtime and errors.
3. Usability: Ensuring that the system is easy to use and intuitive, with clear navigation and user-friendly interfaces.

4. Scalability: Ensuring that the system can handle increased traffic and user activity without impacting performance.
5. Compatibility: Ensuring that the system is compatible with different devices, operating systems, and versions.
6. Security: Ensuring that the system is secure from unauthorized access, data breaches, and other potential threats.
7. Backup and Recovery: Providing backup and recovery functionality to ensure that data is not lost in the event of a system failure or other issue.
8. Accessibility: Ensuring that the system is accessible to users with disabilities or special needs.

