SOFTWARE REQUIREMENTS SPECIFICATION

**For**

**Online Survey System**

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# Introduction

## Purpose

The purpose of developing the online survey system is to provide a versatile and user-friendly platform for designing, distributing, and analyzing surveys in a digital environment. This system aims to streamline the entire survey lifecycle, from creation to response analysis, offering a convenient and efficient solution for individuals and organizations seeking insights from a diverse audience. By leveraging modern technologies, the online survey system intends to enhance the overall surveying experience, ensuring ease of use for both survey creators and respondents. The system's primary objectives include facilitating data collection, improving survey accessibility, and delivering robust analytics tools to extract meaningful patterns from gathered responses. Ultimately, this online survey system aspires to serve as a valuable tool for researchers, businesses, and institutions to make informed decisions based on accurate and timely survey data.

## Document Conventions

* + - Entire document should be justified.
    - Convention for Main title

Font face: Times New Roman Font style: Bold

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* + - Convention for Sub title

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Font Size: 12

* + - Convention for body

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## Scope of Development Project

The online survey system involves two main user categories: members (survey participants) and the system administrator. Members are assumed to have basic computer and internet skills, while the administrator possesses a deeper understanding of the system's internals. To facilitate user interaction, the system provides a user-friendly interface, comprehensive user manual, online help, and installation guides. The administrator plays a crucial role in offering facilities such as backup and recovery, password retrieval, data migration, replication, auto-recovery, file organization, and regular server maintenance. Periodic updates are essential for system efficiency. This approach aims to empower users with the knowledge to navigate the system effortlessly, while the administrator is equipped to handle technical challenges.

## 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

## References

* + - Books

 Software Requirements and Specifications: A Lexicon of Practice, Principles and Prejudices (ACM Press) by Michael Jackson

Software Requirements (Microsoft) Second Edition By Karl E. Wiegers

Software Engineering: A Practitioner’s Approach Fifth Edition By Roger S. Pressman

* + - Websites

[**http://www.slideshare.net/**](http://www.slideshare.net/)

[**http://ebookily.net/doc/srs-library-management-system**](http://ebookily.net/doc/srs-library-management-system)

# Overall Descriptions

## Product Perspective

Use Case Diagram of Library Management System

*searches*

1

1 *requests*

1

1

1..\*

\*

search\_book



1..\*

check\_limit

check\_availability

User 1

issue\_book

*request\_renew*

<<include>>

*monitors\_request*

1

*monitors\_renew* 1

1

*performs*

*give\_book*

<<include>>

0..\*

1..\*

renew\_book

verify\_member

<<include>>

*take\_book*

1

1 Librarian

Student

0..\*

1..\*

*adds\_new\_book*

*perform\_transaction\_updation*

Staff

\*

\*

return\_book

View\_logs

<<extend>>

add\_book

\*

calculate\_fine

update\_record

This is a broad level diagram of the project showing a basic overview. The users can be either staff or student.. This System will provide a search functionality to facilitate the search of resources. This search will be based on various categories viz. book name or the ISBN. Further the library staff personnel can add/update the resources and the resource users from the

system.The users of the system can request issue/renew/return of books for which they would have to follow certain criteria.

## Product Function

Entity Relationship Diagram of Library Management System



The Online Library System provides online real time information about the books available in the Library and the user information. The main purpose of this project is to reduce the manual work. This software is capable of managing Book Issues, Returns, Calculating/Managing Fine, Generating various Reports for Record-Keeping according to end user requirements. The Librarian will act as the administrator to control members and manage books. The member’s status of issue/return is maintained in the library database. The member’s details can be fetched by the librarian from the database as and when required. The valid members are also allowed to view their account information.

## User Classes and Characteristics

The online survey system caters to distinct user classes, primarily categorized as Administrators and Participants. Administrators possess elevated privileges, serving as the system controllers, while Participants engage with the surveys online.

Administrator Features:

Administrators have comprehensive control over survey-related activities.

They can create and manage surveys, defining questions and response options.

Access to survey analytics and reporting tools, facilitating in-depth analysis of participant responses.

Privileges to edit and update survey content and structure as needed.

Capability to generate and export detailed reports for further analysis or sharing.

Manage user accounts, including creating, modifying, or deactivating accounts as necessary.

Administrators can set survey access permissions and control participant privileges.

Participant Features:

Participants have access to view and respond to surveys relevant to their profiles.

User-friendly interfaces for ease of survey navigation and response submission.

Options to save and resume partially completed surveys, enhancing user flexibility.

Capability to view survey history, including previously submitted responses.

Ability to request additional surveys or provide feedback on existing ones.

Participants can view summary reports of survey results (aggregate data) if permitted.

Access to user account settings, allowing for profile updates and password changes.

Notifications for new surveys or updates, ensuring participants stay informed.

## Operating Environment

The product will be operating in windows environment. The Library Management System is a website and shall operate in all famous browsers, for a model we are taking Microsoft Internet Explorer, Google Chrome, and Mozilla Firefox. Also it will be compatible with the IE 6.0. Most of the features will be compatible with the Mozilla Firefox & Opera 7.0 or higher version. The only requirement to use this online product would be the internet connection.

The hardware configuration include Hard Disk: 40 GB, Monitor: 15” Color monitor, Keyboard: 122 keys. The basic input devices required are keyboard, mouse and output devices are monitor, printer etc.

## Assumptions and Dependencies

## Assumptions:

## Assumption of error-free coding for smooth system operation

## The system assumes the implementation of a user-friendly interface.

## Assumption that user information and survey data are stored in an accessible database.

## Assumption of sufficient storage capacity and fast database access.

## The system assumes the provision of a search facility and support for quick transactions.

## Assumption that the online survey system operates 24 hours a day.

## Users are assumed to access the system remotely from any internet-enabled computer.

## Assumption that correct usernames and passwords are required for user entry and actions.

## Dependency on specific hardware and software configurations for system functioning.

## System development and execution depend on meeting specified requirements.

## End users, particularly administrators, are dependent on understanding the system for effective use.

## System functionality depends on the storage and retrieval of general reports.

## Dependency on seamless integration for Library System database accessibility.

## System functionality depends on accurate recording of survey updates in the database.

## Requirement

Software Configuration:-

This software package is developed using java as front end which is supported by sun micro system. Microsoft SQL Server as the back end to store the database.

Operating System: Windows NT, windows 98, Windows XP Language: Java Runtime Environment, Net beans 7.0.1 (front end) Database: MS SQL Server (back end)

Hardware Configuration:-

Processor: Pentium(R) Dual-core CPU Hard Disk: 40GB

RAM: 256 MB or more

## Data Requirement

## The data requirements for an online survey system encompass a comprehensive set of elements crucial for its functionality and effectiveness. Firstly, user information is paramount, requiring the collection of participant details such as names, email addresses, and demographics during the account creation process. Survey design and configuration demand data on question structures, types, and the overall layout of the survey, including metadata like titles and descriptions. Capturing response data is crucial, involving the storage of both quantitative and qualitative participant responses, along with timestamps for analysis. Survey administration requires well-defined roles, permissions, and scheduling parameters for survey availability. Security and privacy considerations involve implementing data encryption, access controls, and options for anonymous responses to protect participant information. Reporting and analytics features need data on the types of reports and export options required. Integration capabilities with third-party systems, scalability metrics, user-friendly interfaces, and adherence to legal and compliance standards further contribute to the system's comprehensive data requirements. Additionally, user support features, training materials, and protocols for maintenance and upgrades are essential for a robust and user-friendly online survey system.

# External Interface Requirement

## GUI

The software provides good graphical interface for the user and the administrator can operate on the system, performing the required task such as create, update, viewing the details of the book.

* + - It allows user to view quick reports like Book Issued/Returned in between particular time.
    - It provides stock verification and search facility based on different criteria.
    - The user interface must be customizable by the administrator
    - All the modules provided with the software must fit into this graphical user interface and accomplish to the standard defined
    - The design should be simple and all the different interfaces should follow a standard template
    - The user interface should be able to interact with the user management module and a part of the interface must be dedicated to the login/logout module

Login Interface:-

In case the user is not yet registered, he can enter the details and register to create his account. Once his account is created he can ‘Login’ which asks the user to type his username and password. If the user entered either his username or password incorrectly then an error message appears.

Search:-

The member or librarian can enter the type of book he is looking for and the title he is interested in, then he can search for the required book by entering the book name.

Categories View:-

Categories view shows the categories of books available and provides ability to the librarian to add/edit or delete category from the list.

Librarian’s Control Panel:-

This control panel will allow librarian to add/remove users; add, edit, or remove a resource. And manage lending options.

# System Features

The users of the system should be provided the surety that their account is secure. This is possible by providing:-

* User authentication and validation of members using their unique member ID
* Proper monitoring by the administrator which includes updating account status, showing a popup if the member attempts to issue number of books that exceed the limit provided by the library policy, assigning fine to members who skip the date of return
* Proper accountability which includes not allowing a member to see other member’s account. Only administrator will see and manage all member accounts

# Other Non-functional Requirements

## Performance Requirement

The performance requirements for the online survey system are crucial to ensure a seamless and efficient user experience. Key aspects include achieving a low response time of ideally 2 seconds for loading survey pages and processing user inputs, fostering user engagement. Scalability is essential to handle a growing number of surveys and participants without compromising performance during peak usage. Concurrent user support is vital for system stability, and efficient survey load times, swift data processing, and high system reliability are integral requirements. Adequate data storage, seamless third-party integration, and mobile responsiveness contribute to overall effectiveness. Load balancing and caching mechanisms optimize response times. In summary, these requirements aim to establish a robust, reliable, and scalable online survey system for administrators and participants.

## Safety Requirement

The database may get crashed at any certain time due to virus or operating system failure. Therefore, it is required to take the database backup so that the database is not lost. Proper UPS/inverter facility should be there in case of power supply failure.

## Security Requirement

* Ensuring the security of an online survey system involves a multifaceted approach.
* Key requirements include robust data encryption for secure transmission, user authentication mechanisms, and granular access controls based on user roles.
* Secure data storage, audit trails, and regular security audits enhance system resilience, while an incident response plan and data backups contribute to effective response and recovery.
* Upholding user privacy through transparent policies and compliance with data protection regulations is paramount.
* Secure software development practices, including regular updates and adherence to secure coding, minimize vulnerabilities.
* Additionally, secure communication channels, employee training on security best practices, and ongoing enhancement of security measures collectively strengthen the system against potential threats, fostering user trust and maintaining system integrity.

## Requirement attributes

* + - There may be multiple admins creating the project, all of them will have the right to create changes to the system. But the members or other users cannot do changes
    - The project should be open source
    - The Quality of the database is maintained in such a way so that it can be very user friendly to all the users of the database
    - The user be able to easily download and install the system

## Business Rules

## In the context of an online survey system, business rules encapsulate and operationalize the policies and practices governing its functionality. These rules serve multiple purposes, such as enforcing business policies, facilitating decision-making processes, and deriving new insights from existing data. Specifically, within the online survey system, business rules encompass regulations that users, both administrators and members, are required to adhere to. This extends to aspects like project costs and the associated discount offers. Users are expected to comply with legal and ethical rules and protocols, ensuring the integrity and legality of their interactions within the system. Both administrators and members are obligated to operate within the defined rules and regulations, fostering a secure and ethical environment for the effective functioning of the online survey system.

## User Requirement

The online survey system involves two main user categories: members (survey participants) and the system administrator. Members are assumed to have basic computer and internet skills, while the administrator possesses a deeper understanding of the system's internals. To facilitate user interaction, the system provides a user-friendly interface, comprehensive user manual, online help, and installation guides. The administrator plays a crucial role in offering facilities such as backup and recovery, password retrieval, data migration, replication, auto-recovery, file organization, and regular server maintenance. Periodic updates are essential for system efficiency. This approach aims to empower users with the knowledge to navigate the system effortlessly, while the administrator is equipped to handle technical challenges. The admin provides certain facilities to the users in the form of:-

* + - Backup and Recovery
    - Forgot Password
    - Data migration i.e. whenever user registers for the first time then the data is stored in the server
    - Data replication i.e. if the data is lost in one branch, it is still stored with the server
    - Auto Recovery i.e. frequently auto saving the information
    - Maintaining files i.e. File Organization
    - The server must be maintained regularly and it has to be updated from time to time

# Other Requirements

## Data and Category Requirement

## Creating a robust online survey system entails meticulous consideration of both data and category requirements. The system must cater to diverse user roles, granting administrators comprehensive control, enabling survey creators to design and manage surveys, and providing participants with limited access for engagement. Efficient management of survey data, user profiles, authentication, and categorization contributes to the system's effectiveness. Security measures, reporting capabilities, integration possibilities, scalability considerations, and an intuitive user interface further enhance its capabilities. Adherence to legal compliance ensures the confidentiality of user information and survey data. Overall, the system is designed to provide a seamless and tailored user experience, facilitating efficient data management, insightful analytics, and meaningful participant engagement with surveys.

## Appendix

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

## 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

## Class Diagram

A class is an abstract, user-defined description of a type of data. It identifies the attributes of the data and the operations that can be performed on instances (i.e. objects) of the data. A class of data has a name, a set of attributes that describes its characteristics, and a set of operations that can be performed on the objects of that class. The classes’ structure and their relationships to each other frozen in time represent the static model. In this project there are certain main classes

which are related to other classes required for their working. There are different kinds of relationships between the classes as shown in the diagram like normal association, aggregation, and generalization. The relationships are depicted using a role name and multiplicities. Here ‘Librarian’, ‘Member’ and ‘Books’ are the most important classes which are related to other classes.

