### Functional Requirements for Online Library Management System

#### 1. User Registration and Authentication

1.1 Users, including students, researchers, and library staff, should be able to create accounts securely.

1.2 The system must provide a robust authentication mechanism to ensure secure logins.

#### 2. Catalog Management

2.1 Librarians should have the ability to create, update, and delete records for physical and digital resources (e.g., books, e-books, journals, research papers).

2.2 Users must be able to search and browse resource details efficiently.

#### 3. Borrowing and Returning Physical Resources

3.1 Users should be able to borrow physical resources with due date management.

3.2 The system must allow users to renew borrowed items.

3.3 Efficient handling of returns, including warnings for overdue items, should be implemented.

#### 4. Reservation System

4.1 Users should have the option to reserve items that are currently checked out.

4.2 The system must notify users when reserved items become available.

#### 5. User Profiles

5.1 User profiles should allow users to review their borrowing history.

5.2 Users must have the ability to update personal information and manage account preferences.

#### 6. Administrative Dashboard

6.1 System administrators should be able to manage user accounts, including access rights and system setups.

6.2 The dashboard must provide monitoring capabilities for system performance.

6.3 Data security measures should be manageable through the administrative dashboard.

#### 7. Notifications

7.1 The system must send automated email notifications for due dates, reserved items, and system upgrades.

#### 8. Reporting

8.1 Basic reports, including resource use and user statistics, should be available to assist libraries in making data-driven decisions.

### Non-Functional Requirements for Online Library Management System

#### 1. Performance Requirements

1.1 The system should provide a responsive and efficient user interface for users and administrators.

1.2 Database operations, such as searching and updating records, should be optimized for quick response times.

#### 2. Security

2.1 User data and library resources must be protected through encryption and access controls.

2.2 The system should undergo regular security audits to identify and address potential vulnerabilities.

#### 3. Scalability

3.1 The system architecture should support scalability to handle a growing number of users and resources.

3.2 It must be designed to efficiently accommodate additional features in subsequent releases.

#### 4. User Training

4.1 The system should include comprehensive training materials for library staff and users.

4.2 Training sessions should cover system usage, data entry, and user support.

#### 5. System Reliability

5.1 The system must undergo rigorous testing to ensure reliability and low error rates.

5.2 Regular backups should be performed to enable restoration with minimal data loss in unforeseen events.

#### 6. Maintainability

6.1 Sheila Roop or delegated personnel should be able to maintain the system effectively.

6.2 Documentation for system maintenance tasks should be provided.

#### 7. Portability

7.1 The system should be designed for portability, allowing it to run on multiple computers with Microsoft Office Professional 2007 or later installed.

#### 8. Accessibility

8.1 The system should implement accessibility features to ensure usability by all, including individuals with disabilities.

8.2 Accessibility compliance with relevant standards should be maintained.

#### 9. Economic Feasibility

9.1 A cost-benefit analysis should be performed to evaluate development expenses against predicted advantages.

9.2 The system's return on investment (ROI) is expected to be positive over time.

#### 10. Timeline (Gantt Chart)

10.1 The development timeline should follow the planned Gantt chart, with milestones and deadlines clearly defined.

This set of functional and non-functional requirements outlines the specific features and characteristics expected from the Online Library Management System. These requirements serve as a foundation for the detailed design and implementation of the system.