**SECTION 3**

# Design Constraints (Nonfunctional requirements)

1. **Reliability Requirements**

RR-1: The system should be available 24/7 with minimal downtime (Scheduled down time after library operating hours shall not be more than 1 hour per day) for maintenance.

RR-2: The system should provide fault tolerance capabilities

RR-3: The system shall show appropriate messages at terminal when system is down.

RR-4: The system shall generate error messages when the user attempts to enter invalid data.

1. **Security Requirements**

SR-1: Incorporating robust security measures to protect against unauthorized access, data breach, and other security threats.

SR-2: Every external communication between data server and end user takes place through VPN

SR-3: Implement data backup and recovery procedures to ensure data integrity and availability

SR-4: The check-in/check-out and recall system shall only be used by users who have librarian ID.

SR-5: There should be separate accounts for admin and other members such that no member can access the database and only the admin has the right to update the database

1. **Performance requirements**

PR-1: Database should be updated within a second

PR-2: User interface shall not take more than 3 seconds to load

PR-3: Login should be validated within 2 second

1. **Usability Requirements**

UR-1: The system should be user friendly interface that promotes easer of navigation and a positive experience for both library staff and patrons

**Glossary**

**Admin**: Mean administrator, a person who is responsible for configuring and maintaining the library management System

**VPN**: Virtual Private Networks. Mechanism for creating a secure connection between two networks, using insecure communication medium such as public internet