**2. System Requirement Analysis**

**2.1 Requirements engineering processes**

The processes used for requirements engineering vary widely depending on the application domain, the people involved and the organization developing the requirements. However, there are a number of generic activities common to all processes

1. Requirements elicitation
2. Requirements analysis
3. Requirements validation
4. Requirements management

We try to follow these steps when we create Bashabari application.

**1)Functional Requirement:** Functional requirements are properties that must exist within the final system. Functional requirement of bashabari application:

i) Owner and tenant registration

ii) Owner and Tenant Login

iii) Manage owner and tenant information

iv) Owner home page with owner information and request’s from tenants. Tenant home page with tenant information and notice’s from owner.

v) Navigation drawer layout Menu bar in both owner and tenants section from where they can navigate other pages.

vi) Owner:

a) Send message and notice to tenants.

b) Register a new tenant.

c) Send monthly bill to tenants.

d) A complete tenant list with tenant information.

e) Update information.

e) owner logout.

Vii) Tenant:

1. Send request to owner.
2. New message from owner.
3. Monthly bill information.
4. Send bill via selected method.
5. Update information.
6. Upload NID image.
7. Tenant logout.

viii) See the information about application in about us section.

ix) Share the application in share section.

**2)Non Functional:** Nonfunctional requirement specifies the quality attribute of a software system. They judge the software system based on Responsiveness, Usability, Security, Portability and other non-functional standards that are critical to the success of the software system. There are many types of nonfunctional requirement like Scalability, Reliability, Availability, Capacity, Security, Environment, Data Integrity. We ensure the usability and effectiveness of the entire software system. As we follow nonfunctional requirement, we get benefits like good user experience, the reliability, availability, performance and formulating security policy of the software system.

**3)Hardware requirement:**

i) i3 Processor Based Computer or higher

ii) Memory: 4 GB RAM

iii) Hard Drive: 50 GB

iv)Internet Connection

v)Android

**4) Software requirement:**

i)Windows 7 or higher

ii)Android development kit

iii)Firebase account

iv)Android 4 or higher

**5)Data Requirements:** The set of data or information that’s involved in project is defined using data requirements. For Bashabari project, the moat data required is that the login information to register the application. Without registration, user will not get the complete feature of our application.

**6) Performance Requirements:** Response time, scalability, platform dependencies, tolerance are the performance requirements that ought to be considered when developing any system. The application or system should be able to respond quickly when the user interacts with the application. The application should be developed in such a way that it should be scalable enough to accept new features when we want to expand the application complexity. The application should run in all the specified software and hardware requirements from the design phase of the project. Also, the tolerance rate of the application should be at a higher level in case of network issues and when the application crashes or stops. It should be able to deliver the information about any of those issues to the user when the system is no longer able to provide results when the user wants.

**7) Testing and Maintainability Requirements:** The application should be able to meet all the possible good and bad test cases under a test environment. Application should be developed in such a way that it does not have any issues or crashes when the user is using the application. It should be able to extend itself when we expand the code or implement any new functions to the existing application.

**2.2 Validation**

Validating any application is an important criterion before releasing the application to the users. If there is no validation, the information entered by users may be redundant, formatted inappropriately, and cannot be maintained. For example, we can validate the mobile number in a way that it should contain 11 digits. Suppose we don’t check the validation; there are chances for the user to enter the wrong phone number and save it. In case the homeowner needs contact with the tenants, the owner cannot contact the respective person. Similarly, validations for all the fields that are used to save information in any application are highly necessary. In this application, we have done many validations in the Registration Page and Login Page.

In the Login Page, we have validated all the login information that is required for the user to sign up for the first time. Fields like username, password, mobile number are validated appropriately by displaying error messages. The username should not contain any digits, the password should be a minimum of six letters, the phone number should be a valid number, and if the phone number is already registered, an error message is shown saying that the phone number exists.