Software Requirements Specification

For

The LNMIIT Gymkhana Workflow Management

Version 1.0

Prepared by

Anshul Gupta
Jitesh Goel
Mohit Taneja
Utkarsh Pyne

The LNM Institute of Information Technology, Jaipur

06-Feb-2014

Table of Contents

Table of Contents ..... **ii**
Revision History ..... **ii**
1. Introduction **3**
1.1 Purpose 3
1.2 Document Conventions 3
1.3 Intended Audience and Reading Suggestions 3
1.4 Product Scope 4
1.5 References 2
2. Overall Description **5**
2.1 Product Perspective 5
2.2 Product Functions 4
2.3 User Classes and Characteristics 5
2.4 Operating Environment 5
2.5 Design and Implementation Constraints 5
2.6 User Documentation 6
2.7 Assumptions and Dependencies 6
3. External Interface Requirements **6**
3.1 User Interfaces 6
3.2 Hardware Interfaces 7
3.3 Software Interfaces 7
3.4 Communications Interfaces 7
4. System Features **7**
5. Other Nonfunctional Requirements **12**
5.1 Performance Requirements 12
5.2 Safety Requirements 12
5.3 Security Requirements 12
5.4 Software Quality Attributes 12
5.5 Business Rules 12
6. Other Requirements **12**

Revision History

Name	Date	Reason For Changes	Version
Anshul Gupta Jitesh Goel Mohit Taneja Utkarsh Pyne		NIL	1.0
Anshul Gupta Jitesh Goel Mohit Taneja Utkarsh Pyne			

1. Introduction

1.1 Purpose

This software package is developed exclusively for the LNMIIT Gymkhana Workflow Management in order to,

- Sanction the annual Budget for the current student senate tenure of the LNMIIT.
- Enable the coordinators of various clubs in the LNMIIT to create and manage their respective events online while implementing abstraction for each step.
- Online schedule creation and maintenance of all the events, hence, saving the time consumed in manually preparing the Semester schedule of the events.
- Safeguarding transparency of funds by enabling the Dean (Student Affairs) and the Finance Department of the LNMIIT to view the collection of funds from their allotted budget in the Student Gymkhana.
- Administrating all the required permissions from various respected personnel such as General Secretary, Finance committee, President, Dean (Student affairs), Finance Department, Chief Warden and Estate Manager of the LNMIIT.
- Increase student participation through easily approachable and user friendly software interface.

1.2 Document Conventions

There are no document conventions.

1.3 Intended Audience and Reading Suggestions

This document is created for,

- The Dean (Student Affairs) of the L. N. M. Institute of Technology to review and suggest refinements if any (when submitted for his/her review at appropriate times).
- The Dean (Student Affairs), the Estate Manager and the Chief Warden of The L. N. M. Institute of Technology to permit requirements if any.
- The Students' Senate for their review and suggestions at appropriate times.
- The Finance Committee of the student senate for his/her review and suggestions at appropriate times.
- The Student Coordinators of the particular event to be organized for their review and suggestions at appropriate times.
- The software development team for their use in analyzing the requirements.

1.4 Product Scope

The scope of the to-be-developed 'The LNMIIT Gymkhana Workflow Management' software package is:

- Club Coordinators-refer Section 1.1
- To enable Club Coordinators to allocate budgets for the events from the budget allocated to their respective club in the LNMIIT student gymkhana.
- To enable the authorized users to securely access 'The LNMIIT Gymkhana Workflow Management' software package using internet.
- Dean (Student Affairs) –refer Section 1.1
- To enable Finance Department of The LNMIIT and Finance committee of The LNMIIT Gymkhana to approve or reject the requested budget for financing of all the arrangements and setup involved in conducting the events through online methods as well as allocation of funds to the respective clubs.

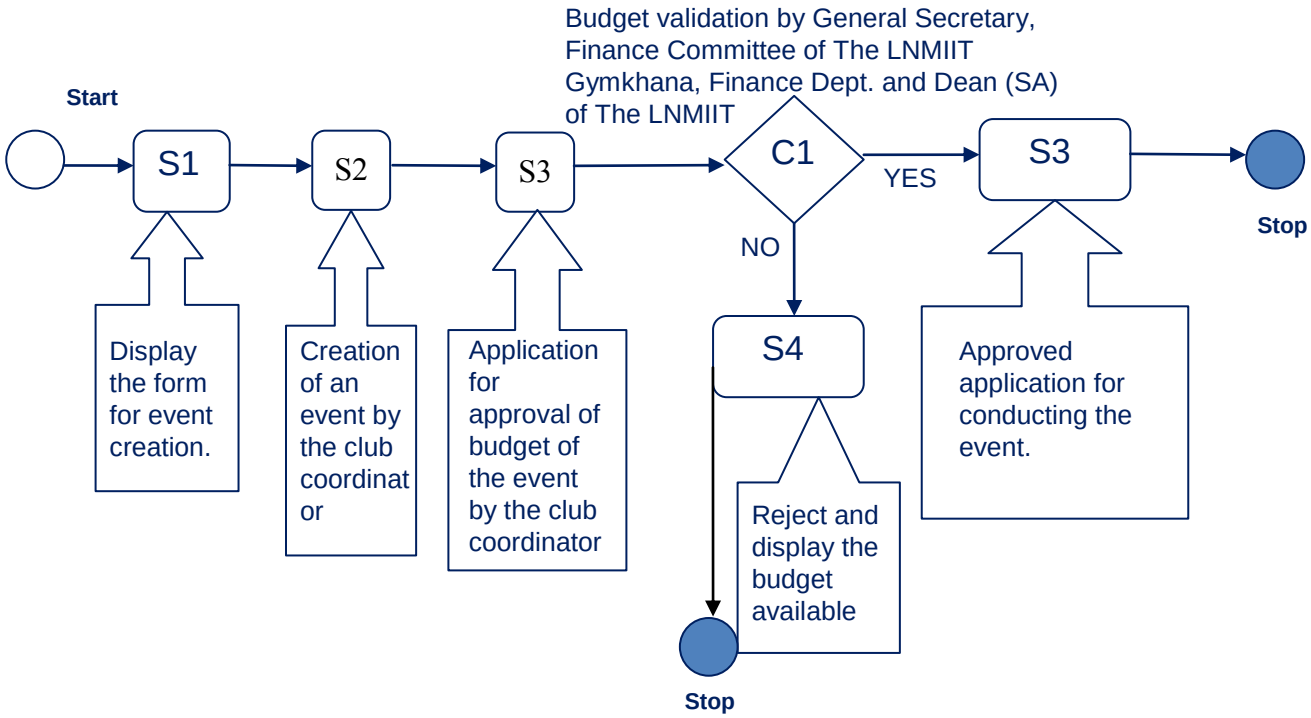
1.5 References

The following reference manuals of the L. N. M. Institute of Information Technology are used in preparing this SRS:

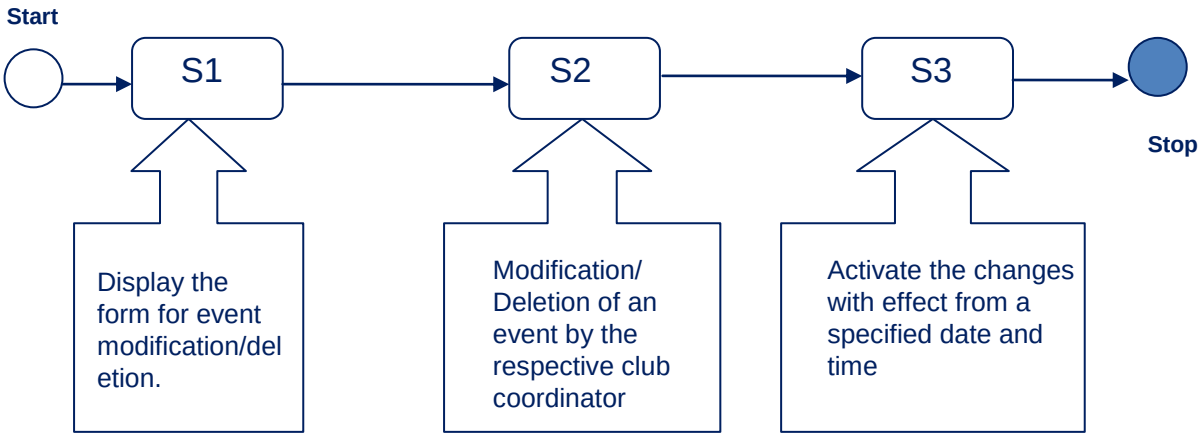
- Minutes-of-the-Meeting between the LNMIIT Students' Gymkhana and Software Development Team held on January 27th 2013.
- The LNMIIT Student Gymkhana Structure Document.

2. Overall Description

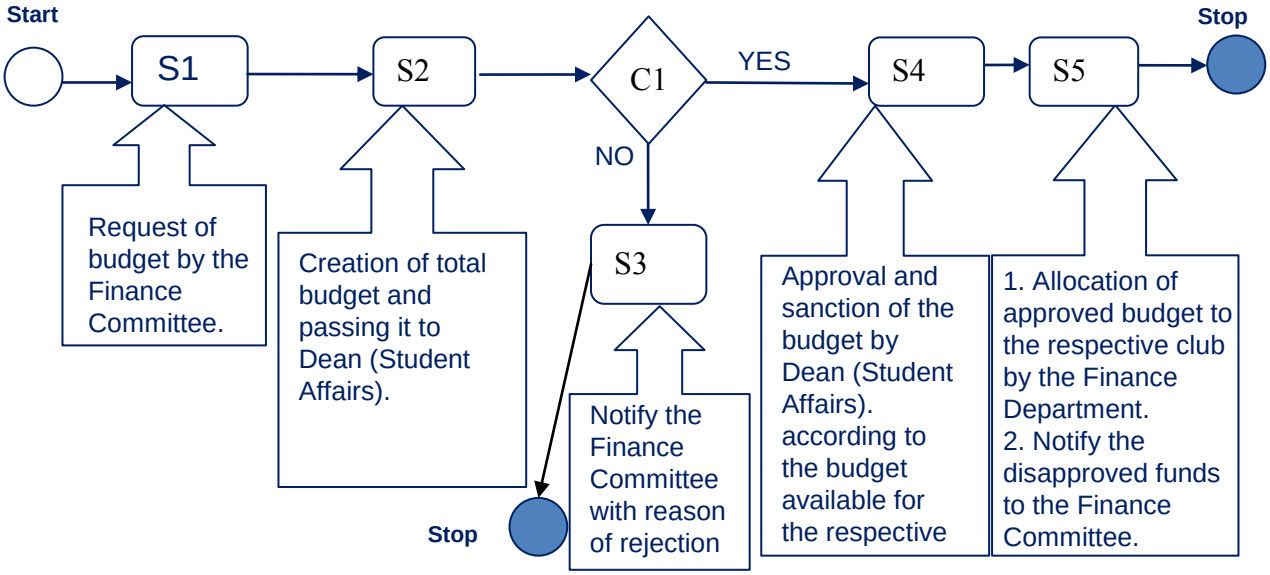
2.1 Product Perspective



The LNMIIT Gymkhana Workflow Management Function Part I: Creation and Management of Events



The LNMIIT Gymkhana Workflow Management Function Part II: Modification or Deletion of Existing Events



The LNMIIT Gymkhana Workflow Management Function Part III: Sanction of Annual Budget by Finance Department.

2.2 Product Functions

This software package is expected to offer the following services:

- For the Club Coordinators of The LNMIIT Gymkhana:
  Facility to see the progress of the application for budget approval of respective event and the details of the all the events of their club.

- For the General Secretaries of The LNMIIT Gymkhana:
  To smoothly schedule and approve the events throughout the year and view the left over budget.

- For the Finance Committee of The LNMIIT Gymkhana:
  Facility to propose the requested budget for various councils and review the budget details of each event.

- For the Finance Department:
  Facility to approve or reject the requested budget for financing of all the arrangements and setup involved in conducting the respective event of each club and view subsequent payments by the corresponding club to the service providers through online/offline methods.

- For the Dean (Student Affairs):
  Facility to pass the overall budget involved in conducting all the events for the current student senate tenure and views the entire budget allocation to all events.

2.3 User Classes and Characteristics

This software package will be used by the following categories of users:

- For the Club Coordinators of The LNMIIT Gymkhana:
  These users will use this software package to create, manage, modify and delete the events and apply for the approval of budget for any event.

- For the General Secretaries of The LNMIIT Gymkhana:
  These Users will use this software package to approve or reject the request for conducting an event by the club coordinators.

- For the Finance Committee of The LNMIIT Gymkhana:
  These users will use this software package to approve or reject the requested budget by the club coordinators to conduct a particular event of their club. These users will also use this to propose the budget for various councils.

- For the Finance Department:
  These users will use this software package to approve or reject the requested budget for financing of all the arrangements and setup involved in conducting the respective event of each club and view subsequent payments by the corresponding club to the service providers through online/offline methods.

- For the Dean (Student Affairs):
  This user will use this software package to pass the overall budget involved in conducting all the events for the current student senate tenure and view the entire budget allocation to all events.

- For the Chief Warden:
  This user will use this software package to permit the in-time permission requested by the Club Coordinator.

- For the Estate Manager:
  This user will use this software package to approve the requested permission to conduct the event after looking over the accessibility issues.

2.4 Operating Environment

This software package is expected to work in the following atmosphere:

Microsoft stack consisting of,

a. MS Windows based Server OS
b. JDK 6.0 (or above)
c. MySQL DBMS version 10g release 2 (or above)
d. NetBeans IDE
e. JDBC

2.5 Design and Implementation Constraints

The design time constraints are:

- The software package should be architected as a multi-tier system (separate web-server, application and RDBMS servers) with duplication of each type of server to achieve fault-tolerance;

- There should be a load-balancer to route incoming transactions so as to balance the load on the two sets of servers;

2.6 User Documentation

- This software package will come with an On-line Help (web pages) for each of the user types on how to use the facilities available for them.

2.7 Assumptions and Dependencies

The username and password of the users (refer section 2.3) of this software are provided by the IT helpdesk administrator. There is a root user who is responsible for creating the accounts of the President, General Secretary, Finance Committee Members, Finance Department, Dean (SA), Chief Warden and Estate Manager.

3. External Interface Requirements

3.1 User Interfaces

The set of User Interfaces consists of,

i) Monitor the status of the application for approval of budget for an event (different UIs for Director, Dean of SA, Finance Committee of The LNMIIT Gymkhana and Club Coordinators).
ii) To keep a track of approved budget for an event and overall allocated budget of a club.
iii) To view various applications for approval of budget that has been requested by the respective club coordinators.
iv) To form the budget allocation for the current student senate tenure.
v) To approve and modify the budget.
vi) To form the Semester Schedule for the different events of various clubs.
vii) To assign prize money to the various events.
viii) To submit the reports of all the events after completion of the each event of the respective club.

3.2 Hardware Interfaces

NIL.

3.3 Software Interfaces

NIL

3.4 Communications Interfaces

This software package should be securely accessible through internet communication channels (wired or wireless).

4. System Features

The requirements of this software package are described per each category of User:

i) All requirements of the Student Coordinators.

ii) All requirements of the General Secretaries.

iii) All requirements of the President.

iv) All requirements of the Finance Committee.

v) All requirements of the Dean of SA.

vi) All requirements of the Chief Warden and Estate Manager.

vii) All requirements of the Finance Department of the LNMIIT.

Business Use Case # 1: All the Requirements of the Student Coordinators:

4.1 Propose Club budget and organize event details

4.1.1 Description and Priority

The TBD (to-be-developed) software package should facilitate Student Coordinators to,

- Create/Modify a new event.
- Get budget for created event.

The priority of this requirement is 90.

4.1.2 Stimulus/Response Sequences

Sr No	Stimulus from the User	Response from the Software
1	Student Coordinators log in with their username and password- assigned to them manually.	re validates the user-id and password; Software displays the home Screen by recognizing the user-id;
2	Coordinator can further propose event budget by filling in amount needed and estimated cost for it.	Software generates the corresponding form displaying the fields related to budget details of the club.

3	Coordinator selects the option 'Create Event'.	Software generates the corresponding form displaying the fields asking for all the requirements of the event.

4.1.3 Functional Requirements

As per the above table described in 4.1.2.

Business Use Case # 2: All the Requirements of the General Secretaries:

4.2 Propose and modify Budget

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate General Secretaries to,

- Manage event(s) schedule.
- Manage event budget.

The priority of this requirement is 90.

4.2.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	General Secretaries log in with their username and password already assigned to them by the system administrator.	ıre validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	General Secretaries can approve or modify the details of an event.	Software notifies the concerned student coordinators.
3	General Secretaries can approve or modify the budget of an event.	Notify the student coordinators about the decision.

Business Use Case # 3: All the Requirements of the Finance Committee:

4.3 Organize and validate Budget

4.3.1 Description and Priority

The TBD (to-be-developed) software package should facilitate Finance Committee to,

- Modify proposed annual budget according to available resources,
- Modify proposed Event budget.

The priority of this requirement is 90.

4.3.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	Finance Committee log in with their username and password already assigned by system administrator	ıre validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	Finance Committee can further prepare annual budget by filling in amount needed and estimated cost for it.	Store the details of budget of the Club and inform respective General Secretary.
3	Finance Committee can select the option modify Club Budget.	Store the details of budget and inform respective General Secretary.

Business Use Case # 4: All the Requirements of the President:

4.4 Preparation and submission of budget

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate event managers to,

- Prepare Annual budget.
- Get budget approved from Dean of SA.

The priority of this requirement is 90.

4.2.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	President can log in using the username and password already assigned by system administrator	ıre validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	Click on accept or send the proposal for reconsideration to Finance Committee, and submit the views for the budget.	Store details of budget in database and inform the Finance Committee and General Secretaries.
3	Present the budget to the Dean of SA.	Store the details in database and inform the Dean of SA.

Business Use Case # 5: All the Requirements of the Dean of SA:

4.5 Monitoring and approving budget

4.5.1 Description and Priority

The TBD (to-be-developed) software package should facilitate the Dean of Student Affairs to,

- Monitor the requirements of the events.

The priority of this requirement is 90.

4.5.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	The Dean can log in with their username and password. Password already assigned by system administrator	ıre validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	The Dean will click the view button to access the Finance Department funds and the annual budget proposal.	Software displays the options to verify the details of the budget with fund resources and requirements.
3	Dean approves or rejects, and submits the views on the Annual budget.	Store the details and inform the Finance team leader about the acceptance/rejection.
4	The Dean will click the view button to access the Balance sheet funds of respective Departments and the event budget proposal.	Software displays the options to verify the details of the budget with the resources of the Annual Budget and requirements of the event.
5	Dean approves or rejects, and submits the views on event details as per the Budget available, timing issues and venue.	Store the details and inform the Finance team leader about the acceptance/rejection.

Business Use Case # 6: All the Requirements of the Finance Department of the LNMIIT:

4.6 Monitor the funds.

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate Finance Department of the LNMIIT to,

- Monitor the status of the funds.
- Verify the annual budget proposal.
- Verify the proposal of event budget according to the available budget with the respective Club.

The priority of this requirement is 90.

4.2.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	The Finance Department staff can log in with username and password. Password already assigned by system administrator.	are validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	He can see and accept/reject a budget quotation.	Accept the input and notify the respected personnel who submitted the quotation.
3	Select the option to view the status of the Budget.	Show the current status of Budget.

Business Use Case # 7: All the Requirements of the Estate Manager of the LNMIIT:

4.7 Permission for Venue.

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate Estate Manager of the LNMIIT to,

- Permitting the use of a particular venue.

The priority of this requirement is 90.

4.2.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	The Estate Manager can log in with username and password. Password already assigned by system administrator.	are validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	He can see event details and allocate a venue.	Accept the input and notify the respected personnel.

Business Use Case # 7: All the Requirements of the Chief Warden of the LNMIIT:

4.8 Permission for Hostel-in time extension.

4.2.1 Description and Priority

The TBD (to-be-developed) software package should facilitate Chief Warden of the LNMIIT to,

- Permitting the Hostel in-time extension for an event.

The priority of this requirement is 90.

4.2.2 Situation-Response Sequence

SrNo	Stimulus from the User	Response from the Software
1	The Chief Warden can log in with username and password. Password already assigned by system administrator.	ıre validates the user-id and password; Software displays the home Screen by recognizing the user-id.
2	He can see event details and allow the extension in in-time of the hostels.	Accept the input and notify the respected personnel.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Each transaction (situation-response case), on an average taken for a duration of 100 hours or till 1000 transactions are successfully completed, should have a turn-around time of less than 5 seconds under the following load on the software:

- There are 100 users accessing this software per hour
- There are 100 event details in server.

5.2 Security Requirements

This software should,

i) Authenticate each user, who logs in;
ii) When the user performs any actions, Authorize him / her to perform the actions allowed for the user and display an error message if found to be not authorized;

5.3 Other Software Quality Attributes

- **Reliability:**
  A failure should not occur while the users are making changes to their account.

(or while instructor is updating the marks n grades).

- **Extensibility/Maintainability:**
  The software will be incremental type and any further modifications can be implemented depending upon the hardness level of modification.

- **Performance:**
  All the transactions must be completed in less than 5 seconds.

- **Usability:**
  This software is being offered to be used in a university scenario and the users of this module will be under graduate and post graduate students, instructors, the Dean, the Director, the registrar and the administrator.

- **Availability:**
  All the hardware and the software related to this particular module come in the windows package. Care must be taken while installing the Windows environment on your machine because at the time of installation, all those packages should also be installed.

- **Security:**
  The module must not be accessible by the outsiders (any person who is not a part of that institute) and hence, an authorization service is being implemented, so that only those students/instructors who are having a valid Password and Password will be given access to this module.

5.4 Business Rules

See Appendix for a complete list of all the rule-sets.

6. Other Requirements

Appendix: To Be Determined List

The major references which were useful in making this SRS and would be helpful with respect to the TBD s/w package are-

- http://applicationarchitecture.wordpress.com/2010/03/02/architectural-pattern-single-node-deployment-configuration-for-multi-tier-network-centric-software-applications/
- http://www.docstoc.com/docs/20394509/Example-SRS