Software Requirements Specification

for

The LNMIIT Student Teacher Evaluation

Version 2.0

Prepared by

Project Manager

Group 27 Pvt. Ltd.

<11.02.2013>

Table of Contents

Revision History

Name	Date	Reason For Changes	Version
Project Manager	24/01/2013	Initial Draft 1.Added all system features 2.Data Flow Diagrams will come in later versions of SRS	0.1
Project Manager	30/01/2013	Added Appendix	1.0
Ptoject Manager	11/02/2013	Fine Tuning and Addition of certain Fields	2.0

1. Introduction

1. Purpose

This software package is developed from scratch exclusively for LNM Institute of Information Technology in order:

    i.   To ease out evaluation process for their course instructors through an interactive web based GUI

    ii.   To generate evaluated results for students and their parents in there personalized web login system.

    iii.   To automate course feedback process and thus saving logistics and resources.

    iv.   To generate grade reports based on evaluation process.

2. Document Conventions

"LNMIIT" refers to The LNM Institute Of Information Technology, the client for TBD (to-be-developed) software.

3. Intended Audience and Reading Suggestions

This document is created for,

    I.   Students to review their course-logistics as soon as they are available.

    II.   Professors to automate their grading process and make it easier and efficient.

    III.   Academic Administrator to analyse and extract the data corresponding to the students automatically and generate their grade reports.

    IV.   Parents of students to see their ward's course-logistics as soon as they are available.

4. Product Scope

The scope of the to-be-developed 'Student Teacher Evaluation' software package is:

    I.   To cater all activities of LNMIIT's evaluation process, viz, from the grade submission activity to the final report generation.

    II.   To enable the LNMIIT students to securely access their user profiles using internet in order to view their grade report.

    III.   To cater all the students of all the disciplines and branches in LNMIIT (UG).

5. References

The following reference manuals of LNMIIT are used in preparing this SRS:

    I.   UG manual of LNMIIT.

II.   Minutes of the meeting with Prof. Ravi Gorthi and Mr. Rajiv Saxena.

2. Overall Description

1.   Product Functions

This software package is expected to offer the following facilities:

a)   For the Academic Administration
- i.   To send the student enrolment details to each instructor.
- ii.   To receive printed Grade Reports of all students in one file.
- iii.   To receive end-semester Course-Instructor Feedback forms of all courses submitted by all student.

b)   For the Course Instructors
- *i.*   To receive lists of enrolled student for the course(s) offered by them.
- ii.   To add evaluation fields dynamically as per the list of available types of fields in Appendix - A.1.
- iii.   To submit marks of each student in the added fields.
- iv.   To view class performance based on charts, graphs and criteria mentioned in Appendix – A.2
- v.   To receive regular feedback from students.
- vi.   To receive end-semester evaluation as per the prescribed form in Appendix - A.3

c)   For the Students
- i.   To get information regarding the grades/results as soon as they are submitted
- ii.   To give feedback both anonymously and named on a regular basis.
- iii.   To submit semester end Course-Instructor Feedback form online as per the prescribed form in Appendix.

d)   For the Parents
- i.   To view performance of their ward in all the registered courses.

2.   User Classes and Characteristics

This software package will be used by four categories of users:

a) **Academic Administrator of The LNMIIT:** This user can add instructors, courses. He opens the end semester Instructor Evaluation process for students. Apart from this this user

can generate final grade sheets of all the students in the printable format. Also this user gets the semester feedback reports given by students for each instructor.

b) **Course Instructor of The LNMIIT:** This user evaluates students by using different options provided by the interactive EvalGUI provided by the software and also he receives the feedback about instructor given by student.

c) **Students of The LNMIIT**: This user can view the marks, grades of his registered courses evaluated by the instructor. He can fill and send the end-semester instructor feedback evaluation form to the instructor and the academic administrator.

d) **Parents of students of The LNMIIT:** This user can view the academic performance of their ward as and when the instructor uploads the marks and grades of their ward.

3.   Operating Environment

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

a)   All operating systems with JAVA supported Browser.

4.   Design and Implementation Constraints

Software will not work on Browsers not supporting JAVA. (Implementation constraint)

5.   User Documentation

The details of the (i) Analysis, (ii) Design and (iii) Test Cases of this software package will be delivered along with this software.

6.   Assumptions and Dependencies

There are no assumptions made.

3. External Interface Requirements

1) User Interfaces

The set of User Interfaces consists of:

a) To add Instructors, Courses and their specifications as mentioned in Appendix- A..
b) To add marks of registered students in the EvalGUI and compute the grades by giving weightage and cutoffs for different grades.

c) To view marks and grades of registered courses and fill Semester End Instructor Evaluation Process.

2) Hardware Interfaces

Nil.

3) Software Interfaces

Nil. This is a completely isolated module.

4) Communications Interfaces

This software package should be securely accessible through internet communication channels via java supported web browsers (listed in Appendix) in all Operating System

4. System Features

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

I.   All the Requirements of the Academic Administrator

II.   All the Requirements of Course Instructors of LNMIIT

III. All the Requirements of students of LNMIIT

IV.   All the Requirements of parent of the students of LNMIIT:

Business Use Case # 1: All the Requirements of the Academic Administrator:

4.1.1   Description and Priority

The TBD (to-be-developed) software package should facilitate the Academic Administrator to,

i)   Adds a new course instructor with fields mentioned in Appendix A.7.
ii)   Adds a course with associated faculty and its id along with the list of enrolled student according to the prescribed format in Appendix A.5
iii)   Receives final grade reports of each student with all his enrolled courses in a single file.
iv)   Receives 'End Semester Course Feedback' statistics for each faculty as per Appendix

This requirement is essential (without this facility, other requirements do not work).

4.1.2   Stimulus/Response Sequences

Sr No	Stimulus from the User	Response from the Software
1.	Academic Administrator logs-in using user-id and password and selects the admin box (see Appendix for user-id and password rules)	Software will validate the user-id and password; If login is successful, software will display the Academic Administrator's initial screen
2.	Academic Administrator choses the 'Add Course' Option	The software will ask for Course Name, Credits, Instructor Name, Instructor Id, list of Enrolled Students as per prescribed format in Appendix A.5. The software then validates the format, checks whether the course is already added, checks for instructor name and id If all fields are correct it accepts else displays error prompting to re-enter.
3.	Academic Administrator chooses the 'Add Instructor' option;	The software will display the form (see Appendix-A.7 for a list of the fields) to enter the details of the new faculty.
4.	Academic Administrator choses the 'Print Grade Reports'	The Software checks if evaluation process is complete for all the courses, if yes the software generates grade reports of all the students else it generates the list of courses whose final evaluation have not been submitted in a pop-up box.
6.	Academic Administrator choses 'Allow End Semester Course-Instructor Feedback' Option	The software allows all the students to fill the End Semester Feedback Form.
7.	Academic Administrator chooses the 'Generate Instructor Evaluation Statistics' option	The software generates the evaluation statistics for each faculty member as per the format in Appendix A.
8.	Academic Administrator Chooses 'Change Password' Option	The software asks the old password and request new password, asks for new password confirmation, validates the details, if Correct changes the password else shows error message and prompts to reenter the details.
9.	Academic Administrator choses 'Home' Option	The Software navigates the screen to the home screen of the Academic Administrator.
10.	Academic Administrator choses 'Sign Out' Option	The Software ends the session and navigates to the login page.

4.1.3   Functional Requirements

As per the above table described in 4.1.2.

Business Use Case #2: All the Requirements of Course Instructors of LNMIIT:

4.2.1   Description and Priority

The TBD (to-be-developed) software package should facilitate the Course Instructor of LNMIIT to:

i.   Receive lists of enrolled student for the course(s) offered by them.
ii. Do evaluation of students using an interactive interface "**EvalGUI**" which will have following facilities
   a. To add an Evaluation field at any point of time during the course session
   b. To enter the obtained marks of each student in the particular field
   c. To view class performance based on charts, graphs and criteria mentioned in Appendix A.2
   d. To assist in final grading process interactively.
iii. Receive end-semester evaluation as per the prescribed form in Appendix A.

4.2.2   Situation-Response Sequence

Sr No	Stimulus from the User	Response from the Software
1	The Course Instructor logs in the system with Instructor ID and password and password and selects the instructor box (see Appendix for user-id and password rules)	Software will validate the Instructor-id and password; If login is successful, software will display the List of Courses Offered by him.
2	The Course Instructor chooses 'Change Password Option'	The software asks the old password and request new password asks for new password confirmation, validates the details, if Correct changes the password else shows error message
3.	The Course Instructor chooses a particular course	The software shows two options 'End Semester Feedback' and 'EvalGUI'
4.	The Course Instructor chooses 'End-Semester Feedback' option	If no feedback has been received the software prompts the message "No Feedback Recieved" else the software shows current Feedback thread and give options to print end semester Feedback report.
5.	The course Instructor chooses EvalGUI option	The Software displays the Graphical User Interface for evaluation (EvalGUI),
6.	The course Instructor chooses 'add Evaluation Field' in the EvalGUI	The software asks for field name, maximum marks and field type as per the list in Appendix A, It checks if the field name is already used, if it is used gives an error message else accepts the new field.
7.	The course Instructor chooses 'Update Marks' for a particular evaluation field in the EvalGUI	The software updates the entries of all the students for that evaluation field as per the given entries in the

		EvalGUI. If any field is missing the software automatically puts 0.
8.	The course Instructor chooses Public View option for an Evaluation field in the EvalGUI	The software makes these entries available to the student and their parents.
9.	The Course Instructor chooses 'Class Performance' for an evaluation field in the EvalGUI	The software gives the different class performance charts as mentioned in the Appendix A
10.	The Course Instructor Chooses 'Delete Field' Option in the EvalGUI	The Software asks for the field to be removed, checks for available field and confirms it from the course instructor, If confirmed removes the prescribed evaluation field and gives message.
11.	The course Instructor chooses 'Calculate Total Option' in the EvalGUI	The Software asks for weightage corresponding to each type of evaluation And generates final total of each students using these weights as described in the appendix-B. The software also allows the instructor to change the weights before freezing the final grades by choosing 'Calculate Total' option again.
12.	The course Instructor chooses 'Final Performance' option in the EvalGUI	The software gives different charts and statistical measures related to final performance of all student.
13.	The Instructor chooses 'Cut off' option	The software asks for cut off parameters for different grades. Based on the final performance and using cutoff parameters the software assigns each student the corresponding letter grade. The software also gives the number of students belonging to each grade.
14.	The Course Instructor chooses 'Freeze Grades'	The Software locks the grades and makes them available for printing.
15.	The Course Instructor choses 'Home' Option	The Software navigates the screen to the home screen of the Course Instructor
16.	The Course Instructor choses 'Sign Out' Option	The Software ends the session and navigates the screen to the login page.

Business Use Case #3: All the Requirements of students of LNMIIT:

4.3.1   Description and Priority

The TBD (to-be-developed) software package should facilitate the students of LNMIIT:

ii)   Receive evaluation details as and when they are submitted by the course instructor of the enrolled courses

iii)   to give weekly feedback to enrolled course instructors in text format in both named and anonymous way
iv)   Fill semester end course feedback as per the prescribed format in Appendix

(DON'T KNOW ABT The priority of this requirement is 90.)

4.3.2   Situation-Response Sequence

Sr No	Stimulus from the User	Response from the Software
1.	The Student logs in the system with CollegeID and password	Software will validate the user-id and password; Software will display the List of Enrolled courses.
2.	Student Choses 'Change Password Option'	The software asks the old password and request new password asks for new password confirmation, validates the details, if Correct changes the password else shows error message
3.	Student Choses a course from the enrolled course list	The software displays the current performance in the fields evaluated by the course instructor along with parameters mentioned in Appendix, If the course instructor has completed the evaluation process, the software also displays the Final Grade Received
4.	Student chooses 'End Semester Course - Instructor feedback' option for a particular course.	If this is not allowed by the Academic Administrator the software prompts an error else the software displays the Evaluation form as per the Appendix.
15.	Student choses 'Home' Option	The Software navigates the screen to the home screen of the Student
16.	Student choses 'Sign Out' Option	The Software ends the session and navigates the screen to the login page.

Business Use Case #4: All the Requirements of parent of the students of LNMIIT:

4.4.1   Description and Priority

The TBD (to-be-developed) software package should facilitate the parent of the students of LNMIIT to:
i.   Receive evaluation details of their ward as and when they are submitted by the Course Instructors of their wards enrolled courses.

This requirement is essential.

4.4.2   Situation-Response Sequence

Sr No	Stimulus from the User	Response from the Software
1	The Parents logs in the system with	Software will validate the user-id

	CollegeID and password	and password; Software will display the List of Enrolled courses of their ward
2	Parent Choses 'Change Password Option'	The software asks the old password and request new password, asks for new password confirmation, validates the details, if Correct changes the password else shows error message
3	Parent Choses a course from the enrolled course list	The software displays the current performance in the fields evaluated by the course instructor, If the course instructor has complete the evaluation process, the software also displays the Final Grade Received
4.	Parent choses 'Home' Option	The Software navigates the screen to the home screen of the Student
5.	Parent choses 'Sign Out' Option	The Software ends the session and navigates the screen to the login page.

5. Other Nonfunctional Requirements

1. Performance Requirements

Each transaction on the software should have a turnaround time of 3 secs for all stimulus under the following maximum load on the software

    i) There are 10 Course Instructors using the EvalGUI simultaneously

    ii) There are 500 students accessing their evaluated grades and giving feedback simultaneously

    iii) There are evaluation records of 1500 students enrolled for 5- courses on an average in the system

2. Safety Requirements

i)   Create a PDF of grades/marks of each student along with their ids and store it in the administrator system.

ii)   Create a back-up of all these PDF files on CD every semester and store these in safe locker (to be manually inspected by administration staff).

3. 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;

    iii)   Students can only view their grades and not the grades assigned to any other student.

    iv)   Edit option for evaluated fields does not lie with the students; it only lies with the course Instructor

    v)   Edit option for the list of enrolled students lies with both Academic Administrator and the Course Instructor.

4. Software Quality Attributes

Nil

5. Business Rules

Nil

6. Other Requirements

Nil

Appendix A: Glossary

1. List of type of Evaluation Field

    i. Quiz
    ii. Assignment
    iii. Mid-Semester Exam
    iv. End Semester Exam
    v. Project
    vi. Presentation
    vii. Viva

2. Class Performance
    A. Statistical Parameters
        i. Average
        ii. Highest Marks
        iii. Lowest Marks
    B. Charts
        i. Histogram of number of students and Range
        ii. Commutative Distribution of Students vs. total Marks

3. End-Semester Evaluation Form

4. End-Semester Statistics

5. Format of Add Course

    Course ID
    Credits
    Faculty Name
    Faculty ID
    List of Students Choose a excel file

    In Excel Format as per following details:

S.No.	Student Name	Student ID

6. User Name and Password

    A. Academic Administrator
        Username admin: Case Insensitive
        Password admin: Initial Set

    B. Instructor

           Username <InstructorID>: :Case Insensitive
           Password: <InstructorID> :Initial Set

C. Students
           Username <CollegeID>: :Case Insensitive
           Password: <CollegeID> ::Initial Set

D. Parents
           Username <P_CollegeID> : :Case Insensitive
           Password: <P_CollegeID> : :Initial Set

=

2.   Fields for Add Course Instructor

           Instructor Name.
           Instructor ID.

Appendix B: Analysis Models

Formulation for Calculation of total using weights by the instructor

The formulation for calculating the total is illustrated using an example.

In the attached template for EvalGUI

Let the Weights set by Instructor be

Endsem	40
Midsem	30
Project	10
Quiz	15
Assignment	5

Student ID y10uc283 got following marks in all the field

Field Type	Name of Field	Marks Obtained	Weights	Calculated using Weights
Quiz	Q1 (M.M 5)	5	5	5
	Q2 (M.M 15)	11	5	3.667
	Q3 (M.M 5)	1	5	1
Assignment	A1 (M.M 20)	19	5	4.75
Project	P1 (M.M 20)	14	10	7
MidTerm	M1 (M.M 40)	23	30	17.25
EndSem	E (M.M 60)	12	40	8
			Total	46.67

For Calculating the total the software assigns equal weightage to all the evaluation field of a particular type of Evaluation Field. For example Quiz has 15 % weightage and there are three Quizzes (Q1,Q2,Q3). Thus software assigns equal weightage to each field that is 5% to each quiz.