

Software Requirements Specification

for

PG Admission Management

Version 3.0 approved

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+Table of Contents

Table of Contents	ii
Revision History	ii
1. Introduction	1
1.1 Purpose	1
1.2 Document Conventions	1
1.3 Intended Audience and Reading Suggestions	1
1.4 Product Scope	1
1.5 References	1
2. Overall Description	2
2.1 Product Perspective	2
2.2 Product Functions	2
2.3 User Classes and Characteristics	2
2.4 Operating Environment	2
2.5 Design and Implementation Constraints	2
2.6 User Documentation	2
2.7 Assumptions and Dependencies	3
3. External Interface Requirements	3
3.1 User Interfaces	3
3.2 Hardware Interfaces	3
3.3 Software Interfaces	3
3.4 Communications Interfaces	3
4. System Features	4
4.1 System Feature 1	4
4.2 System Feature 2 (and so on)	4
5. Other Nonfunctional Requirements	4
5.1 Performance Requirements	4
5.2 Safety Requirements	5
5.3 Security Requirements	5
5.4 Software Quality Attributes	5
5.5 Business Rules	5
6. Other Requirements	5
Appendix A: Glossary	5
Appendix B: Analysis Models	5
Appendix C: To Be Determined List	6

Revision History

Name	Date	Reason for Change	Version
Aakanksha Chauhan Aakirti Agrawal Aanchal Tulsiani Ayushi Gupta	27-8-2018	Initial Preparation	V 1.0
Aakanksha Chauhan Aakirti Agrawal Aanchal Tulsiani Ayushi Gupta	02-09-2018	Removing ambiguities	V 2.0
Aakanksha Chauhan Aakirti Agrawal Aanchal Tulsiani Ayushi Gupta	12-11-2018	Updating Software Requirements	V 3.0

1. Introduction

1.1 Purpose

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

- Regulate the online PG registration process for LNMIIT.
- Aims at increasing productivity, accuracy and consistency.
- Increase the average number of student applications processed per day by deploying this software package.
- Enable the registration process on-line and subsequently know the status by themselves through secure internet-based access to LNMIIT application software package.
- Automation providing efficiency in Online document verification.

1.2 Document Conventions

The following documentation conventions are followed in preparing this SRS:-

- The mandatory fields in the application form are marked with asterisk (*).
- The tentative fields (eg. dates) are specified with double asterisk (**).
- The essential requirements are highlighted in bold.

1.3 Intended Audience and Reading Suggestions

This document is created for:-

- The PG Admission officers of the Administrative Department of LNMIIT to review and suggest refinements if any (when submitted for their review 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 'PG Admission Management' software package is:

- To cater to all the students willing to apply for the PG programs (M.Tech, M.Sc and PhD) offered by LNMIIT.

- To enable the secure transaction of the application form fees.
- To cater all activities of PG Admission Management, viz, from the application submission activity to written exam scheduling (if required), interview scheduling, approval / rejection of application forms and payment activities.
- To list the courses and seats available offered in different domains for the PG students.

1.5 References

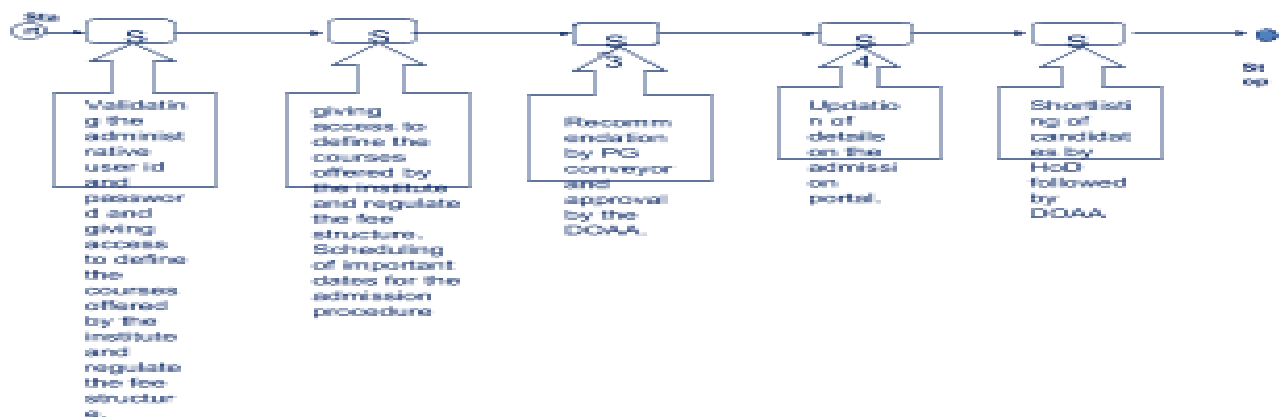
The following reference manuals of the PG Admission Management are used in preparing this SRS:

- Minutes-of-the-Meeting between the LNMIIT SWE Course instructor and the PG students of LNMIIT, held on
- SRS for ABC Bank's Loan Management Version 1.0 prepared by Prof. Ravi Gorthi, the LNMIIT, Jaipur.

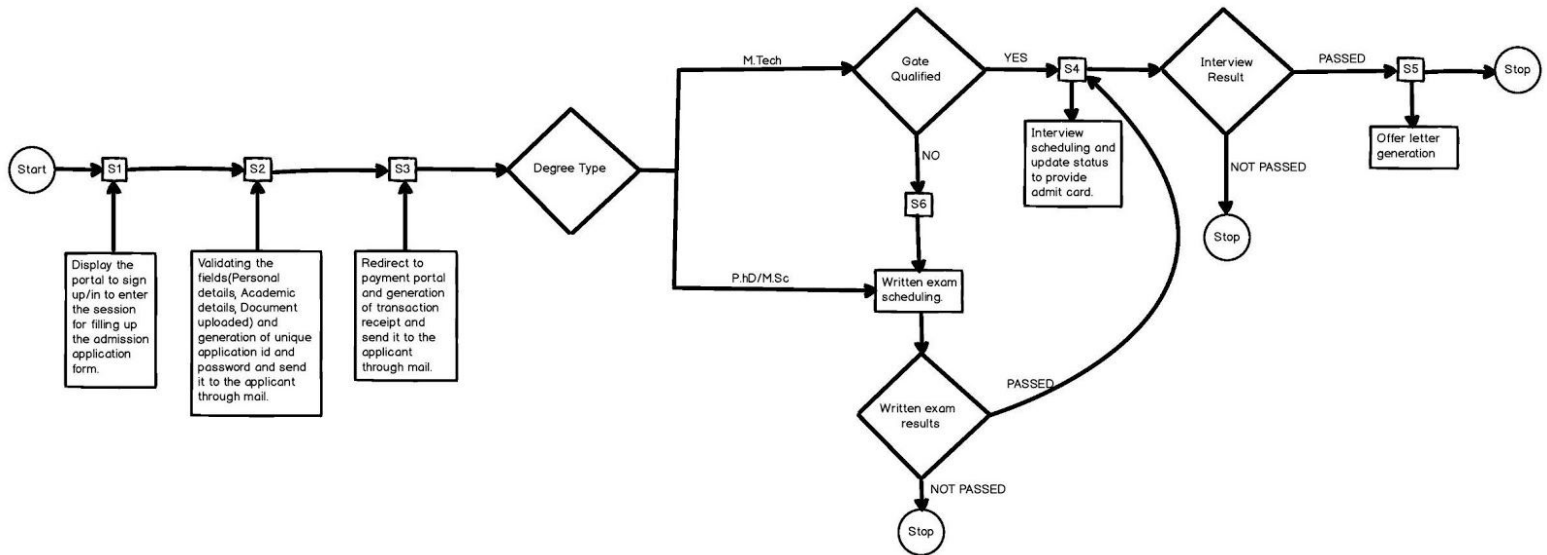
2. Overall Description

2.1 Product Perspective

Part-1: Administrative perspective



Part-2: Applicant perspective



2.2 Product Functions

This software package is expected to offer the following services:

- a. For the Administrative Staff of LNMIIT:
 - a. Facility to maintain record of the details of the student who have applied; and a facility to define and maintain the process flow and eligibility rules of the admission procedure.
- b. For HoD and DOAA:
 - a. Facility to review the application; and shortlist candidates for interview/written exam based on their marks available through the software and update the status in student portal.
- c. For the Applicants of PG Admission:

- b. Facility to go through the eligibility rules and the admission criteria online ; facility to fill-in and submit PG applications online; facility to find out the status of each application by its primary applicant.

2.3 User Classes and Characteristics

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

- a. **Administrative Staff of the LNMIIT:** These users will use this software package to provide and update the details of the admission procedure and regulate the eligibility rules and process activities.
- b. **Applicants :** These users will use this software package to find out the details of the admission procedure consisting of courses available, important dates(which includes deadline for filling the form, date for announcement of written exam/interview, and the date for result declaration and joining), whether they are eligible and if so, to apply for a given course, and track the status of their application.
- c. **HoD and DOAA:** These users will use this software package to review the application; and shortlist candidates for interview/written exam based on their marks available and update the status in student portal.

2.4 Operating Environment

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

- i. Microsoft stack consisting of,
 - a. MS Windows Vista based thin clients
 - b. MS Windows based Server OS
 - c. Visual C++ and / or Java Standard Edition 2.0 (or above)
 - d. Oracle RDBMS version 10g release 2 (or above)

2.5 Design and Implementation Constraints

The design time constraints are:

- i. 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;
- ii. There should be a load-balancer to route incoming transactions so as to balance the load on the two sets of servers;
- iii. More than 10,000 students should be able to concurrently access the PG Admission facilities of this package per day from all parts of the world.

2.6 User Documentation

- i. This software package will come with an On-line Help (web pages) for each of the two types of users (i.e. Administrative Staff and Applicants) on how to use the facilities available for them.
- ii. The details of the (i) Analysis, (ii) Design and (iii) Test Cases of this software package will be delivered along with this software.

2.7 Assumptions and Dependencies

No assumptions have been made.

3. External Interface Requirements

3.1 User Interfaces

The set of User Interfaces consists of,

- a. Administrative Staff User Interface:

- i. To define and update information regarding courses offered, important dates, fee structure and the eligibility rules.
 - ii. To view the details of the applicants and regulate the further process.
- b. Applicants User Interface
 - i. To read details online.
 - ii. To Edit and Submit the application form
 - iii. To check the status of their application.
- c. HoD and DOAA user Interface
 - i. To review applications online
 - ii. To shortlist candidates for further rounds
 - iii. To update the status on student portal.

3.2 Hardware Interfaces

NIL

3.3 Software Interfaces

This software package should have an interface with,

- i. The transaction portal of different transaction modes available (Paytm, Credit/Debit card, Net Banking, etc.).
- ii. Database of applicants information.
- iii. Database of courses offered by the Institute (PhD, M.Sc, M.Tech).

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 LNMIIT's Administrative Staff
- ii. All requirements of the Applicants.
- iii. All requirements of HoD and DOAA.

Business Use Case # 1: All the Requirements of the LNMIIT's Administrative Staff:**4.1 Define and Update Admission rules****4.1.1 Description and Priority**

The TBD (to-be-developed) software package should facilitate the Administrative staff to,

- i. Define information regarding courses offered, important dates(deadline for filling the form, date for announcement of written exam/interview, and the date for result declaration and joining), fee structure, the eligibility rules and the process flow of the admission procedure.
- ii. Update the important dates and no of seats available under the admission procedure.
- iii. Update the status of the student applications, and send important documents to them like admit card and offer letter through mail.

4.1.2 Stimulus/Response Sequences

S	Stimulus from the User	Response from the Software
1	AS (Administrative Staff) logs-in using user-id and password	Software will validate the user-id and password; Software will display the Administrative Staff initial Screen by recognizing the user-id;
2	AS chooses the "Define Information" option.	Software will authenticate whether the AS is permitted to make updates or not; if permitted, then the software

		will display the form to list the important dates, criteria and all the associated rule-sets; there should be a facility to upload the already created rule-sets from an XML file; else, the Software will display an error message;
3	With the recommendation of the PG conveyor and approval of the DOAA, AS will enter all the details of required fields (courses offered, fee structure, eligibility criteria and important dates) and also will enter all the associated rule-sets OR will upload the associated rule-sets from an XML file;	Software will validate all the entered fields; software will also validate all the associated rule-sets; if there are any errors, the software will re-display the screen with the errors being high-lighted; else, the software will display a message that the fields have been successfully updated;
4	AS chooses the “Update Information” in case of any discrepancies and update the required information.	Software will again validate the newly entered information and will make the necessary changes.
5	AS chooses the “Send documents” option to send the e-admit card or e-offer letter to the mail id of students.	Software will redirect to any web email service and attach the required documents and send to all student at one click.

4.1.3 Functional Requirements

As per the above table described in 4.1.2.

Business Use Case # 2: All the Requirements of Applicants:

4.2 Submit a Application

4.2.1 Description and Priority

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

- i) Review the PG Admission procedure and eligibility rules,,
- ii) Complete a Application details and submit it,
- iii) Find out the status of a submitted application

4.2.2 Situation-Response Sequence

S	Stimulus from the User	Response from the Software
1	The User accesses the LNMIIT PG Admission Software through the internet;	Software displays the following options: (a) Sign-up as a new user OR (b) Log-in as an existing user
2	The Applicant signs up as a new user;	Software displays a Applicant Profile form;
3	The Applicant fills-in the profile form fields which a complete list of mandatory and optional fields	Software validates the fields; if there are any errors, software will display the error messages else it will display the message that the Applicant has successfully created a user-id and password for himself / herself through mail; software will display the 'Customer Initial Screen'.
4	The Applicant enters the academic details and uploads the required documents.	Software will display the available courses and corresponding fields for further validation.
5	The Applicant will submit the form.	Software will validate all the fields; if there any errors, software will display the errors; else, software will

		display the message that the application is successfully submitted and mail the 'Application id and password' to the Applicant and redirect to the payment portal.
6	The Applicant will pay the Application fee.	Software will generate a transaction receipt and mail it to the Applicant.
7	The Applicant will check for the status of his/her application.	Software will schedule the interview or written exam and provide the admit cards.
8	The Applicant will check for the result of his/her concern.	Software will generate an offer letter (if selected) or display a message "Applicant is not selected" (if not selected).

Business Use Case # 3 All the Requirements of HoD and DOAA

4.3 Shortlist Candidates

4.3.1 Description and Priority

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

- i. To review applications online
- ii. To shortlist candidates for further rounds
- iii. To update the status on student portal.

4.3.2 Situation-Response Sequence

S	Stimulus from the User	Response from the Software
1	The user access the applications by clicking on	Software displays the list of pdf of all the applications

	the button “Review applications”	along with their scores
2	The user shortlist the candidate(based on eligibility criteria) by clicking on the button “shortlist”	Software will update the status to “selected” or “not selected” in the student’s portal.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

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

- i. There are 100 users accessing this software per hour
- ii. There are 3 course types that are ‘Active’ and
- iii. There are 10,000 student applications in the system.

5.2 Safety Requirements

This software makes the PG Admission Processing ‘paperless’; this software should,

- i. Create a PDF of Admit card along with Photograph of applicant (for Interview/written Exam) and Offer letter for Joining.
- ii. Create a backup of all these PDF files on Google drive for every newly generated application receipt.

5.3 Security Requirements

This software should,

- i. Authenticate each user, who logs in (i.e. should have a valid Application ID and password);

- 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. Use a 64 bit key to encrypt all data of all the transactions transferred to and from the thin client and the server; similarly, encrypt all the data that is stored in the database tables / XML files;
- iv. Direct applicants to a secure transaction portal.

5.4 Software Quality Attributes

NIL

5.5 Business Rules

1. **Admission eligibility rules:** The written exam/ Gate score will be the deciding factor for the admission procedure.
2. **Application approval rules:** In case of part time PhD applicants, they need to provide authenticated job letter; All the students are required to have a proper graduation certificate with no active backlogs.
3. **Application fee rules:** The fee structure will be decided by the AS and approved by the PG conveyor and the Director.
4. **Fees repayment default rules:** In case of failed transaction, the applicant will be redirected to the payment portal with a proper notification by the institute regarding the failed transaction.
5. **Seat Allotment rules:** The seat allotment will be done purely on the basis of the no of applications received and the performance in Interview rounds.

Appendix A: Glossary

- AS : Administrative staff
- validation of inputs refer to the checking of fitness, accuracy, and consistency for any of various kinds of user input into an application or automated system