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Software Requirement Specifications

University Admission System

Prepared by

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Version 1.0

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Contents

Revision History

Name	Date	Change	Version
Baseline	08-July-2013		1.0

Introduction

Student admissions are a vital part of any university's running because students are what keep a University alive. The student admission is one of the most important activities within a university as one cannot survive without students. A poor admissions system can mean fewer students being admitted into a university because of mistakes or an overly slow response time. The process begins with a potential student completing an application form through the Universities and Colleges Admissions Service, the first step for students is to apply directly to the university through a custom online form. The next step is for the Admissions service center has to review the application and ensure that all of the required information has been provided, from the form itself to the supplementary documentation. If any of the required information is missing, it is the secretary for the department to which the application concerns that contacts the potential student and arranges for the delivery of the outstanding data. The application in its entirety is then reviewed along with the additional documentation, comparing the academic credentials to a list of university rankings and previous, similar applications.

Purpose

The purpose of this SRS document is to specify software requirements of the Online Admission for the university. It is intended to be a complete specification of what functionality the admission provides. The main purpose of the system is to automate the task carried out by different peoples in the organization to perform the student admission.

Intended Audience and Reading Suggestions

The document is intended for, developers, project managers, marketing staff, users, testers, and documentation writers for the University Admission System software. The rest of this SRS contains and how it is organized. Suggest a sequence for reading the document, beginning with the overview sections and proceeding through the sections that are most pertinent to each reader type.

Project Scope

This project's aim is to automate the system, pre-checking the inclusion of all required material and automatically ranking each student's application based on a number of criteria. These criteria include the ranking of their university and their grade at said university. The data used by the system is stored in a database that will be the centre of all information held about students and the base for the remainder of the process after the initial application has been made. This enables things to be simplified and considerably quickened, making the jobs of the people involved easier. It supports the current process but centralizes it and makes it possible for decisions to be made earlier and easier way.

Overall Description

Product Perspective

1) The web pages (XHTML/JSP) are present to provide the user interface on customer client side. Communication between customer and server is provided through HTTP/HTTPS protocols.

2) The Client Software is to provide the user interface on system user client side and for this TCP/IP protocols are used.
3) On the server side web server is EJB and database server is for storing the information.

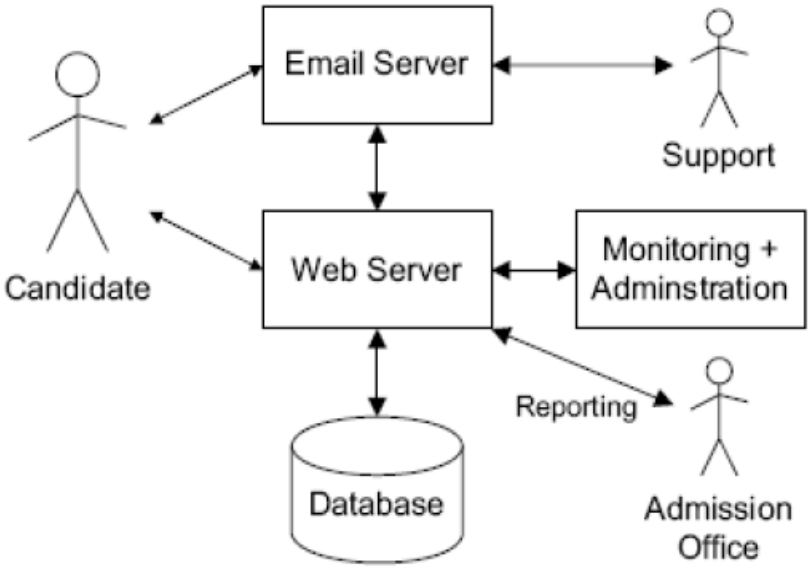


Figure 1: Model of the System

Product Features

Some of the features are identified for the software. They are listed below:

1) View Course Information: The student must able log as student and see all details about course without any constraints.
2) Apply for Course: The student can able download the application form or register for the course online.
3) Verification of Marks: The system must allow the student verify marks online.
4) Advanced Enquiry support: Enable the students to ask and clear doubts.
5) Online Counseling: The administrator should be able to send the call letters for the short listed candidates. In case the student is not able to contact directly respective authorized person(s), then the system must facilitate online Counseling.
6) Report Generation: The system supports generation of reports based on different criteria.
7) Record maintenance: The system also must keep track the statistical reports of daily activities of the Student Registration Process.
8) Online Examination: Enable the student to write the exams online in effective way in comparison with paper based process.

User Classes and Characteristics

Some of the users identified for this system through use case analysis are listed below:

1) Students
2) Data entry operators
3) Tutors
4) Administrators
5) Admission Authorities

Design and Implementation Constraints

Some of the design and implementation constraints identified are listed below:

1) Student is not allowed to register for more than three courses.
2) Student not has any rights to edit any data in the system.
3) Online Payment facility may be restricted if the university not want this facility for some reasons.
4) This system does not support distributed database Facility.
5) System is limited to HTTP/HTTPS Protocols.

User Documentation

Online documentation facility is available for the students to assess them for the easy use. A specific document should be prepared for the maintenance of the system.

Assumptions and Dependencies

1) Courses are already created and information's available for use.
2) Roles and responsibilities are already established.
3) Administrator is already created.

Functional Requirements

The following sections will introduce the numerous requirements of the system from the point of view of different users and will introduce a number of decisions that have been made regarding implementation. These sections also attempt to somewhat describe the role of each user group in the system, discussing their individual roles through the functions they can perform.

Req 1: Student View Functionality

1.1 Registration and Login System

Description and Priority

Applicants will carry out their own registration, providing the system with a way to associate a user to their application(s). This will enable the system to display personalized information when the user logs in and certain information, such as name and address, to be added to each application automatically. Giving each student a specific ID will also allow a user to apply to a

number of courses, while giving the system a way to prevent unnecessary duplication of applications. Priority of the feature is High (9).

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

1.2 View Course Information

Description and Priority

The student must able log as student and see all details about course without any constraints. Priority of the feature is *High (9).*

Stimulus/Response Sequences

1) Student keys in Identification Code and password. Student presses Enter.
   Index page of University Admission System is displayed with links to course details.
2) Student keys in Identification Code and password with wrong code or wrong password
   System message: Enter Correct UserCode/Password
3) Student presses Enter without giving input of User code and Password.
   System message: Enter Correct UserCode/Password

1.3 Apply for course

Description and Priority

The application process will be as straightforward as possible, using an intuitive form layout, with the necessary information being completed in stages. When regarding supplementary documentation, such as degree transcripts, these could be uploaded through the form in digital format, upon which it will be saved to the database and associated with the application, being accessible by both the admissions office staff and tutors. The student is able to download the application form or register for the course online. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

1.4 Verification of Marks

Description and Priority

The system must allow the student verify marks online. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

1.5 Advanced Enquiry support

Description and Priority

Enable the students to ask and clear doubts. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

1.6 Online Counseling

Description and Priority

The administrator should be able to send the call letters for the short listed candidates. In case the student is not able to contact directly respective authorized person(s), then the system must facilitate online Counseling. Priority of the feature is *Medium (7).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

1.7 Online Examination

Description and Priority

Enable the student to write the exams online in effective way in comparison with paper based process. Priority of the feature is *Medium (7).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

1.8 Update Details

Description and Priority

Applicants, admissions staff and tutors will all have the ability to update their personal details at any time. Applicants, however, will also be able to update their application details. After the user has confirmed the update, an e-mail is dispatched with the original and new details as confirmation. The only time an application will be locked for editing will be when it has been submitted to a tutor for review, after which point the application will no longer be accessible by the user. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

Req 2: Admissions View Functionality

2.1 Create New Application

Description and Priority

Registering is not something admissions office staff or tutors will be required to complete. These accounts will be created by the admissions office to prevent unauthorized users obtaining global access, with the login information being given to the appropriate user. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

2.2 Create Application

Description and Priority

For the sake of keeping the system centralized and accessible, should an application be received by post, the admissions office staff would enter the details into a specialized application form. This form is very much like the student view application form, however none of the information is automatically filled in and an account is automatically created for the user. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

2.3 View Submitted Applications

Description and Priority

Viewing all of the recently submitted applications is something the admissions office will do on a regular basis. A list of all the submitted applications, oldest to newest to prevent some applications remaining unread, will be viewable, each of which expandable to view the entire details. This list will be a set size, for example the last two days, but this value will be variable to enable more or fewer applications to be displayed.

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

2.4 Generate Emails

Description and Priority

For most users, who apply through the website, communication can be handled most effectively by e-mails. These will be less formal than the documents created by the system, but nonetheless will convey the same information. The admissions office staff will select the type of communication required, based on templates, and include any additional required information and the system will automatically send the e-mail to the correct user. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

2.5 Generate Documents

Description and Priority

For those users who apply by post, communication cannot be carried out through emails and instead formal documents must be created including all of the required information to be posted back to the applicant. This function of the system will generate a number of such documents ranging from acceptance letters to letters regarding missing information. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

2.6 View Logs

Description and Priority

Whenever an action has been completed, a time stamped log should be created by the system, detailing the action completed and the user who performed it for reference purposes. These logs should be viewable by the admissions office staff and by default should display the logs for the past two hours. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

2.7 Edit/Add Colleges/Institutes

Description and Priority

From time to time, a university's rank may change in the tables used by the admissions office. Since this table will be held by the system for automatic ranking of applications, it would be wise to include the ability to edit this information. A member of the admissions office staff will be able to view the list of universities included in the university ranking and edit its details, including name, rank and location. Priority of the feature is *Low (0).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

Req 3: Admission View Functionality

3.1 View Approved Application

Description and Priority

Much like the view submitted applications page for admissions office staff, view approved applications will list the applications, oldest to newest, that were deemed of a suitable quality to forward to an admissions tutor. The main difference with the approved applications is that each is only sent to one tutor, thus there is no need for a locking mechanism. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

3.2 Compare Application

Description and Priority

In some cases, decisions about an application will be simple, given that the application might be exceptionally good or exceptionally bad. If, however, an application is similar to other, previous applications, the tutor may have a more difficult decision to make and inconsistencies may be introduced. Using the automatic ranking of applications a tutor will be able to see a list of applications with a similar ranking. This list will have a default length of 5, for example, but this will be extendible if more comparisons are needed, and the list will include applications of the same rank as well as slightly higher and lower ranks. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

Req4: System View Functionality

4.1 Validation

Description and Priority

On the completion of each form in the system, the system will use a set of validation functions to ensure that information is of the right type in each field. Priority of the feature is *High (9).*

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

4.2 Make Recommendations

Description and Priority

The system should be able to make recommendations to the tutor which will be decided once an application has been submitted by the admissions office. The system could make its recommendation based on the ranking of the application, where any rank above a certain threshold would be accepted and any below would be rejected.

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

4.3 Statistics

Description and Priority

If the admissions office so wishes, they should be able to view statistics gathered by the system regarding applications. These statistics should be displayed on a page with individually expandable sections, such as extending the number of applications received from the past year to the past two years.

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

4.4 Report Generation

Description and Priority

The system supports generation of reports based on different criteria.

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

4.5 Record maintenance

Description and Priority

The system also must keep track the statistical reports of daily activities of the Student Registration Process.

Stimulus/Response Sequences

<Enter sequence of user input and system responses>

External Interface Requirements

User Interfaces

The user interface for this system will have to be simple and clear. Most importantly, the ages must be easy to read, easy to understand and accessible. The color scheme should be appropriate to provide familiarity with the university and there should be no contrast issues.

Hardware Interfaces

The hardware interfaces are as follows:

Client Side			
	Processor	**RAM**	**Disk Space**
Internet Explorer 6.0	Pentium II at 500 MHz	64 MB	1 GB
Server Side			
Web sphere application server V5.0	Pentium III at 1 GHz	512 MB	2 GB
DB2 V8.1	Pentium III at 1 GHz	512 MB	1GB (Excluding data size)

Software Interfaces

1) Client on Internet: Web Browser, Operating System (any)
2) Client on Intranet: Client Software, Web Browser, Operating System (any)
3) Web Server: WAS, Operating System (any)
4) Data Base Server: DB2, Operating System (any)
5) Development End: Eclipse (J2EE, Java, Servlets, JSP), DB2, OS (Windows), Web server.

Communications Interfaces

1) Client on Internet will be using HTTP/HTTPS Protocol.
2) Client on intranet will be using TCP/IP protocol.

Other Nonfunctional Requirements

Performance Requirements

1) Hardware memory: The growth of university is unpredictable; to resolve the future problems occurs while enhancing the system is controlled by larger memory as possible. So the memory constraint in the server side is extended up to 1TB.
2) Site Adaptation requirements: No site adaptation is necessary in this project as the University admission system is portable. The entire system is transported to wherever it is needed. No external dependencies are in place and operation of the system will never change due to location.
3) The database shall be able to accommodate a minimum of 10,000 records of students.
4) The software shall support use of multiple users at a time.

Security Requirements

Some of the factors that are identified to protect the software from accidental or malicious access, use, modification, destruction, or disclosure are described below. Specific requirements in this area could include the need to:

1) Utilize certain cryptographic techniques
2) Keep specific log or history data sets
3) Assign certain functions to different modules
4) Restrict communications between some areas of the program
5) Check data integrity for critical variables
6) Later version of the software will incorporate encryption techniques in the user/license authentication process.
7) The software will include an error tracking log that will help the user understand what error occurred when the application crashed along with suggestions on how to prevent the error from occurring again.
8) Communication needs to be restricted when the application is validating the user or license. (i.e., using https).

Other Requirements

1) Portability Requirements
   Some of the attributes of software that relate to the ease of porting the software to other host machines and/or operating systems. Java is used to develop the product. So it is easiest to port the software in any environment.
2) Maintainability
   The user will be able to reset all options and all stored user variables to default settings.
3) Reliability
   Some of the attributes identified for the reliability is listed below:
   a) All data storage for user variables will be committed to the database at the time of entry.

b) Data corruption is prevented by applying the possible backup procedures and techniques.

4) Usability requirements

Some of the usability requirements identified for this system are listed below:

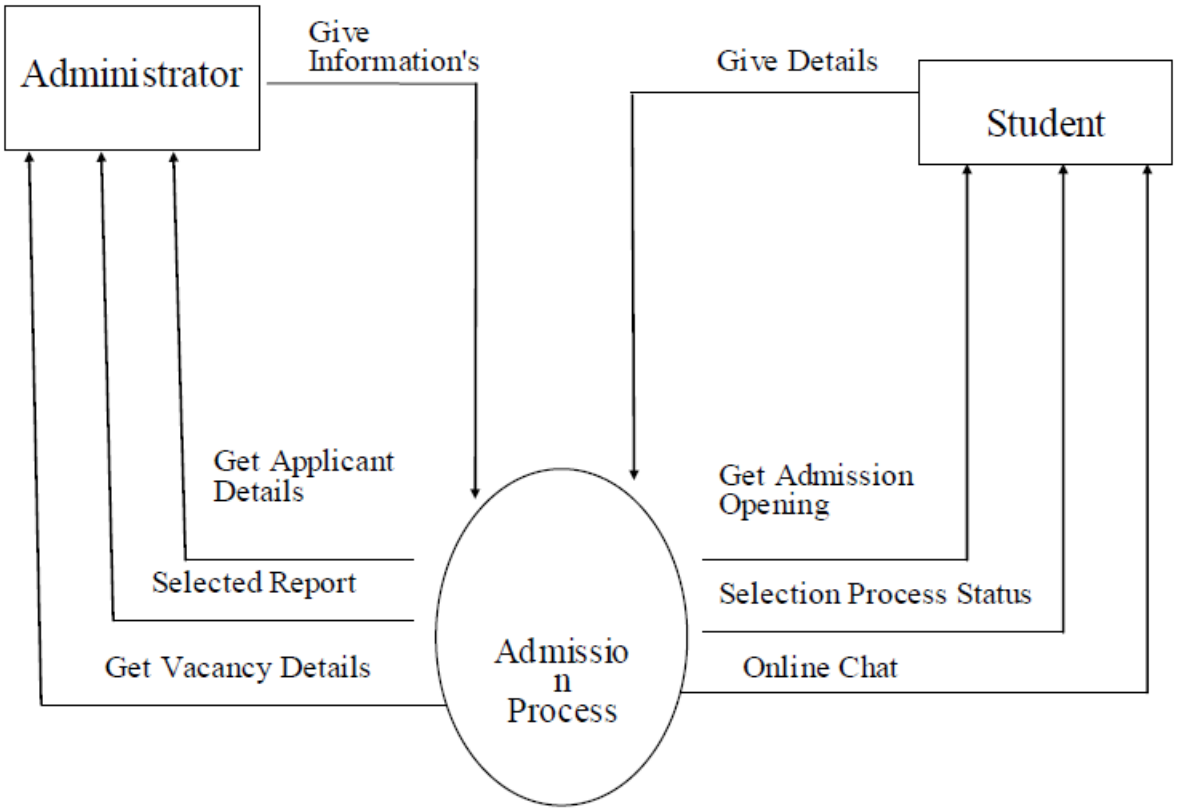
a) A logical interface is essential to an easy to use system, speeding up common tasks.
b) Error prevention is integral to the system and is provided in a number of formats from sanity checks to limiting free-text input.

5) Availability

All cached data will be rebuilt during every startup. There is no recovery of user data if it is lost. Default values of system data will be assigned when necessary.

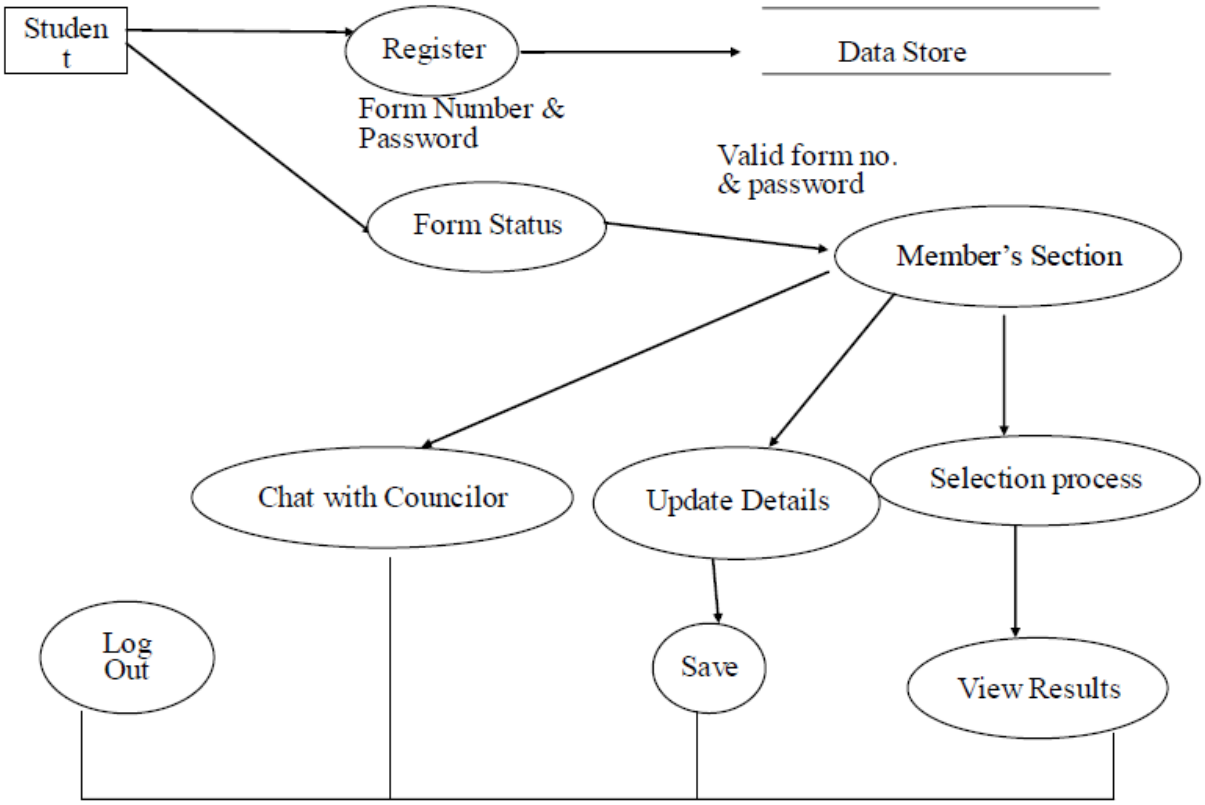
Appendix I: Analysis Models

Data Flow Diagram 1:



Data Flow Diagram level 0

Data Flow Diagram 2:



Overall Use Case Diagram: