SSN College of Engineering

Permission and Request Online System

Version 1.0

PROS

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Software Requirements Specification

1. Introduction

The process of requesting and receiving permission from Professors/Hostel wardens is currently performed manually where the student needs to personally find the authority in-charge and request for permission. For instance, during long weekends, hundreds of hostellers need to personally seek out the Hostel warden to request for hostel leave form. Due to a large number of students requesting permission in person, the process is very tedious and inefficient. Similarly, in order to get OD permission, students need to request Professors by visiting the staff room. In case the Professor is taking class or not in the staff room, or in case there are many students participating in an event requiring OD, the process yet again becomes tedious for both the teachers and the students. Moreover, the Professors/Hostel wardens need to verify the students' reason for requesting permission to identify legitimate requests and give permission to only those students with legitimate reasons. This takes time and further, if the number of requests is more, becomes harder to track which students received permission.

We have decided to investigate the use of a Permission and Request Online System. This system would be used by students, professors and hostel wardens of SSN College of Engineering to check requests raised by students with any support documents, and decide to accept or reject the request. The purpose of this document is to analyze and elaborate on the high-level needs and features of the Permission and Request Online System**.** The details of what all are the needs of the Permission and Request Online System and if it fulfills these needs are detailed in the use-case and supplementary specifications.

1.1 Purpose

SSN College of Engineering comprises over 4000 students and several hundred faculty, staff and admin. SSN offers students an option to be a day scholar or a hosteller. With many students opting to be hostellers, the process of getting Leave-form from hostel wardens becomes tedious, specifically during festivals, long weekends and during exam holidays.

Likewise, during events or competitions, faculty members need to give permission to several students for OD and this process is tedious and time consuming for faculty and students. In case of emergency, if the faculty is unavailable, it is very difficult for the student to get permission to leave the college.

We believe that the extensive time and effort that goes into requesting for hostel leave-forms, OD permission among others, can be simplified and made more convenient with the help of a well-designed and effective web application that provides an interface to students for requesting permission from hostel wardens and professors. Similarly, the hostel wardens and professors can choose to accept/reject the students' requests on a case by case basis without any paperwork, just by a single click.

1.2 Scope

The Software Requirements Specification captures all the requirements in a single document. The Permission and Request Online System that is to be developed is supposed to have the following features.

- The system provides the students with the ability to raise requests and professors and hostel wardens to view and choose to accept or decline the requests.
- The system provides logon facility to the users- students, professors and hostel wardens.
- The system provides the users with the option to check their account and/or change their options like

password of the account whenever needed all through the day.

- The system allows the users to raise requests 24 hours a day and all through the semester.
- The system lets the professors and hostel wardens to check which students have raised requests and view supporting documents and then decide to accept or decline requests.
- The system updates the students' request history as and when their requests get accepted or declined.
- The system also has an option to add new students to the system as and when they get admitted into the college.

The features that are described in this document are used in the future phases of the software development cycle. The features described here meet the needs of all the users. The success criteria for the system is based on the level up to which the features described in this document are implemented in the system.

1.3 Definitions, Acronyms and Abbreviations

- PROS - Permission and Request Online System
- SSN - Sri Sivasubramaniya Nadar

1.4 Overview

The SRS will provide a detailed description of the Permission and Request System. This document will provide the outline of the requirements, overview of the characteristics and constraints of the system.

1.5.1 Section 2: This section of the SRS will provide the general factors that affect the product and its requirements. It provides the background for those requirements. The items such as product perspective, product function, user characteristics, constraints, assumptions and dependencies and requirements subsets are described in this section.

1.5.2 Section 3: This section of SRS contains all the software requirements mentioned in section 2 in detail sufficient enough to enable designers to design the system to satisfy the requirements and testers to test if the system satisfies those requirements.

2. Overall Description

Product Perspective

The Permission and Request Online System (PROS) is a web application that will be used by students, faculty members, hostel warden and other staff members of SSN College of Engineering to increase the efficiency of the current approach used in acquiring permissions and requests. The Permission and Request Online System benefits students and staff greatly by decreasing the time and effort needed to request and grant permission. The PROS provide multiple options for the students to choose their requests ranging from leave forms for hostellers, On Duty permissions, Early leave permissions for day scholars and other general requests. The professors/warden/staffs can choose to accept or reject the request with just a single click.

The application to be developed has interactions with Students, faculty members and hostel wardens.
The product has to interact with the Internet.

Product Functions

The Permission and Request Online System (PROS) provides various permissions and requests. The Product functions are more or less the same as described in the product perspective. The functions of the system include the system providing different type of services based on the type of users [Student/Faculty].

- Provisions for the students to ask for permission if all the other required rules hold good.
- The member is given a provision to check his account information and change the account

information any time in the given valid period.

- The members are provided with the various permissions as a list and can choose any one among them
- The faculty is prompted with the request along with details of the student's permission history.
- The faculty is provided with interfaces to accept/reject and also chat with the user before giving permission.
- The students when receives the permission, a QR code is generated, which can be used by the students
- The system uses the University information security requirements to provide the login facility to the users.

- **User characteristics**

The users of the system are students, faculties of the university and the administrators who maintain the system. The students and the faculties are assumed to have basic knowledge of the computers and

Internet browsing. The administrators of the system should have more knowledge of the internals of the system and are able to rectify the small problems that may arise due to disk crashes, power failures and other catastrophes to maintain the system. The proper user interface, users manual, online help and the guide to install and maintain the system must be sufficient to educate the users on how to use the system without any problems.

Constraints

- The information of all the users must be stored in a database that is accessible by the system.
- The university information security system must be compatible with Internet applications.
- The Permission and Request system runs all 24 hours a day.
- The users will be able access the Permission and Request System from any computer that has Internet browsing capabilities and an Internet connection.
- The users must have their correct usernames and passwords to enter into the System

Assumptions and dependencies

- The users have sufficient knowledge of computers.
- The College/University computer should have Internet connection and Internet server capabilities.
- The users know the English language, as the user interface will be provided in English
- The product can access the university student database

3. Specific Requirements

This section describes in detail all the functional requirements.

3.1 Functionality

3.1.1 Logon Capabilities

The system shall provide the students and the faculties with logon capabilities.

3.1.2 Mobile Devices

The Permission and Requests System is also supported on mobile devices such as cell phones.

3.2 Usability

- The system shall allow the users to access the system from the Internet using HTML or its derivative technologies. The system uses a web browser as an interface.
- Since all users are familiar with the general usage of browsers, no specific training is required.
- The system is user friendly and self-explanatory.
- The system is secured to avoid forging

3.3 Reliability

The system has to be very reliable due to the importance of data and the damages incorrect or incomplete data can do.

3.3.1 *Availability*

The system is available 100% for the user and is used 24 hrs a day and 365 days a year. The system shall be operational 24 hours a day and 7 days a week.

3.3.2 *Mean Time Between Failures (MTBF)*

The system will be developed in such a way that it ***may*** fail once in three months.

3.3.3 *Mean Time to Repair (MTTR)*

Even if the system fails, the system will be recovered back up within an hour or less.

3.3.4 *Accuracy*

The accuracy of the system is limited by the accuracy of the speed at which the students and the faculties use the system.

3.3.5 *Maximum Bugs or Defect Rate*

Not specified.

3.3.6 *Access Reliability*

The system shall provide 100% access reliability.

3.4 Performance

3.4.1 *Response Time*

The Splash Page or Information page should be able to be downloaded within a minute using a 56K modem. The information is refreshed every two minutes. The access time for a mobile device should be less than a minute. The system shall respond to the member in not less than two seconds from the time of the request submission. The system shall be allowed to take more time when doing large processing jobs.

3.4.2 *Administrator/Faculty Response*

The system shall take as less time as possible to provide service to the administrator or the faculty.

3.4.3 *Throughput*

The number of transactions is directly dependent on the number of users, the users may be the Administrator, Faculties and also the students of the college for asking permissions, making requests, and requesting transcripts.

3.4.4 *Capacity*

The system is capable of handling 100 users at a time.

3.5 Supportability

The system designers shall take into consideration the following supportability and technical limitations.

3.5.1 *Internet Protocols*

The system shall comply with the TCP/IP protocol standards and shall be designed accordingly.

3.5.2 *Information Security Requirement*

The system shall support the UHCL information security requirements and use the same standard as the UHCL information security requirements.

3.5.3 *Billing System Data Compatibility*

The member balance amount that will be calculated and sent to the billing system shall be compatible with the data types and design constraints of the billing system.

3.5.4 *Maintenance*

The maintenance of the system shall be done as per the maintenance contract.

3.5.5 *Standards*

The coding standards and naming conventions will be as per the American standards.

3.6 Design Constraints

3.6.1 *Software Language Used*

The languages that shall be used for coding the Permission and Request System are Active Server Pages (ASP), Java Servlets, Python, Java Server Pages (JSP), HTML and JavaScript. For working on the coding phase of the Online Library System, the Internet Information Services (IIS) Server needs to be installed.

3.6.2 *Development Tools*

Will make use of the available Java Development Tool kits for working with Java Beans and Java Server Pages. Also will make use of the online references available for developing programs in ASP, HTML and the one scripting languages, JavaScript.

3.6.3 *Class Libraries*

Will make use of the existing Java libraries available for JSP and Servlets. Also we need to develop some new libraries for the web-based application. Also will develop new programs using ASP and scripting languages.

3.7 On-line User Documentation and Help System Requirements

Online help is provided for each of the features available with the Permissions and Requests System. All the applications provide an on-line help system to assist the user. The nature of these systems is unique to application development as they combine aspects of programming (hyperlinks, etc) with aspects of technical writing (organization, presentation). Online help is provided for each and every feature provided by the system.

The User Manual describes the use of the system to Faculties and Students. It describes the use of the system on mobile systems. The user manual should be available as online help.

A ReadMe file is typically included as a standard component. The Read Me includes a "What's New With This Release" section, and a discussion of compatibility issues with earlier releases. Most users also appreciate documentation defining any known bugs and workarounds in the ReadMe file.

3.8 Purchased Components

The System Administrator will need to purchase the license for IIS Server. Mostly it is available with Windows Environment. So the system need not purchase any licensing products.

3.9 Interfaces

3.9.1 User Interfaces

Will make use of the existing Web Browsers such as Microsoft Internet Explorer, Mozilla Firefox or Google Chrome.

Sample Interface:

For sample interface, click on the below links and explore different tabs present

https://abhisheknarayan190.wixsite.com/pros **->Student Interface**

https://abhisheknarayan190.wixsite.com/my-site-2 **->Faculty Interface**

3.9.2 Hardware Interfaces

The existing Local Area Network (LAN) will be used for collecting data from the users and also for updating the database of the system.

3.9.3 Software Interfaces

A Scanner will be used with the server to prevent duplicacy of the system.

3.9.4 Communications Interfaces

The Permission and Requests System will be connected to the World Wide Web.

3.10 Licensing Requirements

The usage is restricted to only Sri Siva Subramaniya Nadar College of Engineering and who is purchasing the Permission and Request System from the college and signs the maintenance contract.

3.11 Legal, Copyright, and Other Notices

Permission and Requests System is a trademark of Abhishek Narayanan, Adavith N Narayan, A Anirudh and Digant Mehul Gandhi and cannot be used without its consent.

3.12 Applicable Standards

The ISO/IEC 6592 guidelines for the documentation of computer based application systems will be followed.

4. Supporting Information

The use-case storyboards or the user-interface prototypes are not available. The appendices are not to be considered as part of the requirements.