SOFTWARE REQUIREMENTS SPECIFICATION

for

Online Campus Security Management System IITI(Secures)

Version 1.0

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1 Introduction

1.1 Purpose

The Online Campus Security Management System (Secures) provides an interface for both manager and workers to track their tasks on daily basis. IIT Indore has more than thousand security persons, who are instructed to give duties at different places within the campus. Thus, the objective is to build a secure system through which the entire security system within the campus can be managed in an efficient manner.
This system will assist the security manager to control security efficiently as manual calculation/operation is a heavy task for the security manager.

1.2 Intended Audience and Reading Suggestions

Online Campus Security Management System SRS is intended for developers, security administration and security persons. This SRS contains the overall descriptions of the management system and all its features.

1.3 Project Scope

- Online Campus Security Management System provides an interface for both manager and workers to track their duties on daily basis through role-based access.

- The manager interface will also allow for creating a weekly routine for workers and to accept/decline their leave requests. At the end of each month, the system should calculate each member's salary after considering all the leaves taken and extra duties delivered.

- The system will provide workers their leave history, allow them to request for leaves and show the leave request status. Each person can view the routine, that is, at which place each person is allocated the duty after logging in and also their contact details are visible to all of them so that they can do faster communication in case of any mishaps.

- Maintain a record of mishaps/incidents that occurred previously in any of the monitored places and display them.

- The system will provide search features based on 'Name of security member' as well as the 'Date of the Month'.

2 Overall Description

2.1 Product Perspective

The Online Campus Security Management System will be a new self-contained product. Communication will be done via the website interface to the server via Node.js using Express and EJS files, that will be connected with the mongoDB database that stores the all the data/information of our system .
Back-End - Node.js, Express, EJS
Front-End - HTML, CSS, Bootstrap, JavaScript.
Database - MongoDB, Mongoose.

2.2 Product Interfaces

- The log-in interface
  - The system will allow security department to create accounts of the new users.
  - The system will allow existing users to log-in to their account
  - The system will provide general help information.

- The manager interface
  - Create routine for upcoming 7 days for all persons considering leave requests.
  - Approve/decline leave request
  - Monitoring

- The worker interface
  - View duty date, place, start time, end time (upcoming 7 days schedule can be viewed)
  - Request manager to take leave or to do over duty
  - Request approved/declined
  - Number of leaves taken/ number of allowed leaves remaining.
  - Can check the salary

2.3 User Classes and Characteristics

The intended users for the Online Campus Security Management System will be managers and their workers/security members. The system will require basic understanding
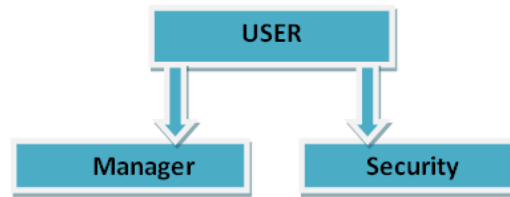
Figure 2.1: Type of users

of how a computer works, i.e. how to turn it on. It is expected that the user will need very little technical expertise.

There are two types of users-

- Security Department/Manager

- Security Person

2.4 Operating Environment

The website will be operate in any Operating Environment - Mac, Windows, Linux etc.

2.5 Product Functions

Our system stores the data for each and every security member as well as the manager of the system. The weekly routine, track record of leaves taken or extra duties delivered, monthly salary calculation and other basic features. Before using the main function of the software process, users have to be registered.

Each 'employee'/ security member have - name, e_id, email_id, phone_no, password, salary, extra_salary, status.
The 'manager' has a name, email_id, password, phone_no.
The entity 'place' has attributes name, p_id.
The next entity 'leave' has an e_id, date_of_start, date_of_end, description, status, no_-of_days.
We have another entity 'routine' that has attributes e_id, p_id,slot, duty_start, duty_end.
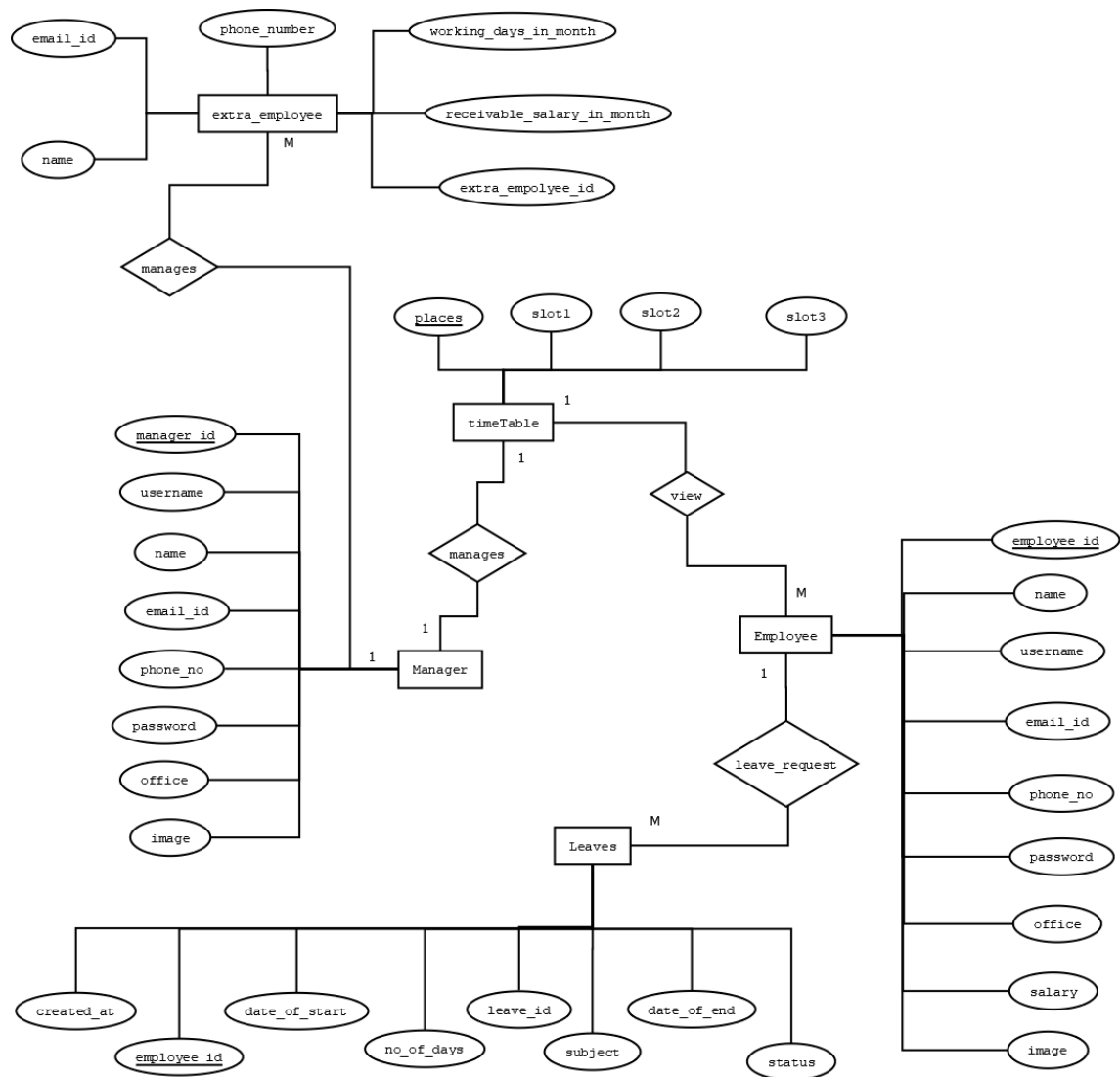
Figure 2.2: ER Diagram

2.6 Design and Implementation Constraints

The system must be programmed in an object-oriented language. The system must use an internet connection or the user will not be able to communicate with the database. The Online Campus Security Management System must be portable so that multiple computers may be used to look at the information. At this time, testing has not been done on versions earlier than Windows 8.

2.7 Assumptions and Dependencies

One assumption that could affect the design is that the user runs a Mac X or Windows 8 operating system; a Windows operating system less than version 8 may cause unknown effects to the system functionality. Another assumption that could affect the design is that the user will have adequate internet connection; this could affect the speed with which the interface communicates with the database. Lastly, this system will be written for users with a basic understanding of how computers work. Users with less computer experience may have a harder time.

3 External Interface Requirements

3.1 User Interfaces

The Task Management System will have three main graphical user interfaces:

1. The log-in interface will allow new users to create account and existing users to log-in to their account.

2. The manager tasks interface will allow manager to create routine for upcoming 7 days for all persons considering leave requests and allow them to accept/reject the leave request.

3. The worker interface will allow workers to view duty date, place, start time, end time and request leaves.

3.2 Hardware Interfaces

Since the application must run over the internet, all the hardware shall require to connect internet will be hardware interface for the system. As for e.g. Modem, WAN – LAN, Ethernet Cross-Cable.

3.3 Software Interfaces

The system website interface will be working on a web browser communicating via a node.js server, which will allow access to the MongoDB database.

3.4 Communications Interfaces

The security system shall use the HTTP protocol for communication over the internet and for the intranet communication will be through TCP/IP protocol suite.

4 System Features

The product has been divided into three category:
• The log-in interface
• The manager interface
• The worker interface

4.1 The log in interface

4.1.1 Description and Priority

The log-on interface will allow new users to create account and existing users to log-in to their account.

4.1.2 Stimulus/Response Sequences

- Manager registration

- Manager log-in

- Manager log-out

- Worker registration

- Worker log-in

- Worker log-out

4.1.3 Functional Requirements

REQ 1.0 − > Start-up

REQ 1.1 − > The system will allow manger for Manager Registration.

REQ 1.1.1 − > The system will ask for name,id,password.

REQ 1.1.2 − > The system will show "Registration successful".

REQ 1.2 − > The system will allow for Manager log-in.

REQ 1.2.1 − > The system will ask for id and password.

REQ 1.2.2 − > The system will give access to manager interface to edit tasks if id and password are correct.

REQ 1.2.3 − > The system will allow manager to log-out.

REQ 1.3 − > The system will allow for Worker Registration.

REQ 1.3.1 − > The system will ask for name,id,password.

REQ 1.3.2 − > The system will show "Registration successful".

REQ 1.4 − > The system will allow for worker log-in.

REQ 1.4.1 − > The system will ask for id and password.

REQ 1.4.2 − > The system will give access to worker interface to check tasks if id and password are correct.

REQ 1.4.3 − > The system will allow worker to log-out.

4.2 The manager interface

4.2.1 Description and Priority

The manager tasks interface will allow manager to create routine for upcoming 7 days for all persons considering leave requests and allow them to accept/reject the leave request.

4.2.2 Stimulus/Response Sequences

- Create routine for upcoming 7 days for all persons considering leave requests.

- Approve/decline leave request.

- Monitoring

4.2.3 Functional Requirements

REQ 1.0 − > Manger logged-in through log-on interface

REQ 1.1 − > The system will allow manager to create routine for upcoming 7 days for all persons considering leave requests and allow them to accept/reject the leave request.

REQ 1.2 − > The system will allow manager to accept/reject worker's leave request.

REQ 1.3 − > The system will allow manager to check worker's work history.

REQ 1.4 − > The system will allow manager to check worker's leave history.

REQ 1.5 − > The system will allow manager to check worker's profile and details.

REQ 1.6 − > The system will allow manager to log-out through log-on interface.

4.3 The worker interface

4.3.1 Description and Priority

The worker interface will allow workers to view duty date, place, start time, end time and request leaves.

4.3.2 Stimulus/Response Sequences

- View duty date, place, start time, end time (upcoming 7 days schedule can be viewed)
- Request manager to take leave or to do over duty
- Request approved/declined
- Number of leaves taken/ number of allowed leaves remaining.

4.3.3 Functional Requirements

REQ 1.0 − > Manager logged-in through log-in interface.

REQ 1.1 − > The system will allow workers to check duty date, place, start time, end time (upcoming 7 days schedule can be viewed).

REQ 1.2 − > The system will allow workers to request leave or overduty.

REQ 1.3 − > The system will allow workers to check their leave/overduty request status.

REQ 1.4 − > The system will allow workers to check their salary at the end of month.

REQ 1.5 − > The system will allow workers to check their total leaves/remaining leaves at the end of month.

REQ 1.6 − > The system will allow worker to log-out through log-in interface.

5 Other Nonfunctional Requirements

5.1 Performance Requirements

The system shall perform basic operations in less than 2 seconds. While navigating the system, user interfaces should update quickly, system runs on a Windows and Mac X operating system, and shall communicate between the application and the Mongodb database. The Mongodb database needs to have the capacity to grow.

5.2 Safety Requirements

The level of security for this product is refined mostly to the privacy needs between users. Because the manager is responsible for generating timetable and approving leave requests, improper entry into the manager's profile may result in malicious activities leading to false payouts. Privacy between workers is also important to the client because siblings, peers, or other workers using the product may utilize the ability to enter another worker's profile with negative intent.

- User account names will be associated with a password which will be chosen by the user upon first use.

5.3 Security Requirements

- Worker password reset will be performed by the manager.

5.4 Software Quality Attributes

- Maintainability- The system code should be written to allow for future possible upgrades. Code will be documented, including version updates and authors. Code will be fully commented. Each method will include a description of its function and any additional information needed to help in future additions.

- Adaptability- The system should be able to get adapted reasonably as the user requirements alter.

- Scalability- The system should work efficiently even if the number of users increases. The database of the system can handle larger amounts of data as well.

- Portability – The system defined above can be executed on various types of operating systems without converting the program to other languages, and with little or no modifications. The system uses standard softwares and technologies, thus can be efficiently used cross-platform.

- Exception handling - If during signup or login the user leaves any of the required fields empty then the system will not allow the user to login and will show the message to fill all the fields first and then login. And also if the OTP entered by the user during email verification is incorrect then also the alert will be shown.

5.5 Business Rules

- The product should be available to everybody with guidelines. Business rules are a mechanism for capturing detailed business knowledge in a simple manner and are described in terms of the business model.

- The system must have at least a security person role and a security department role defined for accessing and interacting with the system. Additional roles may be defined for the system as long as the business rules for the administrator and user roles are satisfied.

6 Other Requirements

Because it is a long process program,"**Online Security Management System IIT Indore (Secures)** " requires maintenance. It will need to be refactored, and the requirements may need to be altered as the field evolves.

There are no other requirements for this system.

Appendix A: Glossary

No data for this section.