EGERTON UNIVERSITY

Software Requirements Specification

for

Online Staff Performance Appraisal system

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Version 1.0

Table of Contents

Revision History

Name	Date	Reason for Changes	Version
Online Staff Appraisal System			1.0

1. Introduction

1.1 Purpose

The following subsections of the Software Requirements Specifications (SRS) document provide an overview of the entire SRS. The purpose of this document is to show the software requirements of the Online Staff Appraisal System. The functionality and scope of this software are described in this SRS document.

1.2 Document Conventions

The entire document is in Calibri font. The headings are numbered 1,2,3... and so on and sub-headings are numbered x.1, x.2.... and so on. Both headings and sub-headings are in bold.

Main title: Font Calibri and size 14

Sub titles: Font Calibri and size 14

Content: Font Calibri and size 12

1.3 Intended Audience and Reading Suggestions

This SRS document is intended for developers, professors, students for reading. The rest of the document contains the functional and non-functional requirements of Online Staff Appraisal System

1.4 Project Scope

The Online Staff Appraisal System aims at helping the user to address issues from multi-disciplinary angles related to Online Staff Appraisal.

The major benefits of this system are -
1. It is a unique web application which helps to appraise employees without any paperwork.
2. It has a wide variety of Modules.

By just few clicks user can fill in His/her objectives, tasks and targets and can check his/her performance status, View Feedbacks, Reviews, Alerts / Reminders, Appraisal History Tracking, Cascading Goals, Competency Tracking, Custom Rating Scales, Custom Review Forms, Goal Setting / Tracking, Individual Development Plans, Peer Appraisals, Review Cycle Tracking, Review Form Templates, Self Service Portal, Self-Appraisals, Weighted Performance Measures

2. Overall Description

2.1 Product Perspective

Describes the general factors that affect the product and its requirements. This section does not state specific requirements. Instead it provides a background for those requirements, which are defined in section 3, and makes them easier to understand.

2.2 Product Features

It is aimed at replacing the tedious paper works that the companies or organizations currently use. The system will collect Simple reports and automated notifications keep everyone on the right track. These data and store it for fast and easy reference. The system will provide users with complete record of the attendance and leaves. It will also provide information about the leave balance(availability). The system is thus helpful to reduce the time and complexity of maintaining the records.

2.3 User Problem statement

Describes the features of the user community including their expected expertise with the software system and the application domain.
- Leave paper processes behind
- A better way to control the review process
- Give better feedback and guidance
- Employees can track their own performance

2.4 User Objectives

- Primary users of the system will be employees working in company /staff, manager, HOD, Admins. Very little technical expertise is required for reading the outputted data since it is in graphical/tabular form.
- Educational level of this application – Low
- Experience of this application – None
- Technical Expertise – Little

2.5 Operating Environment

Open Source, HTML, PHP, windows, Linux.

2.6 Design and Implementation Constraints

The design is expected to be of High performance and User-friendly,
- It will be a Security based System,
- It will Provide validation of Users,
- It will have a very fast response time.

Design Constraints

2.6.1 Standard Development Tools
The system shall be built using a standard web page development tool that conforms to either IBM's CUA standards or Microsoft's GUI standards.

2.6.2 Web Based Product
- There are no memory requirements
- The computers must be equipped with web browsers such as Internet explorer.
- The product must be stored in such a way that allows the client easy access to it.
- Response time for loading the product should take no longer than five minutes.
- A general knowledge of basic computer skills is required to use the product

2.7 User Documentation

As the product is an Online application, On-line help system becomes a critical component of the system which shall provide specific guidelines to a user for using this Online Appraisal system and within the system. To implement online user help, link and search fields shall be provided.

2.8 Assumptions and Dependencies

The Assumption made on this system is that all the information entered by the user will be correct. If any wrong information found, then system will notify an alert. The system is required to save generated reports.

2.9 User Constraints

- The information of all the users must be stored in a database that is accessible by this Online Staff Performance Appraisal and Review System.
- The Organization's information security system must be compatible with the Internet applications.
- This System is connected to the Organization's computer and is running all 24 hours a day.
- The users must have their correct usernames and passwords to enter into the System
- The users of the system are Employees, Supervisors/managers and the administrators who maintain the system.
- The users are assumed to have basic knowledge of the computers and Internet browsing.
- The administrators of the system to have more knowledge of the internals of the system and is 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, user's 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.

3. System Features

This subsection contains the requirements for the Online Staff Performance review and Appraisal system. These requirements are organized by the features discussed in the proposal document. The system will provide;

- Performance Reviews - Gather relevant and accurate feedback.
- Insightful Analytics - Get detailed reports how everybody is moving forward.
- Personal development focus - Choose what you want to develop and track feedback over time.
- Manager Reviews - Help managers understand their strengths and where to improve.
- Real-time Feedback - give feedback just in time

3.1 Functionality

Some major product functionalities of the system are as follows:

3.1.1   Maintain User profile.
- The system shall allow user to set his credential.
- The system shall authenticate user credentials to view the profile.
- The system shall allow user to update (Allowable) profile information.

3.1.2   Provide personalized profile
- The system shall display both the active and completed activity to the user profile.
- The system shall display the detailed information about the selected activity.
- The system shall allow user to register for newsletters and surveys in the profile.

3.1.3   Provide User Support.
- The system shall provide online help, FAQ's user support.
- The system shall display the user support contact numbers on the screen.
- The system shall allow user to enter the contact number for support personnel to call.

3.1.4   Email confirmation.
- The system shall maintain users email information as a required part of user profile.
- The system shall send an order confirmation to the user through email.

3.2 Usability

3.2.1   Graphical User Interface

- The system shall provide a uniform look and feel between all the web pages.
- The system shall provide use of icons and toolbars.

3.2.2   Accessibility

- The system shall provide handicap access.
- The system shall provide multi language support.

3.3 Reliability & Availability

3.3.1   Back-end Internal Computers

- The system shall provide storage of all databases on redundant computers with automatic switchover.
- The system shall provide for replication of databases to off-site storage locations.

3.4 Performance

- The product shall be based on web and has to be run from a web server.
- The product shall take initial load time depending on internet connection strength which also depends on the media from which the product is run.
- The performance shall depend upon hardware components of the client/user.

3.5 Security

3.5.1   Data Transfer

- The system shall use secure sockets in all transactions that include any confidential User information.
- The system shall automatically log out all users after a period of inactivity.
- The system shall confirm all actions and activities with the user's web browser.

- The system shall not leave any cookies on the user's computer containing the user's password.
- The system shall not leave any cookies on the user's computer containing any of the user's confidential information.

3.5.2   Data Storage

- The user's web browser shall never display a user's password. It shall always be echoed with special characters representing typed characters.
- The system's back-end servers shall never display a user's password. The user's password may be reset but never shown.
- The system's back-end servers shall only be accessible to authenticated administrators.
- The system's back-end databases shall be encrypted.

3.6 Logon Capabilities

The system shall provide the users with logon capabilities.

4. External Interface Requirements.

There are many types of interfaces supported by this system namely; User Interface, Software Interface and Hardware Interface.

4.1 User Interfaces

- The user interface for this application shall be compatible to any browser such as Internet Explorer, Mozilla or Netscape Navigator by which user can access to the system. The user interface shall be implemented using any tool or software package like Java Applet, PHP, HTML, etc.
- All pages of the system are following a consistent theme and clear structure. The occurrence of errors should be minimized through the use of checkboxes, radio buttons and scroll down in order to reduce the amount of text input from user.
- JavaScript implement in HTML in order to provide a Data Check before submission.
- HTML Tables to display information to give a clear structure that easy to understand by user.
- Error message will be located beside the error input which clearly highlight and tell user how to solve it. If system error, it will provide the contact methods.
- The page should display the project process in different colour to clearly reflect the various states that student done.
- Each level of user will have its own interface and privilege to manage and modify the project information such as supervisor able to monitor/manage his employee progress and make comment on it, user can view the progress, submit data required.

Online Staff Appraisal User Interface Screens

Screen Name	Description
Login	Log into the system.
Employee	Display employees Information / Profile
Back End	Provides back end access to administrators
Leave records	Display leave history.
Approve	Display an appraisal availability and application form. Add or update records.
Staff	Add or update staff records Create, modify, and delete staff member.
Reports	Select, view, save, and delete reports

4.2 Hardware Interfaces

Server Side

The web application will be hosted on one of the departments/Organization's servers and connecting to one the Database server. The web server will be listening on the web standard port, port 80.

Client Side

The system is a web based application; clients are requiring using a modern web browser such as Mozilla, Internet Explorer & Cookies. The computer must have an Internet connection in order to be able to access the system.

The system shall run on:

- Operating system - Any Windows OS.
- Scripts which supports CGI, HTML & JavaScript.
- Web Browser: Google Chrome, Mozilla Firefox etc.

4.3 Software Interfaces

The system shall interface with an Oracle or Mysql database. To implement the project, I have chosen PHP/HTML language for its more interactive and easy to understand and support.

Server Side

Apache Webserver will accept all requests from the client and forward specific requests to server hosting this system. A development database will be hosted locally (using MySQL); the production database is hosted centrally (using Oracle).

Client Side

An OS is capable of running a modern web browser which supports HTML version 3.2 or higher.

4.4 Communications Interfaces

- The HTTP protocol will be used to facilitate communications between the client and server.
- The Port number used will be 80.
- This System supports Google chrome and Mozilla Firefox web browsers.
- This System involves FAQ forms for the requesting information, queries and problems etc.

5. Other Nonfunctional Requirements

5.1 Performance Requirements

Performance requirements define acceptable response times for system functionality.
- The load time for user interface screens shall take no longer than two seconds.
- The log in information shall be verified within five seconds.
- Queries shall return results within five seconds
- The system shall consume very little of primary memory
- The number of the online user of the HRMS can be estimated as 50 at most.
- There is no restriction on the number of the users to be added to the database.

5.2 Safety Requirements

No safety requirements have been identified.

5.3 Security Requirements

User Service Representatives and Managers will be able to log in to the Online Staff Appraisal System System. User Service Representatives will have access to the Online Staff Appraisal System and scheduling subsystems. Managers will have access to the Management subsystem as well as the Online Staff Appraisal and scheduling subsystems. Access to the various subsystems will be protected by a user log in screen that requires a valid UserId.

5.4 Software Quality Attributes

5.4.1 Standards Compliance
There shall be consistency in variable names within the system. The graphical user interface shall have a consistent look and feel.

5.5.2 Reliability
Specify the factors required to establish the required reliability of the software system at time of delivery.

5.6.3 Availability
The system shall be available 24*7.

5.7.4 Maintainability
The Online Staff Appraisal System is being developed in Java. Java is an object-oriented programming language and shall be easy to maintain.

6. Preliminary Object-Oriented Domain Analysis

This section presents a list of the fundamental objects that must be modeled within the system to satisfy its requirements. The purpose is to provide an alternative „structural" view on the requirements stated above and how they might be satisfied in the system.

6.1 Inheritance relationships

This sub-section contains a set of graphs that illustrate the primary inheritance.

6.2 User Classes and Characteristics

- User of this system includes Staff, Administrators and Managers.
- staff which acts as administrator and controlling overall; system.
- Users should be IT literate and know how to use a Computer
- The HR personnel should have data entry and typing skills
- Manager should have the knowledge of Internet and Browsing.

User interfaces will be available in English language.

DBA:

The DBA is expected to have a field appropriate college degree and experience of at least 2 years as a DBA and an additional 5 years in the IT field. He/She has the privilege to update information in the database and technical expertise in database management.

Data Entry Level Personnel:

They must have at least a high school diploma or equivalent certification. They do not have privileges to directly access or modify the database without the permission of the DBA. The Data Entry Level Personnel do not directly interact with this system.

6.2.1 Abstract or Concrete

CryptoUtil class- this class contains hashing algorithms for used to encode user passwords.

6.2.2 List of Super classes

- FullUser class– this is a Model Layer class used to hold user values
- LoginModel class – this is a model Layer class used to hold user values
- NewUserModel class- this is a class in the modelLayer package that is used to hold registration details for a new user.

6.2.3 List of subclasses

- StaffDatabaseManager class – this class contains methods used to operate on the Staff Database table.
- LoginManager class – this is a servlet that is used to manage the login processes of the system
- RegistrationManager class – this is a servlet used to manage the registration processes of the system.

6.2.4 Purpose

- CryptoUtil class- this class contains hashing algorithms for used to encode user passwords.
- FullUser class– this is a Model Layer class used to hold user values
- LoginModel class – this is a model Layer class used to hold user values
- NewUserModel class- this is a class in the model layer package that is used to hold registration details for a new user.
- StaffDatabaseManager class – this class contains methods used to operate on the StaffDatabase table.
- LoginManager class – this is a servlet that is used to manage the login processes of the system
- RegistrationManager class – this is a servlet used to manage the registration processes of the system.

7. Preliminary Budget and Schedule

This section provides an initial budget, itemized by cost factor and schedule including major tasks to be accomplished, their interdependencies and their tentative start/stop dates.

7.1. Schedule.

This project is scheduled to be completed by April 2017 as the requirement of this course unit, Comp 493. There shall be constant communication between the project supervisor (Lecturer), the potential clients and the project manager (student). The communication will involve the evaluation of the solution and giving updates to the supervisor about the completion of assigned tasks and/or agreed areas to work on.

	🛈	Task Mode ▾	Task Name	Duration	Start	Finish
0			◢ Software Development	147 days	Mon 10/3/16	Tue 4/25/17
1	✓	📌	▷ Scope	3 days	Mon 10/3/16	Wed 10/5/16
7	✓	📌	▷ Analysis/Software Requirements	4 days	Thu 10/6/16	Wed 10/12/16
17	✓	📌	▷ Design	14 days	Wed 10/26/16	Tue 11/15/16
25		📌	▷ Development	60 days	Tue 12/6/16	Mon 2/27/17
32		📌	▷ Testing	20 days	Tue 2/28/17	Mon 3/27/17
48		📌	▷ Documentation	21 days	Tue 3/28/17	Tue 4/25/17
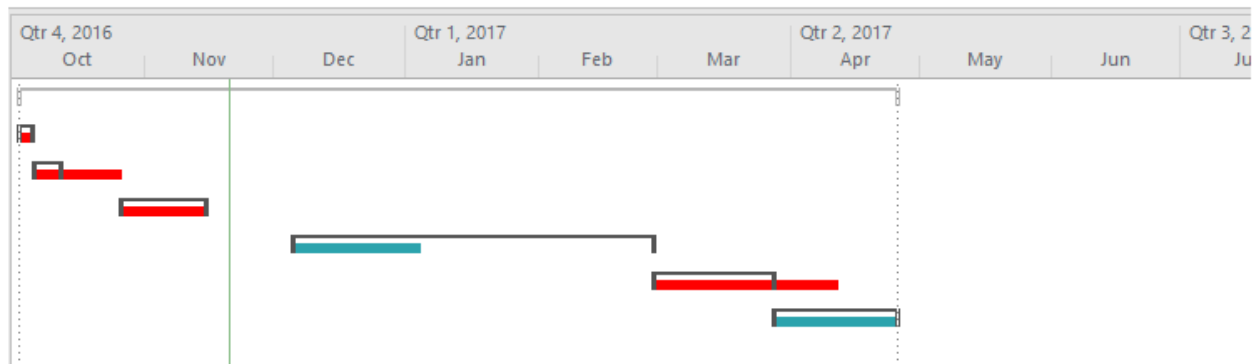
7.2. Budget

The budgetary allocation for this project is negligible since the costs expected are for traveling to meet the client at his/her place of work, the client is expected to be available within Nakuru Town (For my case its Egerton University) where the project manager who is also the system developer expects to walk to meet at times of convenience with the client. No special arrangements are to be made e.g refreshments, during meeting either with the supervisor or client thus zero expenditure.

8. Other Requirements

8.1 References

1. IEEE Std 830-1998: IEEE Recommended Practice for Software Requirements

2. Specifications

3. http://www.webdunia.net/CaseStudy/internal_caseStudies/CaseStudyHRMS2.pdf

4. http://www.ibm.com/developerworks/rational/library/769.html

5. http://www.cs.iusb.edu/thesis/SLingareddy_thesis.pdf

6. http://en.wikipedia.org/wiki/Eclipse_(software)

7. http://www.eclipse.org/org/

8. Robin Schumacher, Arjen Lentz. "Dispelling the Myths". MySQL AB. Retrieved 2007-02-10.

9. "What is MySQL, MySQL 5.1 Reference Manual". MySQL AB. Retrieved 2011-08-26.

10. http://www.microsoft.com/sqlserver/en/us/default.aspx

8.2 Appendix A: Glossary of definitions, Acronymes and abbreviations

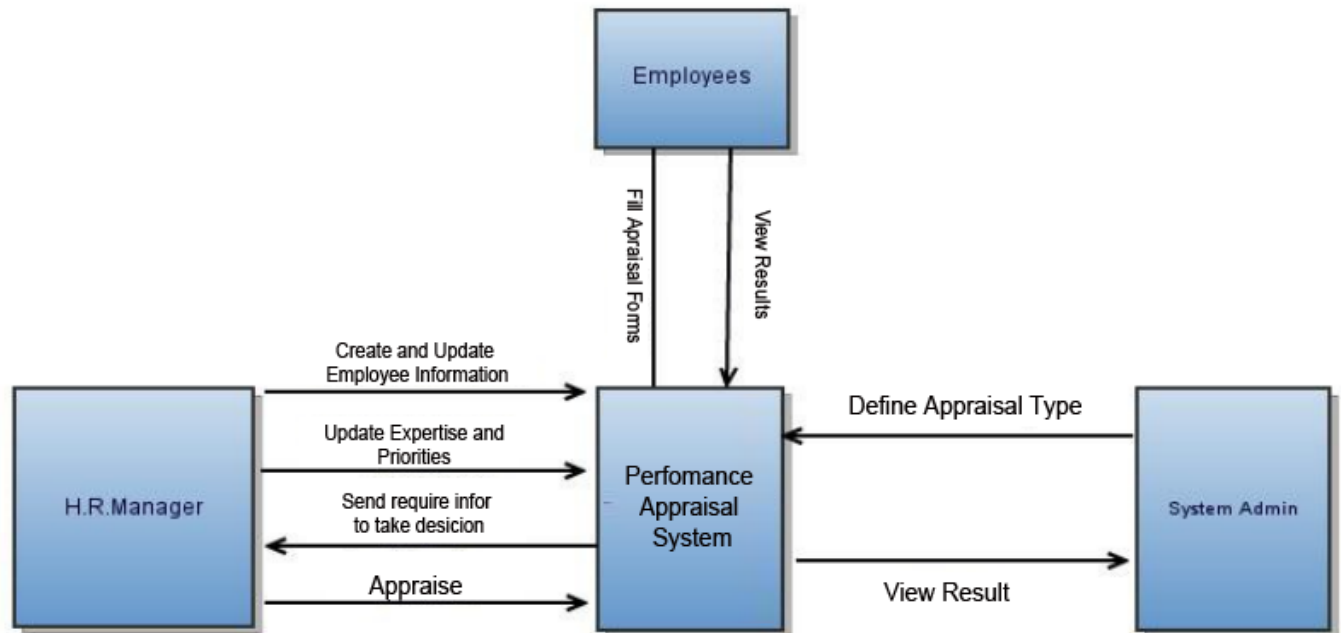|	
Aggregation	One or more classes that make up another class.
Arc	An element on a model that connects 2 nodes.
Attribute	A piece of data or knowledge that an object has.
Broadcast	The action of transmitting data through all available channels. Used to find local servers.
Class	A definition of an object, which contains a description of the data within the object and the operations it performs.
Communication Module	The module that allows communication between the client and the server.
CRUD	**C**reate **R**etrieve **U**pdate **D**elete
Developers	The team responsible for the development of the software system.
Hotkey	A key (or combination of keys) that performs a task otherwise available using buttons or menus.
Inheritance	One class taking all the data and operations of another class, optionally extending and/or altering them.
Instance	One particular object that has been created from a class.
JLF	**J**ava **L**ook & **F**eel

Appendix B: Analysis Models

a) **Use Case Diagram**
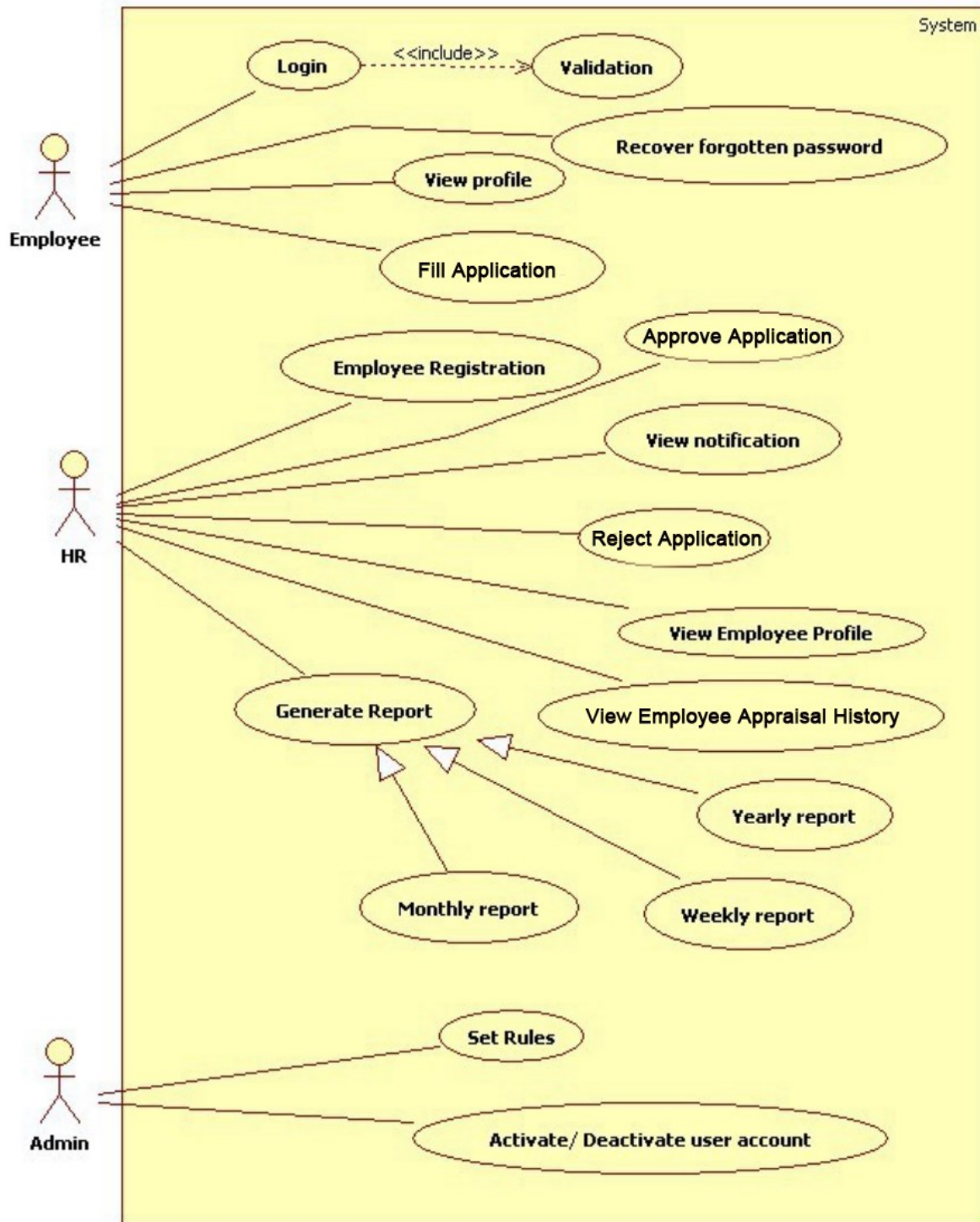
b) System Flow Chart
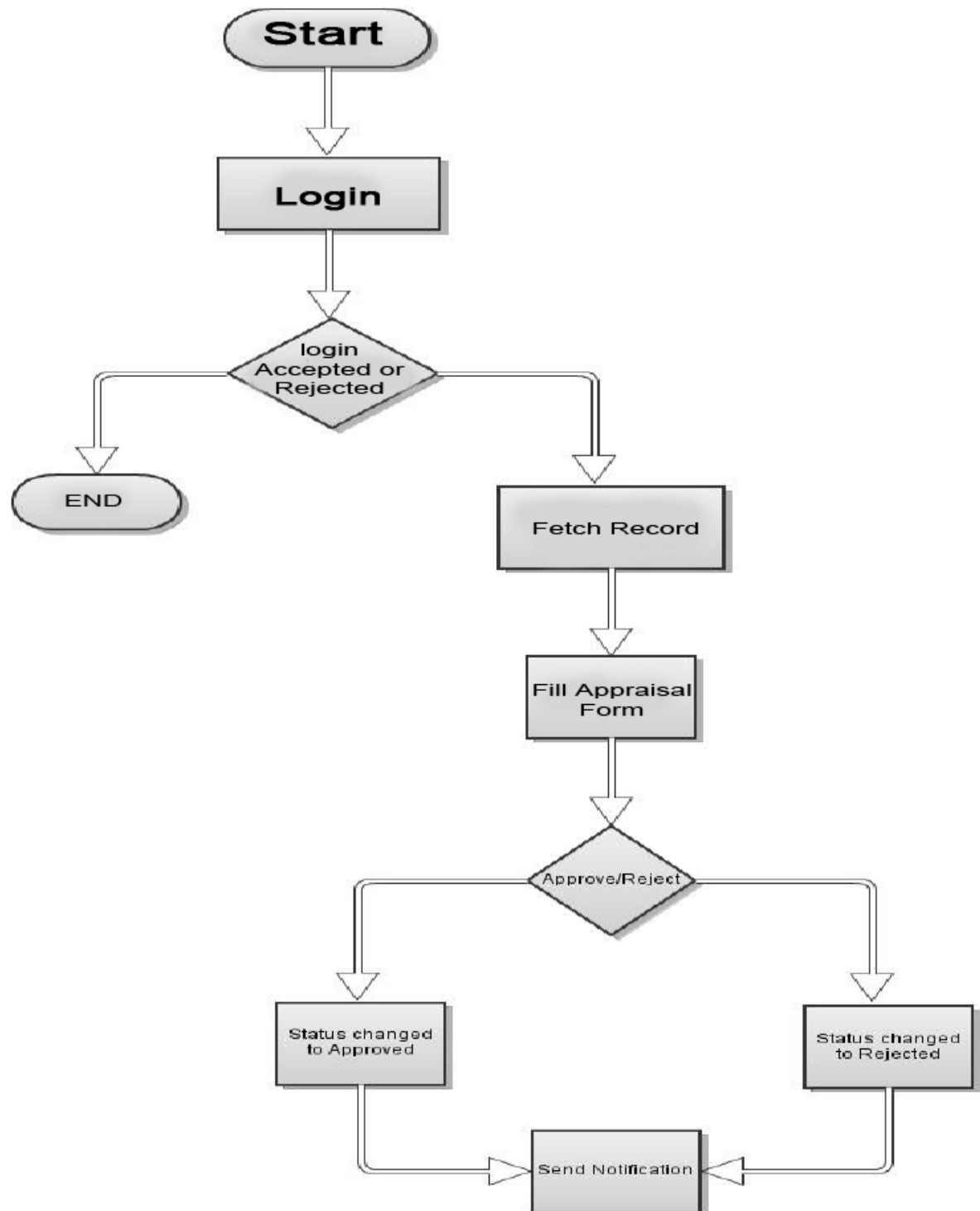
c) Context Diagram

Appendix C: Issues List

Nil.