Software Requirements Specification

Human Resource Management System

Sponsored by Siemens Enterprise Communication

Prepared by

InnovaSoft

Cansu Hekim - 1630888
Bekir Doğru - 1560085
Zaman Safari - 1572254
Hamid Siddiqi - 1634427

25.11.2011

1 Introduction

This document is a software requirement specification for the HR Management System Project. After giving information about the definition of the project at the beginning part of the document, we will give complete description for overview and list the requirements which meet the needs of the company roughly.

1.1 Problem Definition

Nowadays, companies try to enhance their management and have a better control over their employees. In order to fulfill these requirements in a more efficient way they need software called Human Resource Management System.

HR Management System is software which satisfies the needs of the Human Resources Department of a company to manage employees' personal data (citizen identity number, name, surname, birth-date, birthplace, educational information etc.), annual leaves, payroll, trainings, skills, performance evaluation and so on. Our HR Management System will meet the needs for managing the personal data, system authentication and authorization of an employee.

Our HRMS project is being developed for Siemens who wants to control and manage their employee’s data in a more appropriate and neat way. With the help of our project they will have better software to manage their personal data, control mechanism to authorize and authenticate for the employees’ entry.

1.2 Purpose

This document aims to give a brief description about the HR Management System Project. With the help of this document the needs of the company and the solution that will be provided to that needs will be clearly presented. In other words this document will provide a basis for validation and verification.

1.3 Scope

This document covers the whole definition of the HR Management System (HRMS) project. It basically includes the requirements for managing the personal data, controlling authentication and authorization mechanism, and evaluating of employees’ performance. After creating the new HRMS we have to accomplish data migration from their existing system to our new one.

More specifically, our HRMS (HR Management System) controls and manages the personal database such that any user with different role types as manager, admin, employee, and human resource will be able to manipulate their personal data.

In addition to manipulating the personal data, our HRMS will provide authentication and authorization mechanism. Every user with any role type can be able to login to the system with his/her username and password.

1.4 User and Literature Survey

Although most of the companies of the world have been using HRMS for a long time as a result of a need for reaching and managing the data of employees, HRMS projects are developed without the required properties they to be well-formed. Unfortunately, this situation is not different in Turkey. Due to the rapid progress in companies like increase in number of the employees, the increase in the expectations in employees' skills and the variations of the employee types, the existing HRMS

becomes inadequate to meet these required needs.

We aim to develop a HRMS in such a manner that it would be able to fulfill the upcoming changes in the needs of Siemens Company. In other words, our HRMS will be a flexible system such that it could be improved according to the future needs of Siemens Company.

1.5 Definitions and Abbreviations

- SRS: Software Requirements Specification
- HRMS: Human Resource Management System
- HR: Human Resource
- Siemens EC: the Company that we are developing the HRMS for.
- Admin: Administrator

1.6 References

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

Specifications

[2] http://www.webdunia.net/CaseStudy/internal_caseStudies/CaseStudyHRMS2.pdf

[3] http://www.ibm.com/developerworks/rational/library/769.html

[4] http://www.cs.iusb.edu/thesis/SLingareddy_thesis.pdf

[5] http://en.wikipedia.org/wiki/Eclipse_(software)

[6] http://www.eclipse.org/org/

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

[8] "What is MySQL, MySQL 5.1 Reference Manual". MySQL AB. Retrieved 2011-08-26.

[9] http://www.microsoft.com/sqlserver/en/us/default.aspx

1.7 Overview

This SRS is organized in a way that any user of the Siemens can easily understand and use the HRMS. In other words, it constitutes a user guideline for HRMS.

Basically, this document starts with a brief explanation of the problem. Later on, it continues with a detailed solution we proposed. Also block diagrams of our solution to visualize the solution and system better, specific and functional requirements, interface requirements, constraints that may be confronted while developing the software, relationship between user types each of which is a data object. This document ends with the planning and estimating the basic schedule of our process.

2 Overall Description

The overall description of our project can be stated as creating and managing the database, developing a friendly user interface to manipulate the database, provide an authentication mechanism to safely accomplish tasks mentioned above.

2.1 Product Perspective

Currently, Siemens has an HRMS already in use. However, with the HRMS we will provide them with additional capabilities and properties organized neatly.

HRMS which is an online intranet System will be used by four types of employees' of Siemens. These types who have different roles can be stated as; admin, manager, HR, employee. Every user enters the main authentication page and after that, system will grant them authorization. After being authorized according to their permissions (role type) users will basically query and edit the database via HRMS.

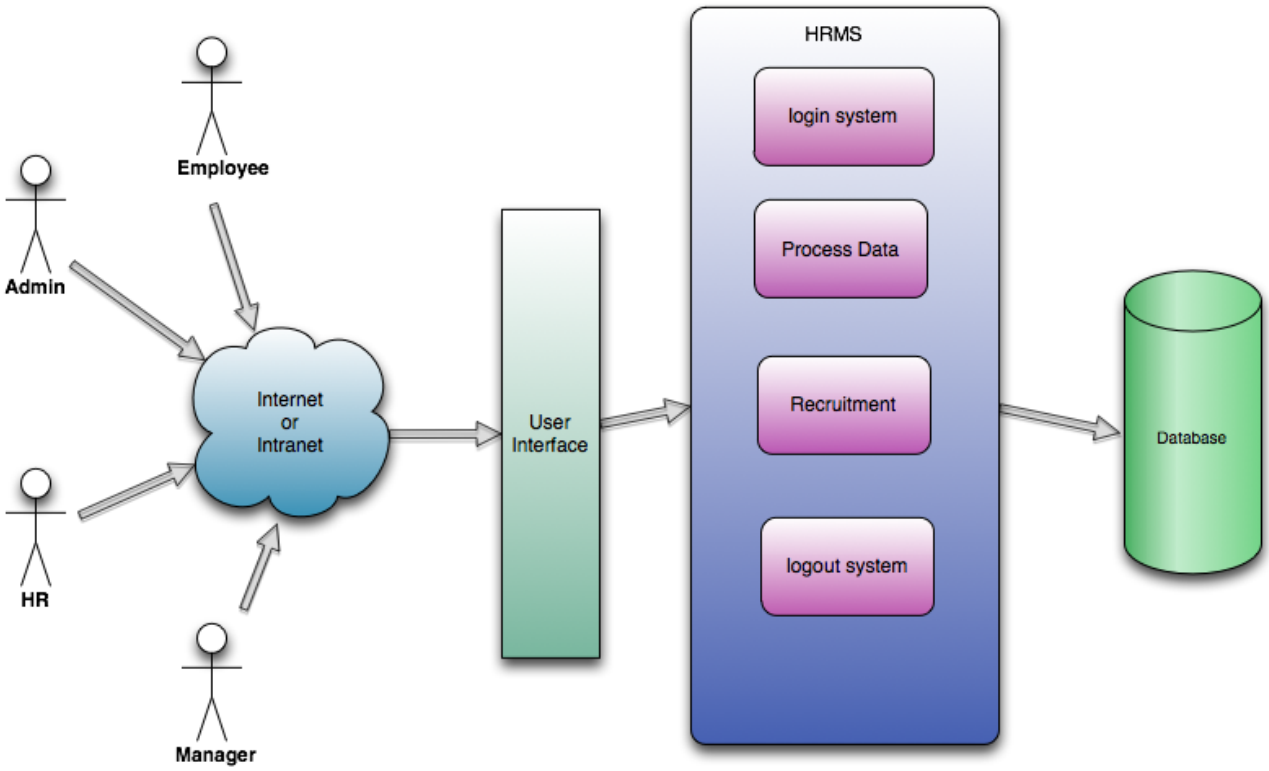


Figure 2.1.1: General Use Case Diagram [2]

2.2 Product Functions

HRMS implements some major functions in order to accomplish required tasks. These functions constitute a basis for the whole system. These functions can be stated as:

2.2.1) Authentication and Authorization

Being connected to internet, users will be able to get into the system. In order to see the interface related to his/her role type, the users account should be authorized and also his/her user name and password should be authenticated. These tasks are basically held by the functions implemented under the header of Authentication and Authorization major function.

2.2.2) Process Data

These functions which can be examined in that process data major function are basically

provides user to manage the database according to the desired task. These management tasks constitute the major feature of the HRMS. With the help of these functions a user can update some basic personal data like contact information, marital status etc. In addition to update data, a user can also search the database in order to obtain the list of the users' which has the properties desired. Also a user may also see the specific information about a user or all users which can be named as report. In other words searching is the operation with rows of the database while reporting is operation with columns of the database.

2.2.3) Recruitment

Recruitment of a new person which means introducing a new user to the system can be accomplished in two steps. When it is needed to add a new user to the system, firstly, HR must create an employee account, by the way at this step HRMS automatically gives an id to that user. At the second step, admin creates a user related to that user id.

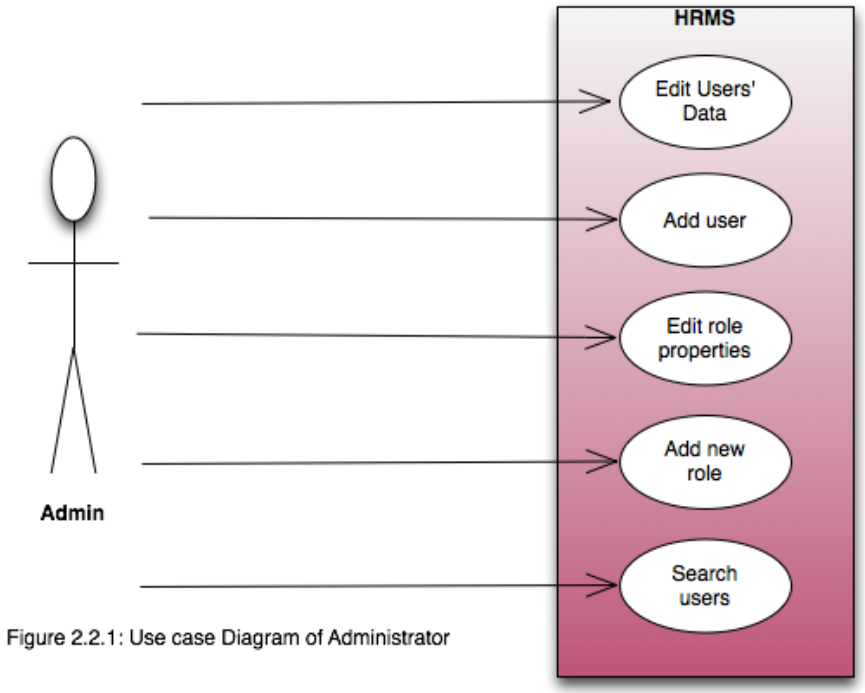


Figure 2.2.1: Use case Diagram of Administrator

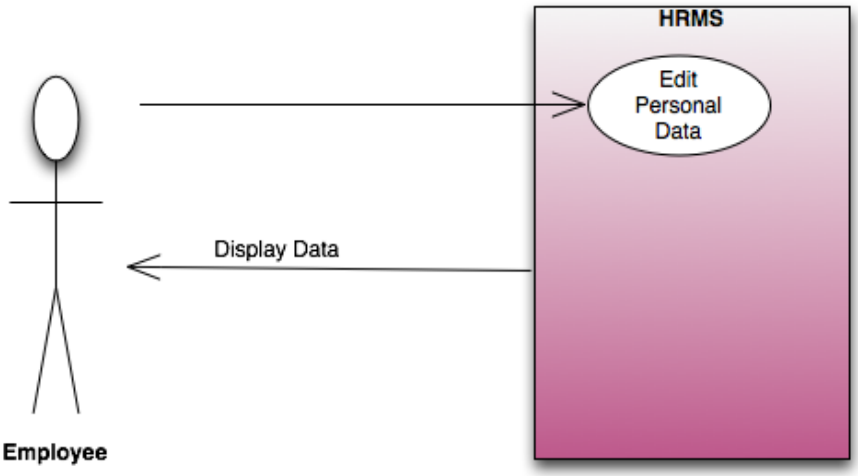


Figure 2.2.2: Use case diagram of Employee

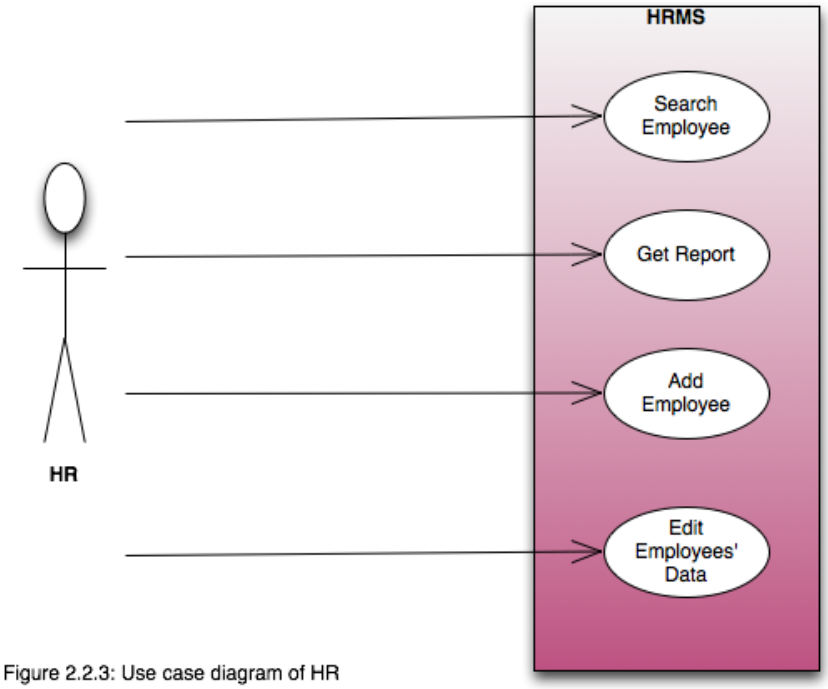


Figure 2.2.3: Use case diagram of HR

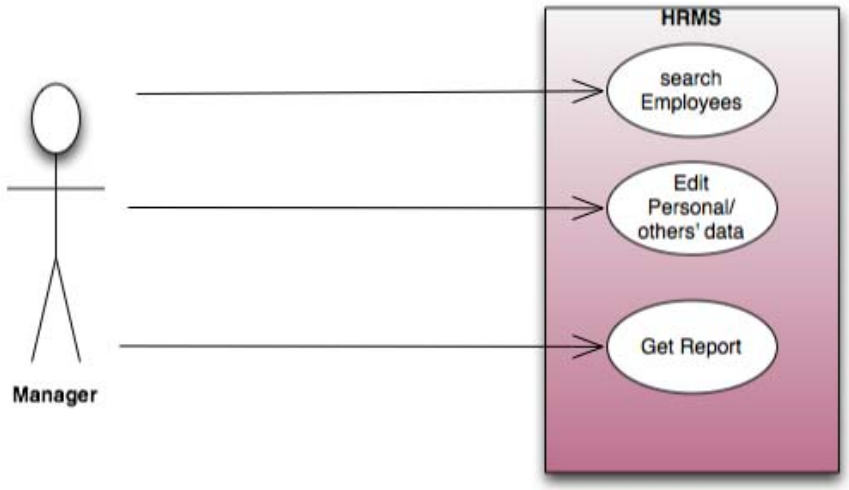


Figure 2.2.4: Use case diagram of Manager

2.3 Constraints, Assumptions and Dependencies

- **Regularity Policies:**

Each user must be an employee of Siemens. In other words, each user has account created by HR and authenticated by admin.

- **Hardware Limitations**

There is no limitation in the operating system in which HRMS will work. However, the HRMS system and the database will work on a server that needs to be always online. Users can access the system with any internet browser.

3 Specific Requirements

3.1 Interface Requirements

All the users will see the same page when they enter HRMS. This page asks the users a username and a password.

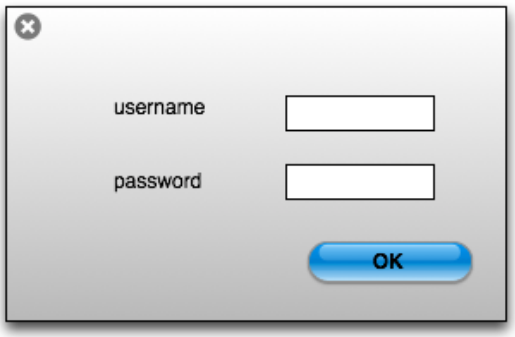


Figure 3.1.1: The interface which is seen to every user to enter the system

After being authenticated users will see the interface containing the information of the first tab of the user role types. This interface include different tabs according to their role types determined by admin at the authentication phase. By the way, users may have more than one role. Then a user who has more than one role will be able to see all the tabs that are related to his/her role types. These tabs can be named as; Personal Data Tab, Employee List Tab, Add New Employee Tab, Add New User Tab, Manage Users Tab, Users List Tab and Arrange Roles Tab.

User who have employee role have authorization to see only Personal Data Tab, HR role gives right to see Employee List Tab and Add New Employee Tab. Manager role gives authorization to see only Manager Tab. And Admin role gives user right to see User List Tab and Arrange Roles Tab. These authorizations are default ones but an admin can change these authorizations by Arrange Roles Tab. These tabs can be explained detailed as:

3.1.1 Personal Data Tab

With the help of this tab, employees will be able to see their personal information which appears in a user-friendly design and also by means of this tab they may edit, update some information in other words manage some personal information which are updatable such as contact information, training information. This tab will only seen by the users who has a role of Employee.

3.1.2 Employee List Tab

This tab gives the list of all employees as selectable format (there will be a check box near each employee). This tab includes two function buttons namely report and search.

When clicked on report button, a window will be opened which enables the user to select any column that he/she wants to see the specified employees' (Employee list is selectable so HR can specify users by selecting them from the list) or all employees' information under preferred column/s.

When clicked on search button, again a window will be opened in which the user can enter the field name and the desired value. There can be more than one entry and user can choose to OR/AND them.

3.1.3 Add New Employee Tab

With this tab HR can add new employee (when a new employee is recruited) to the employee database with filling personal master data of this new employee. This tab adds new employee without any authenticated or authorized user attached to it. In other words only being added via this interface by HR is not enough to access this system. This account must be validated by admins.

Clicking on this tab an admin will see a window like:

3.1.4 Add New User Tab

With the help of his tab, Admins can add new user to the system. Admin can add user with user ID and arrange authentication and authorization to it. This user will be created by synchronized to the employee with the same ID from the employee database.

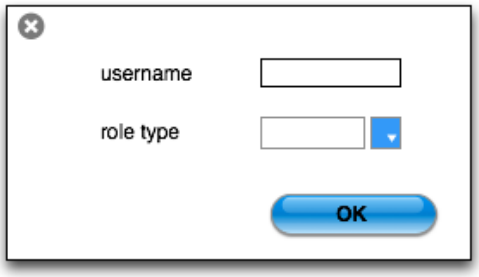


Figure 3.1.4.1: The first step of creation of a new user

3.1.5 Manager Tab

With the use of this tab, Managers can edit information of employees who are attached to him/her. When this tab is selected there exist a search and report buttons (similar with the one in Employee List Tab but this one is restricted for employees whose manager is the user) and list of employees who are attached to him/her, below it. If Manager selects a user to display or edit information of, system displays information of that user in editable form.

3.1.6 User List Tab

In this tab, an Admin can list all users. Also there exist a search button as in Manage Users Tab which lets the admin to select user from the list by searching. After selecting the user, a new window is opened with information of that user. Admin can edit all information of that user including roles information (roles part of a user can be changed only by admin). When admin wants to change role of a user, a list came up of all roles determined in the system. Admin can select/deselect roles from this list; this selection determines authorization of this user. If any of these roles are selected then automatically this user becomes unauthenticated.

3.1.7 Arrange Roles Tab

In this tab, an Admin can list all roles determined in the system, display all users who have this roles, arrange permissions for all roles and create new roles. In this tab, there are two lists and two buttons above them. These buttons are: “Change Permissions” and “Create New Role”, these two lists are Roles List above and Users List below. When Admin select any of the roles from the above list, all users who have that role are listed on the list below. From this list admin can not only displays users in that role but also change roles of these users.

3.2 Functional Requirements

In this section, we will explain the major functions of HRMS along with the data flow. So the major functionality of the project such as authentication mechanism, personal data processing, recruitment, report, and graphical user interface unit will explained step by step.

3.2.1. Functional requirement 1..n

3.2.1.1 Authentication

Login	User can login to the HRMS system with his/her username and password.
Logout	User can logout from the HRMS system.
Login failure	If the user does not exists in the database or the user did not get authorized by the HRMS admin yet.

3.2.1.2 Authorization

User role check	After logging in, the user role will be checked from the database and the user interface will be created according to that role/roles.

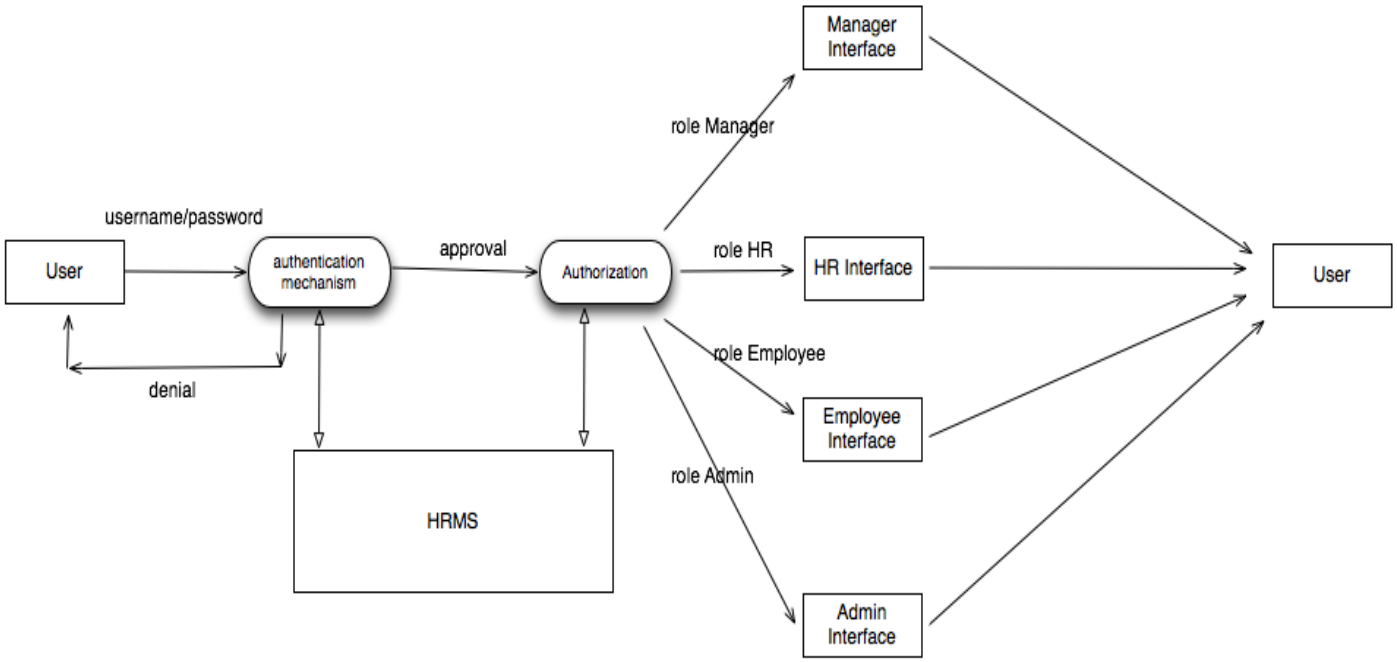


Figure 3.2.1.1: Authorization/Authentication DFD

3.2.1.3 Process Data

Display	User with defined roles can display the content of the database. Being more specific, employee can only view his/her personal information. Manager can see not only his/her personal information but also employees' information who are working under his/her coverage. Admin and HR can display their personal information and all employees' information.
Edit	A user with employee role can edit his/her specific personal information. Manager can only edit employees' personal information that is under his/her coverage except user role type. HR can edit all employees' information except user role type. Admin can edit all information related to all employees' including their user role type.
Search	User with manager role type can search the content of database for the employees who are under his/her coverage. HR and admin roles can search all the employees' information in the database. Search feature works on specific keywords showing employees' characteristics, peculiarities, skills, features, and etc. For example, HR wants to find employees who are well trained in "Java Programming Language". He/she will write the specific keyword in the search bar and press the available search button. Afterwards, he/she will find a list of all the employees' who know "Java Programming Language".
Report	This feature is basically used to filter the contents of the search mechanism. For instance, as we mentioned in the above search feature. The HR wants to get a report of some specific employees who know "java programming Language". The list of employees obtained from the result of search feature he/she can get the specific report by selecting the corresponding checkbox available for each employee. Or a manager role type can get a report of some or all employees' who are working under his/her coverage by selecting the checkbox. Except employee role type, all other role types such as admin, HR, and manager can use this feature.
Update authentication	This feature can be used only by admin role type. Admin can update the role type of a specific user. For example, an employee got promotion and his role type will be changed from employee role to manager role. Admin will be able to update this authentication mechanism.

3.2.1.4 Recruitment

Add a new employee	HR role type is able to add a new employee to the database. The new employee will have all the required personal information related to his/her. The new created employee will have an id.

Add a new user	After being created a new employee by HR role, admin role is responsible for creating a new user by the specified id assigned in the "Add a new employee" feature. The unique id will be given by the system. Admin will assign a new role such as employee, manager, HR, and admin to the new created user.

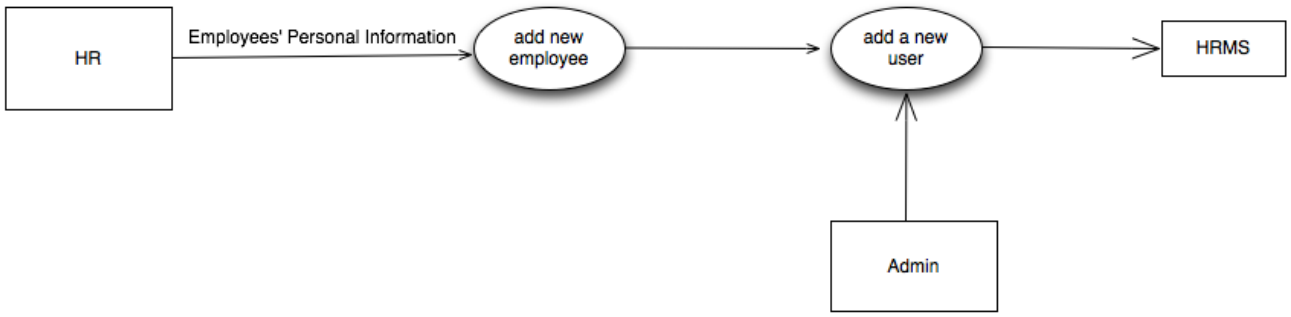


Figure 3.2.1.4: Recruitment DFD

3.3 Non-functional Requirements

3.3.1 Performance requirements

3.3.1.1) The number of the online user of the HRMS can be estimated as 50 at most.

3.3.1.2) There is no restriction on the number of the users to be added to the database.

3.3.2 Design constraints

3.3.2.1 Hardware Requirements

- The HRMS application will be storing 200 employees' personal data. Roughly … MB of storage capacity is needed.

3.3.2.2 Software Requirements

- Since HRMS application is a web-based application, internet connection must be established.
- The HRMS software will be used on PCs and will function via internet or interanet in any web browser.
- The HRMS application interface will be developed by Java (J2EE) framework.s
- The HRMS software will support JDK environment.
- The HRMS software personal database model will support MYSQL environment as DBMS.

- The HRMS will run on any platform supporint JDK technology.
- Application will run on 256MB or higher of RAM.

3.3.2.3 Development Environment Requirments

- Eclipse IDE will be used for developing the HRMS web-based interface and its relation to person database module.
- **Eclipse IDE**

  Eclipse is a multi-language software development envirnoment comprising an integrated development environment(IDE) and an extesible plug-in system. It is written mostly in Java and can be used to develop applications in Java and, by means of various plug-ins, other programming languages including Ada, C, C++, COBOL, Perl, PHP, Python, R, Ruby(including on Rails framework), Scala, Clojure, Groovy, and Scheme. It can be used to develop packages for the software Mathematica. The IDE is often called Eclipse JDT for Java programming language, Eclipse ADT (Ada Development Toolkit) for Ada, Eclipse CDT for C/C++, and Eclipse PDT for PHP.[5]
  Eclipse is an open source community, whose projects are focused on building an open development platform comprised of extensible frameworks, tools and runtimes for building, deploying and managing software across the lifecycle. The Eclipse community is a not-for-profit, corporation who are members of the Eclipse community hosts the Eclipse projects and helps develop an open source community and an wolrd of complementary products and services.[6]

- MySql Administrator or Microsoft SQL Server will be used to create, manage, and optimize the person database module.
- **MySql Administrator**

  MySQL is a relational database management system(RDBMS)[7] that runs as a server providing multi-user access to a number of databases. The SQL phrase stands for Structured Query Language.[8]
  The MySQL development platform has made its source code available under the terms of use of the GNU General Public License.
  Open source free-software projects use MySQL if it is required a full-featured database management system. Several paid editions are available for commercial use, and offer additional functionality. MySQL is also used in may high-profile, large-scale World Wide Web products, includeing Wikipedia, Goolge, Facebook, and Twitter.

- **Microsoft SQL Server**

  Microsotf SQL Server is a relational database server, deceloped by Microsoft; it is a software product whose primary function is to store and retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet). There are at least a dozen different editions of Microsoft SQL Server aimed at different audiences and for different workloads (ranging from small applications that store and retrieve data on the same computer, to millions of users and computers that access huge amounts of data from the Internet at the same time).[9]

4. Data Model and Description

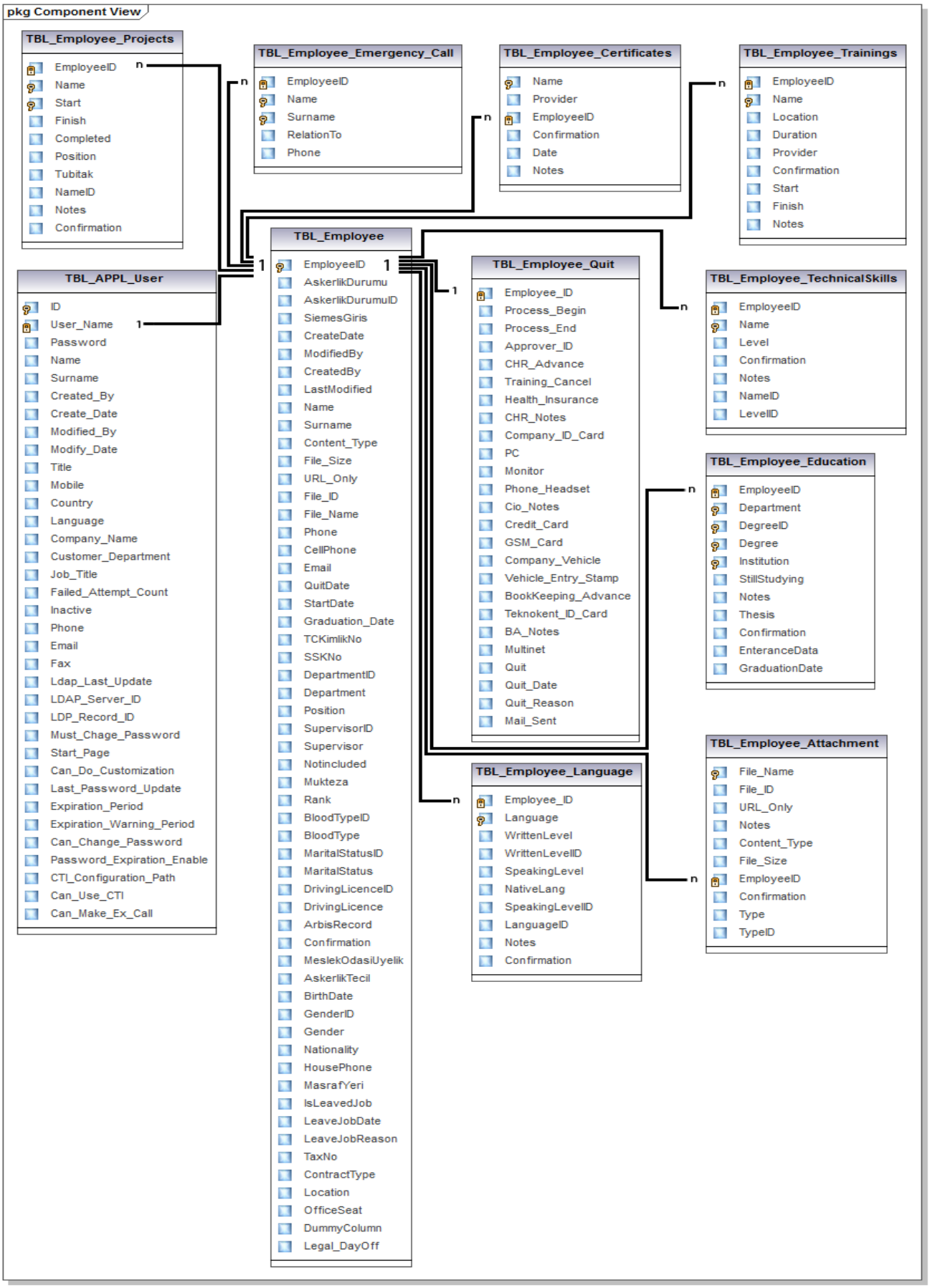
This section describes attributes of database objects and relationship between them with a data table dictionary and tables to overcome confusions. These data objects are made under the consideration

of getting rid of unnecessary attributes and normalization factors. The HRMS application consists of two main database groups. First one is storing information for Personal Master Data module and the second one is for Authorization and Authentication Module.

4.1 Data Description of Personal Master Data Module

In this section we mainly describe each table of the Personal Master Data Module in details. We determine each table and its responsibility in the module. Each table keeps many fields related to the specific data object. Then in the following sections we will explain the relationships of each database module table with each other.

- TBL_Employee
- TBL_APPL_User
- TBL_Employee_Projects
- TBL_Employee_TechnicalSkills
- TBL_Employee_Educatioin
- TBL_Employee_Languages
- TBL_Employee_Trainings
- TBL_Employee_Certificates
- TBL_Employee_Emergency_Call
- TBL_Employee_Quit
- TBL_Employee_Attachments


pkg Component View
TBL_Employee_Projects
EmployeeID
Name
Start
Finish
Completed
Position
Tubitak
NameID
Notes
Confirmation
TBL_Employee_Emergency_Call
EmployeeID
Name
Surname
RelationTo
Phone
TBL_Employee_Certificates
Name
Provider
EmployeeID
Confirmation
Date
Notes
TBL_Employee_Trainings
EmployeeID
Name
Location
Duration
Provider
Confirmation
Start
Finish
Notes
TBL_APPL_User
ID
User_Name
Password
Name
Surname
Created_By
Create_Date
Modified_By
Modify_Date
Title
Mobile
Country
Language
Company_Name
Customer_Department
Job_Title
Failed_Attempt_Count
Inactive
Phone
Email
Fax
Ldap_Last_Update
LDAP_Server_ID
LDP_Record_ID
Must_Chage_Password
Start_Page
Can_Do_Customization
Last_Password_Update
Expiration_Period
Expiration_Warning_Period
Can_Change_Password
Password_Expiration_Enable
CTI_Configuration_Path
Can_Use_CTI
Can_Make_Ex_Call
TBL_Employee
EmployeeID
AskerlikDurumu
AskerlikDurumuID
SiemesGiris
CreateDate
ModifiedBy
CreatedBy
LastModified
Name
Surname
Content_Type
File_Size
URL_Only
File_ID
File_Name
Phone
CellPhone
Email
QuitDate
StartDate
Graduation_Date
TCKimlikNo
SSKNo
DepartmentID
Department
Position
SupervisorID
Supervisor
Notincluded
Mukteza
Rank
BloodTypeID
BloodType
MaritalStatusID
MaritalStatus
DrivingLicenceID
DrivingLicence
ArbisRecord
Confirmation
MeslekOdasiUyelik
AskerlikTecil
BirthDate
GenderID
Gender
Nationality
HousePhone
MasrafYeri
IsLeavedJob
LeaveJobDate
LeaveJobReason
TaxNo
ContractType
Location
OfficeSeat
DummyColumn
Legal_DayOff
TBL_Employee_Quit
Employee_ID
Process_Begin
Process_End
Approver_ID
CHR_Advance
Training_Cancel
Health_Insurance
CHR_Notes
Company_ID_Card
PC
Monitor
Phone_Headset
Cio_Notes
Credit_Card
GSM_Card
Company_Vehicle
Vehicle_Entry_Stamp
BookKeeping_Advance
Teknokent_ID_Card
BA_Notes
Multinet
Quit
Quit_Date
Quit_Reason
Mail_Sent
TBL_Employee_TechnicalSkills
EmployeeID
Name
Level
Confirmation
Notes
NameID
LevelID
TBL_Employee_Education
EmployeeID
Department
DegreeID
Degree
Institution
StillStudying
Notes
Thesis
Confirmation
EnteranceData
GraduationDate
TBL_Employee_Language
Employee_ID
Language
WrittenLevel
WrittenLevelID
SpeakingLevel
NativeLang
SpeakingLevelID
LanguageID
Notes
Confirmation
TBL_Employee_Attachment
File_Name
File_ID
URL_Only
Notes
Content_Type
File_Size
EmployeeID
Confirmation
Type
TypeID

4.1.1 Data objects

4.1.1.1 TBL_Employee Table

Name:	**TBL_Employee Table**
Description:	Data table for Employee consists of many fields which are responsible for storing the specific employee personal information. Some important fields in the table can be said as employee id, name, surname, email, phone, date of birth, and many more which can be seen in the above database table. Fields in this table will be filled with the specific data of the Employee. At the time a new Employee is added to the HRMS system, these fields keeps the data manually provided by the HR. After the first creation of the Employee account, employee him/herself, manager, HR, and admin have authorization to modify this information.

4.1.1.2 TBL_APPL_User

Name:	**TBL_APPL_User**
Description:	The TBL_APPL_User table consists of basic information about a user. The detailed information about this table will be given in part (4.2), in Authorization and Authentication module part.

4.1.1.3 TBL_Employee_Projects

Name:	**TBL_Employee_Projects**
Descriptioin:	This table stores basic relation between projects and employees. it stores information about projects that this specified employee takes part. In other words, it keeps specific employee id, projects id, name, start, finish, and completed dates, and notes.

4.1.1.4 TBL_Employee_TechnicalSkills

Name:	**TBL_Employee_TechnicalSkills**
Description:	This table stores information about an employee technical skills. Information such as employee Id, name, level, confirmation, notes, and levelId will be kept.

4.1.1.5 TBL_Employee_Educatioin

Name:	**TBL_Employee_Educatioin**

Description:	This table keeps information about an employee education. Basically, information such as employee id, department, degree, institution, thesis, notes, still studying, entrance date, graduation, and etc.

4.1.1.6 TBL_Employee_Languages

Name:	**TBL_Employee_Languages**
Description:	Employee languages table stores data fields such as employee id, languages, written and speaking level of the languages, native language, notes, and confirmation.

4.1.1.7 TBL_Employee_Trainings

Name:	**TBL_Employee_Trainings**
Description:	This table gives information about an employee trainings. It keeps employee id, training name, location, duration, provider, confirmation, star and end dates, and notes.

4.1.1.8 TBL_Employee_Certificates

Name:	**TBL_Employee_Certificates**
Description:	An employee may have certificates throughout his/her education timeline or he/she will get any other certificates during his working duration in the company. Employee certificate table stores data field such as employee id, name of the certificate, its provider, date, notes and confirmation.

4.1.1.9 TBL_Employee_Emergency_Call

Name:	**TBL_Employee_Emergency_Call**
Description:	This table will be used in case there is an urgent call to a specific employee. In order to rich the employee information, we store employee id, name, surname, his/her relation to a person, and phone number.

4.1.1.10 TBL_Employee_Quit

Name:	**TBL_Employee_Quit**
Description:	Table employee quit is used to back up the specific employee information after he/she quits the job. The HRMS system will not delete the employees who quit the job. Instead, it stores their basic

	data and data fields that he/she was charged for. For instance, an employee during his work-life period might have been given items belongs to company such as PC, company id card, GSM card, credit card, phone, vehicles and etc. When he/she leaves the company, those data fields mentioned above will be marked. Basic data fields are; employee id, start and end dates of the position, PC, phone, training-cancel, health insurance, and etc.

4.1.1.11 TBL_Employee_Attachments

Name:	**TBL_Employee_Attachments**
Description:	This table is used to keep data about employee attachments. The information that will be stored is employee id, file name, file id, URL, notes, content type, file size, file type, and id.

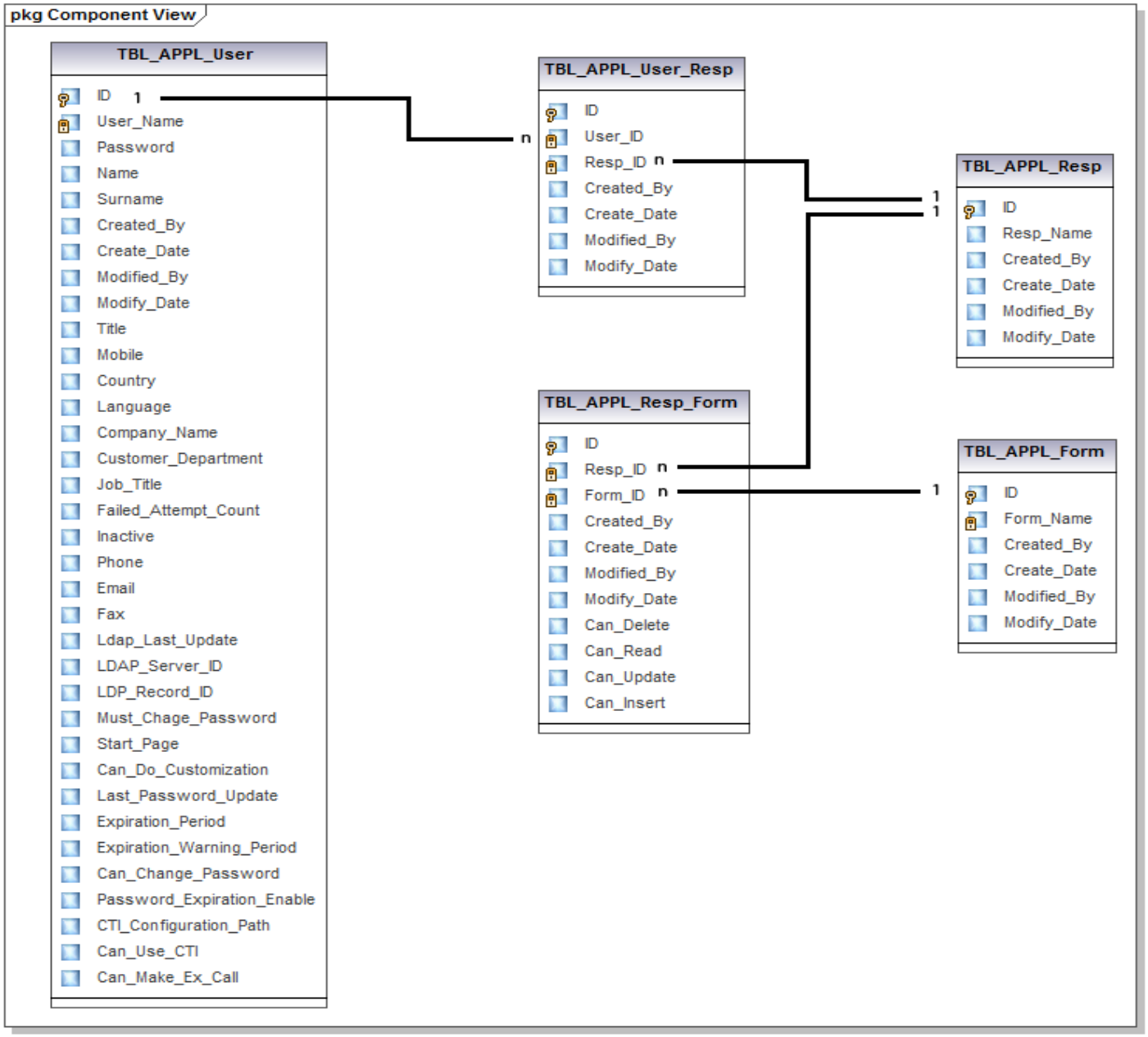
4.1.2 Relationships

Relationships between tables are made through a unique field which is employee id. Employee table creates the basic information table about an employee such as his/her id, name, surname, email, and etc. This provided employee id is a primary key for the employee table, but it will be a foreign key for all other tables using the specific employee id. All table mentioned above will manipulate employee personal data through that id. Therefore, employee id, the primary key, is like bridge between a unique employee and his/her relation to other data fields and tables.

4.2 Data Description of Authentication and Authorization Module

In this section all authentication and authorization module database tables will be described in details. We describe each table and its responsibility in the module. Each authentication and authorization database tables keep many fields related to the specific data object. Relationship between each table will be explained as well.

- TBL_APPL_User
- TBL_APPL_User_Resp
- TBL_APPL_Resp
- TBL_APPL_Resp_Form
- TBL_APPL_Form



4.2.1 Data Objects

4.2.1.1 TBL_APPL_User

Name:	**TBL_APPL_User**
Description:	User application table is used for determining user information. When a user logs into the HRMS, user's username and password is checked from this table and directed to the system. Also it contains other data fields such as user id, name, surname, when this user is created and modified by whom, title of the user, password history, phone, email, fax, and many more.

4.2.1.2 TBL_APPL_User_Resp

Name:	**TBL_APPL_User_Resp**
Description:	This table is basically used to determine the assigned role types for a user. It also keeps creation and modification dates, and id of the users who created and modified these role assignments.

4.2.1.3 TBL_APPL_Resp

Name:	**TBL_APPL_Resp**
Description:	This table is responsible for storing role type lists. The data fields are basically role id, role name, people who created and modified and when.

4.2.1.4 TBL_APPL _Form

Name:	**TBL_APPL_Form**
Description:	This table stores a list of functions that are used in the application. The basic data fields are function id, function name, creator, and modifier.

4.2.1.5 TBL_APPL_Resp _Form

Name:	**TBL_APPL_Resp _Form**
Description:	This is table is used as a bridge between **TBL_APPL_Resp** and **TBL_APPL_Form.** By means of this table we can determine which role types are authorized to which sets of functions. That is why when a user is logged in into the HRMS; according to the user role type the interface will be displayed.

4.2.2 Relationships

The relationship between these tables is not prone to a single id. Nevertheless, there exists a process of checking a user at each step and determine his responsibility and authority. By the help of user id, user responsibility will be checked and interface will displayed according to the list of roles or responsibilities. After being checked the role types, related authorized functions will be called in the system.

5 Behavioral Model and Description

5.1 Description for software behavior

Each employee will be added to the system by entering the personal data of an employee by HR. At the creating state, HRMS will give an id to the newly added employee.

After being added by HR, each employee has a right to be introduced to the system by admin. At this state, admin determines the role type of the user and this user is given a password automatically.

At the entering state of the system, each user sees the same interface which asks a username and a password.

After entering state, each user sees the same interface with different tabs related to their role type/s (manager, HR, admin, employee). At this stage:

- Managers can
  - Search employees under his responsibility or search all the users he/she desires, i.e a manager can search rows of the database.
  - Edit the employees' data who are under his responsibility.
  - Get report of information related to the employees he/she desires to learn, i.e. a manager can search columns of the database.
- Employees can
  - Edit their personal data
  - see their data in editable form.
- HR can
  - Search employees who has the properties he/she desires.
  - Get report about an employee, or employees.
  - Add employee by entering some specific personal data of that employee.
  - Edit employees' data
- Administrator can
  - Edit any user' s (manager, admin, HR, employee) data
  - Add user, in other words create a valid account to login.
  - Edit role properties, for example there can be a need to change the attributes of each role type such that the type of tabs each user sees may change. For that kind of situation there may be need to change the properties of each role type.
  - Add a new role type to the system. Since, our HRMS is going to be a generic program there can be an addition to the role types and our system will perfectly welcome that kind of need.
  - Search the users who have the desired capabilities or properties specified.

。

5.2 State Transition Diagrams

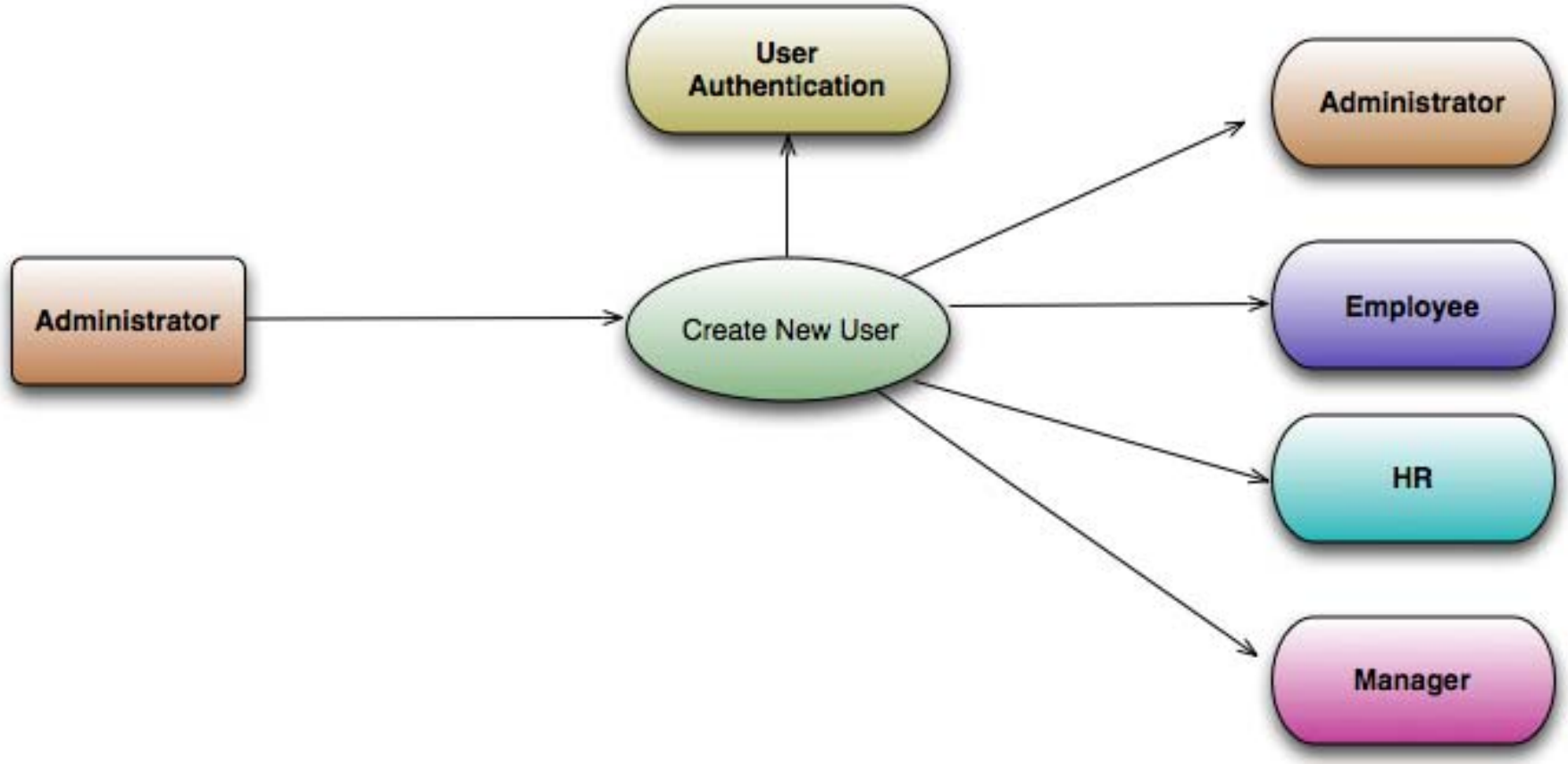


Figure 5.2.1: State diagram of the creation of a new user [3]

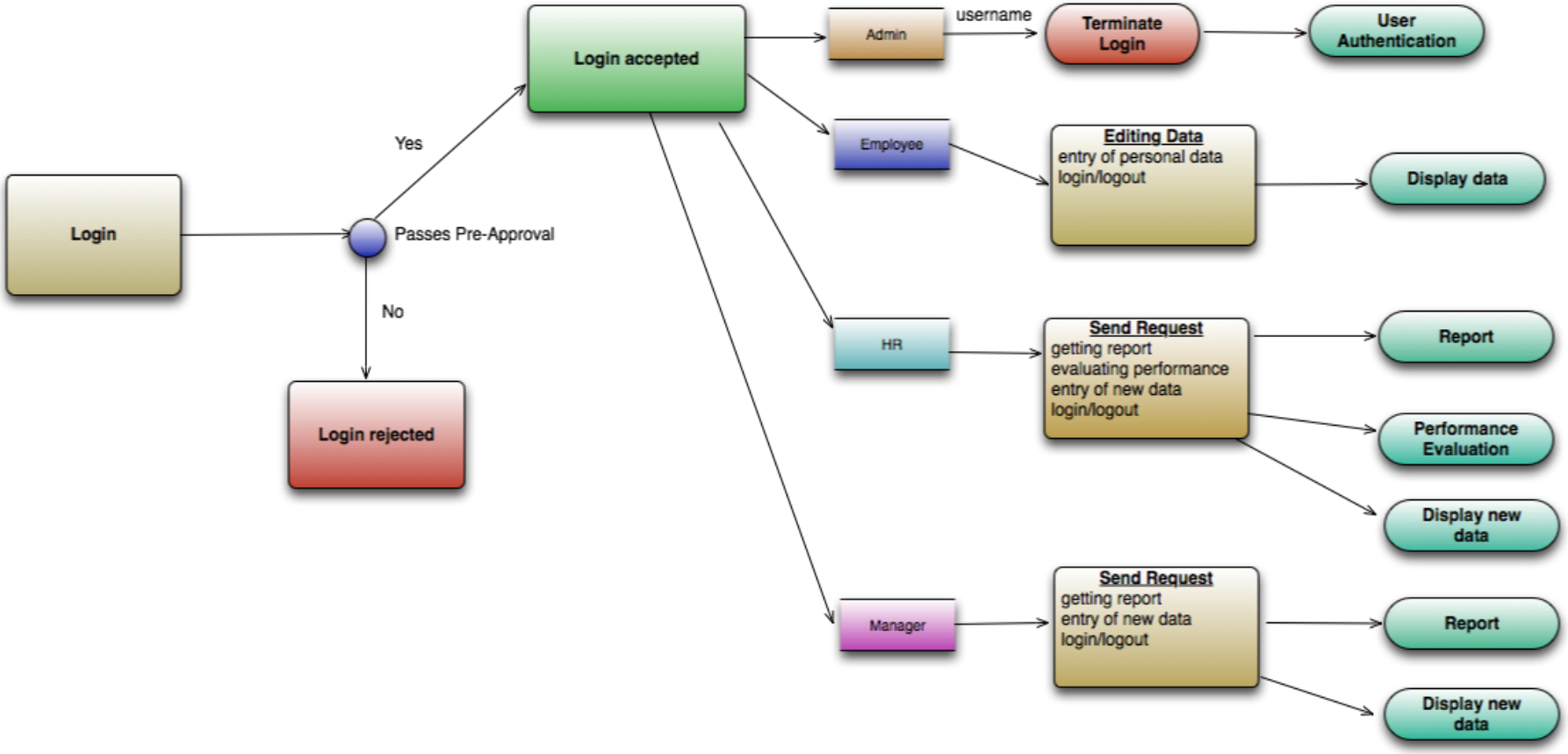


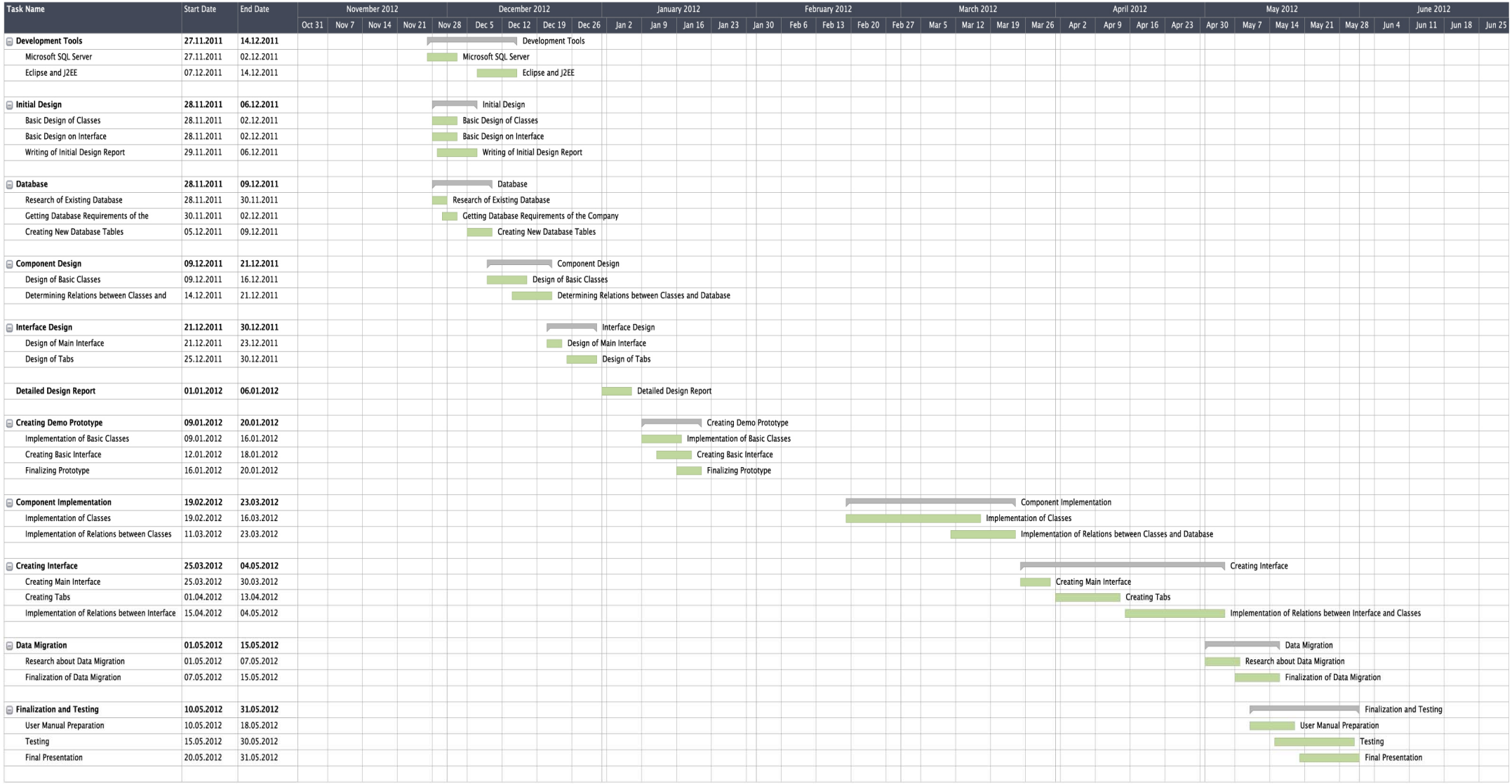
Figure 5.2.2: State Diagram of the general usage of HRMS [3], [4]

6 Planning

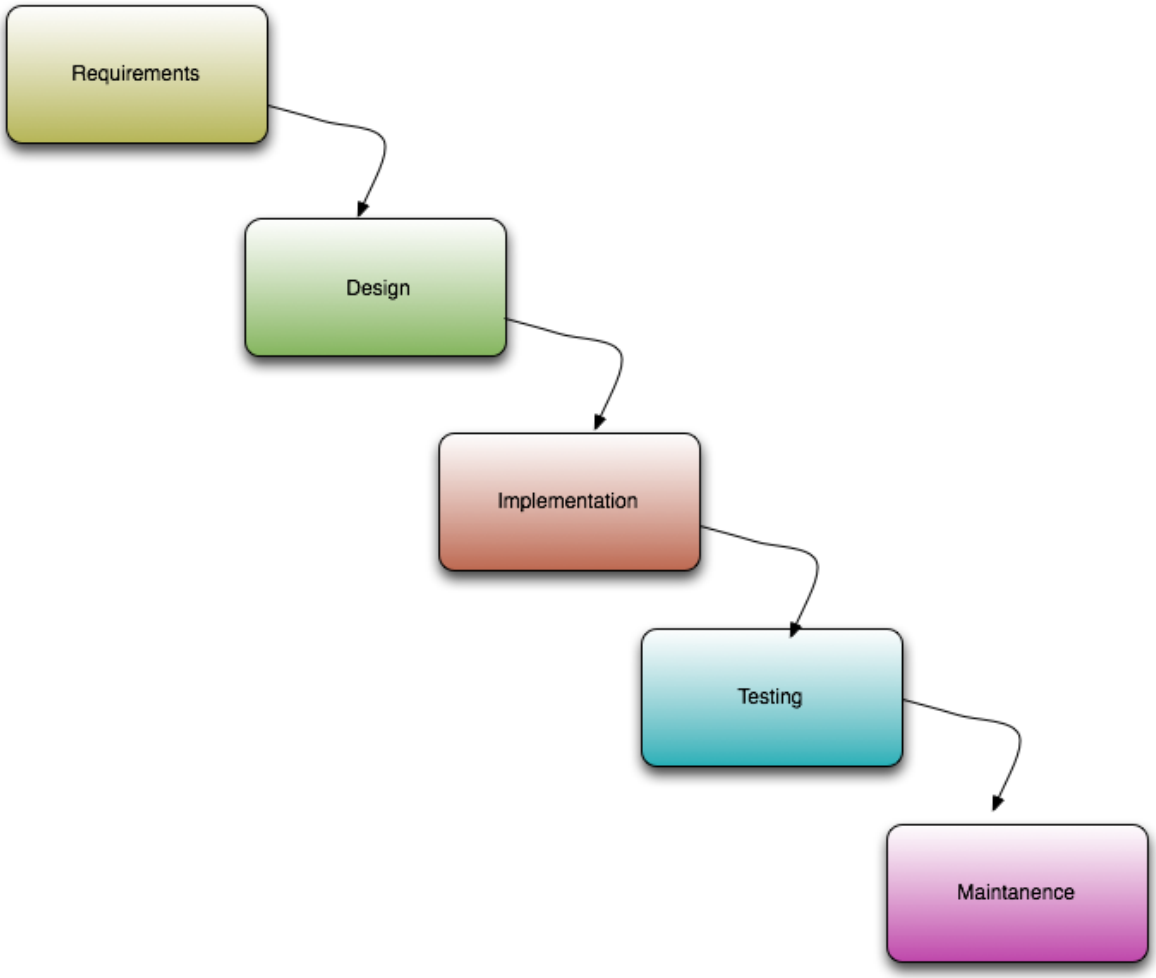
6.1 Team Structure

We chose a leader ,Cansu Hekim. She organized the meetings to accomplish the task of writing SRS. In each time we met we arranged the tasks randomly. In other words all of us worked on both design and documentation.

6.2 Estimation (Basic Schedule)



6.3Process Model



7 Conclusion

This document states the design level approach taken by the InnovaSoft Team for the project HRMS. After giving a basic information about what the HRMS is, the document briefly describes the problem and the solution we proposed to the problem with the figures to visualize better and steps taken to solve the problem. In other words this document introduces the technical details of the HRMS.

In the first part of the technical design, the major functions needed to develop an HRMS are introduced. Later on, these major functions and their sub-functions are visualized with the use case diagrams. In the second part, user interfaces are described in a detailed manner with figures. Lastly, data modules and their relationships are discussed.

To conclude, this document constitutes a base for the development of an HRMS.