

WEB BASED ERP SYSTEM

NETCRACKER TECHNOLOGY, BANGALORE.

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1. INTRODUCTION

Enterprise Resource Planning (ERP) is a category of business management software application that an organization can use to collect, store, manage and interpret data for many business activities. It integrates the working functionality of different departments using different data and patterns under a single software package.

The ERP system provides the opportunity to integrate an entire organization. End to end business processes that were traditionally disjointed, now share information through a common database. The information flow is much more efficient in that there are clear lines of business processes across the enterprise. The main aim of using this system is to provide a centralized data storage facility to eliminate conflicts and a medium for automatic and coherent workflow for the working departments. Through modular programming approach, system can be easily updated as per the requirement and easy to maintain. Thus it will provide the organizations a unified medium to track down all ongoing processes and way for smoother functioning environment.

The whole system is divided into two modules namely Admin and Employee. Admin has more privileges over Employee. Admin can add new employee to the organization, update his information and remove from the organization. Admin can also add a new department, and remove existing department if employees are not linked to it. Admin will be able to add and assign projects for the employees. After the completion of the project the status of the project will be updated by the Admin. Employee can read his information and can also edit some of his private information.

1.1 Purpose of the document

This document captures the system requirements and provides an overview about the software developed.

2. OVERVIEW

2.1 Roles

This project involves two roles:

2.1.1 Admin: The administrator has more privilege over normal Employee. Administrator will be able to view, edit, remove and add employees to the organization. Admin will be able to add new projects, assign it to the employees, and update the status of it whenever it gets completed. Admin can also add new skill that the employee is meant to have and can remove outdated skill from the list. Admin has a control to add and remove new department to the organization

2.1.2 Employee: The employee will be given the credentials by the Admin once he is in to the organization. Employee can view his general information, profile and also can edit his private information. Employee has an option to add the skills into his profile from the available skills list.

2.2 Features

2.2.1 Admin:

- Add, update and remove an Employee from the organization
- Add and remove department from the organization
- Add a new skill and remove outdated skill.
- Add and assign projects for the authorized employee.
- View employee information by using provided search option.

2.2.2 Employee: Employees will able to carry their task with provided permissions through their valid login id and password. Employees can change their private information but not the restrictions which have been imposed on them and can access only required data of required departments.

3. FUNCTIONAL REQUIREMENTS

3.1 Admin module :

3.1.1 Department:

Prerequisites: Admin credentials should be present in the database initially.

Flow:

- Admin will enter the valid credentials and logs into his account.
- If the credentials are correct, then admin will be redirected to his home page.
- Notifies the admin after successful creation and removal of department.

Attribute	Type	Mandatory	Validation
Department ID (FK)	Int (Auto Increment)	Yes	Auto Populated
Department Name	Varchar	Yes	Not Null, Unique, Minimum 4 characters starting with alphabet

Exceptional flow:

- Notifies the admin if any mandatory fields are skipped.
- Notifies the admin if data entered does not match with the correct format.
- Notifies the admin if the entered department name already exists in the database.
- An error message will be notified when admin try to delete the department which has existing employees.

Data changes:

- Department names will be entered into the *department* table and the department ID (FK) is linked to the *user* table.

3.1.2 Projects:

Prerequisites:

- Admin should create the projects before assigning it to the employee.
- Employee should be the part of organization to work on the project

Flow: Admin provides the following details while creating the project.

Attribute	Type	Mandatory	Validation
Project ID (PK)	Int (Auto Increment)	Yes	Auto Populated
Project Name	Varchar	Yes	Not Null, Unique, Minimum 4 characters starting with alphabet
Project Manager	Varchar	Yes	Not Null, Unique, Minimum 4 characters starting with alphabet
Project Description	Varchar	Yes	Null, Unique, Minimum 4 characters starting with alphabet
Project Status	Varchar	Yes	'Not Completed' (By Default)

Initially the project status will be 'Not Completed'. Admin changes the status of the project to 'Completed' whenever it is done. Similarly, the employee project history will be reflected.

Exceptional flow:

- Notifies the admin if any mandatory fields are skipped
- Notifies the admin if data entered does not match with the correct format
- Notifies the admin if the entered project name already exists in the database
- New project cannot be added until the validation is succeeded

Data changes:

- Project information will be updated into project table in the database

3.1.3 Skills:

Prerequisites:

- Admin should create the skills so that employee can add it to their profile
- Employee should be the part of organization to access the skills list

Flow: Admin provides the following details while creating a new skill.

Attribute	Type	Mandatory	Validation
Skill ID (PK)	Int (Auto Increment)	Yes	Auto Populated
Skill Name	Varchar	Yes	Not Null, Unique, Minimum 4 characters starting with alphabet
Skill Type	Varchar	Yes	Technical (By default) and Language

Admin can add a new technical or language skill, view the added skills list, and remove outdated skills.

Exceptional flow:

- Notifies the admin if any mandatory fields are skipped
- Notifies the admin if data entered does not match with the correct format
- Notifies the admin if the entered skill name already exists in the database
- New skill cannot be added until the validation is succeeded

Data changes:

- Skills information will be updated into skills table in the database
- Skills list will be available in the Employee Background section for the employees to add into their profile

3.1.4 Employee:

Flow: Admin provides the following details while creating a new skill.

Attribute	Type	Mandatory	Validation
Employee ID (PK)	Int (Auto Increment)	Yes	Auto Populated
Employee Name	Varchar	Yes	Not Null, Unique, Minimum 4 characters starting with alphabet
Employee Position	Varchar	Yes	Not Null, Unique, Minimum 4 characters starting with alphabet
Employee Line manager	Varchar	Yes	Null, Unique, Minimum 4 characters starting with alphabet
Employee Status	Varchar	Yes	Not Null
Employee HR manager	Varchar	Yes	Not Null
Employee Gender	Varchar	Yes	Not Null
Employee Start date	Varchar	Yes	Not Null
Employee End date	Varchar	Yes	Null (Default)
Employee Home country	Varchar	Yes	Not Null
Employee Current location	Varchar	Yes	Not Null
Employee Work phone	Varchar	Yes	Not Null, Unique
Employee email	Varchar	Yes	Not Null, Unique
Employee extension	Varchar	Yes	Not Null, Unique
Employee skype	Varchar	No	Not Null, Unique
Employee phone	Varchar	No	Not Null, Unique
Employee dob	Date	Yes	Not Null

Flow:

- Admin should Login into his account.
- Notifies the admin after successful creation and removal of Employee.
- Admin should know the Employee ID to update employee information.

Exceptional flow:

- Notifies the admin if any mandatory fields are skipped
- Notifies the admin if data entered does not match with the correct format
- Notifies the admin if the entered Employee name or unique information already exists in the database
- New Employee cannot be added until the validation is succeeded

Data changes:

- Employee information will be updated into users table in the database
- List of employees is provided in the Search option for both Admin and Employee.

Department ID is a foreign key and is linked to both users and department table.

Admin can remove the employee from the organization by specifying his Employee Id and the End date. The employee credentials will be deleted from the credentials table but admin can still view the records of employees removed from the organization.

Search option is provided for both Admin and Employee of the organization to search and get basic information of other employees. It provides details like Employee name, Employee ID, Department, Position, Private phone number, Skype ID, Language and Technical skills.

3.2 Employee module :

Employee module consists of three tabs in the view providing general information about the employee and an option to edit his private information. The data structure of the employee is similar to admin. Employee also has a search option to view other employee's information.

TOOLS AND TECHNOLOGIES USED

GWT

Both front end Development and backend development is done.

Different GWT widgets and click handlers are used in front end.

By RPC Communication, response from database server is retrieved.

SPRING-JDBC

For database connection, spring JDBC is used.

HTML & CSS

For User Interface design CSS is used.

MY SQL

My SQL is used for Database.

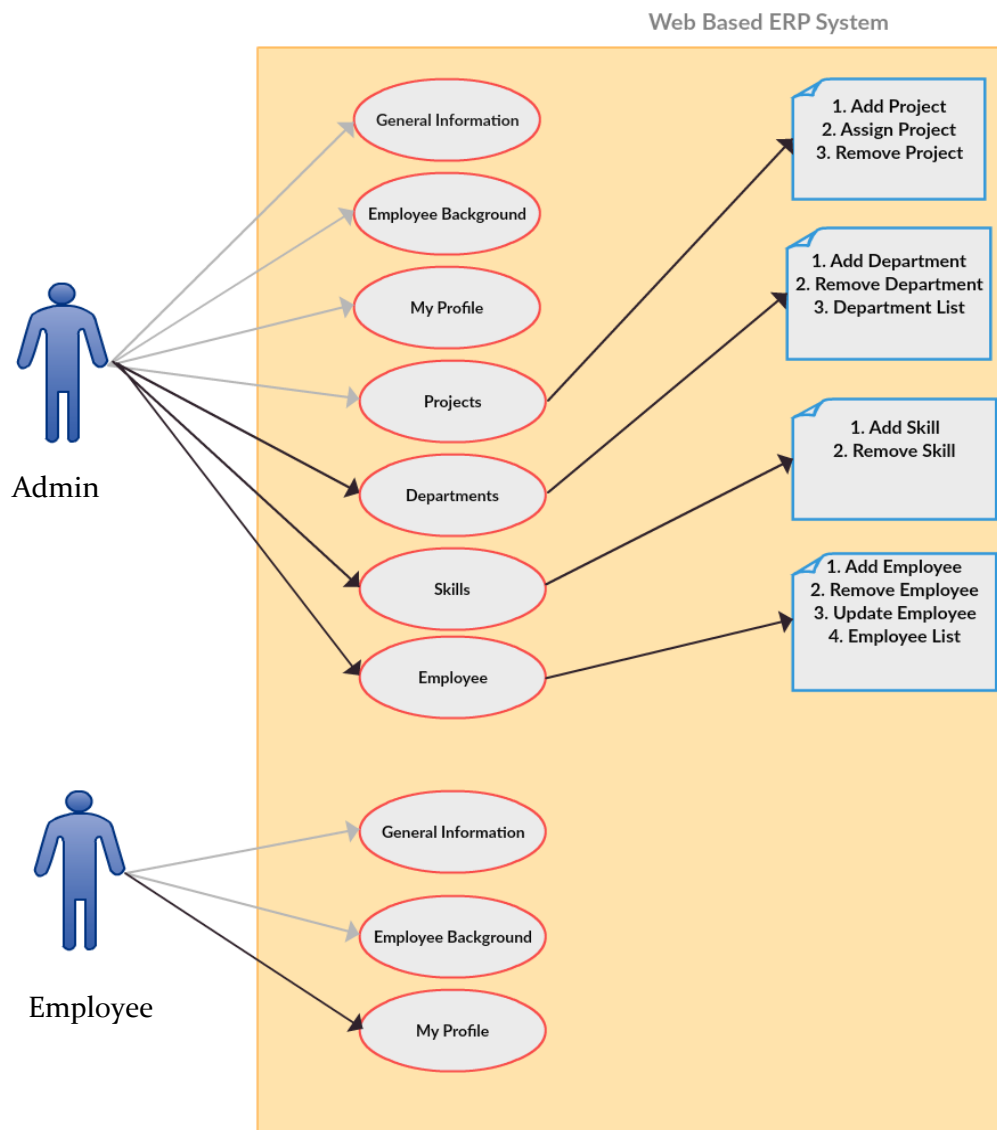
SVN CLIENT

For integrating code and to save different revisions

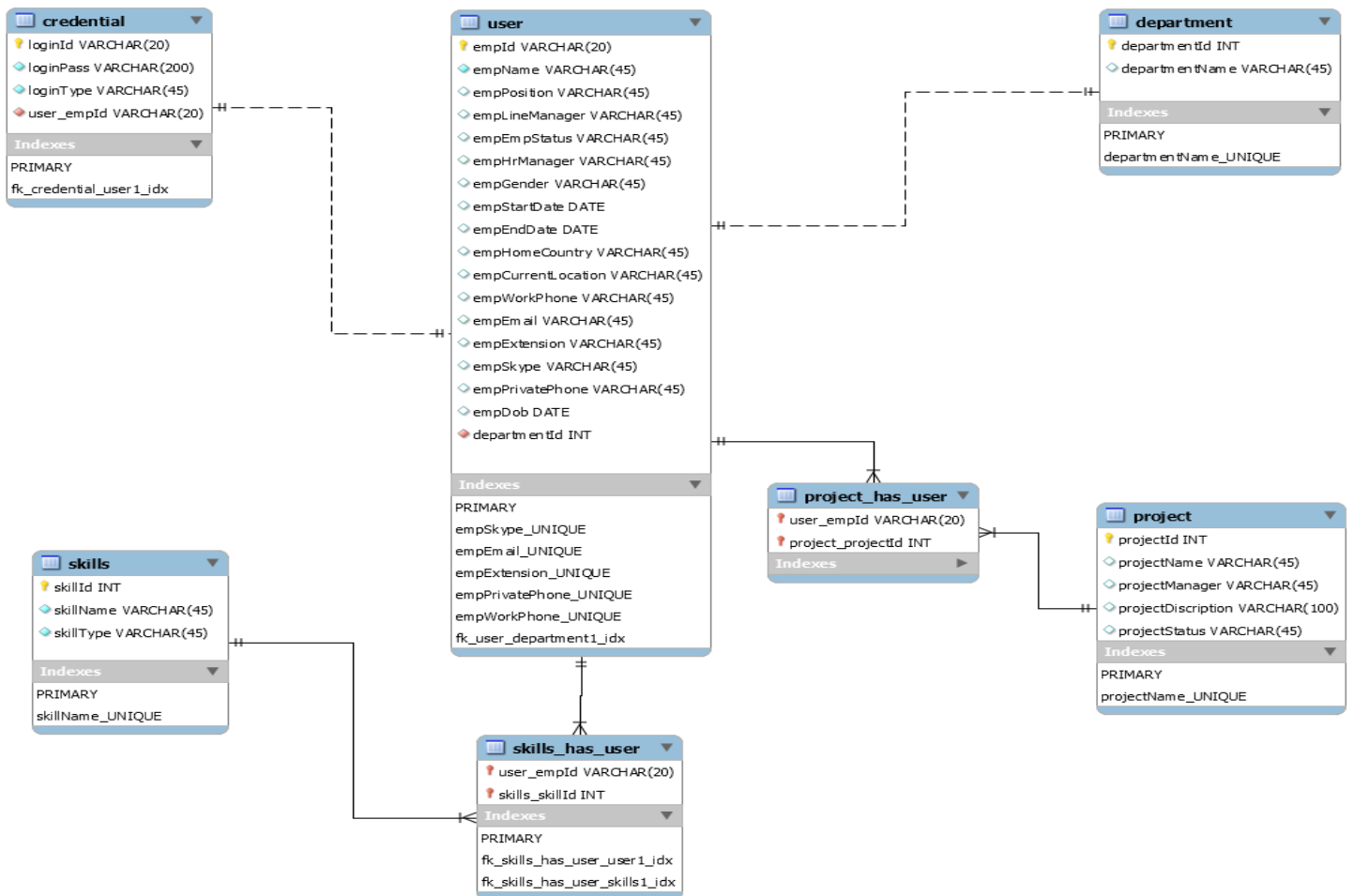
ECLIPSE

Used Eclipse for development of code.

USE CASE DIAGRAM



DATABASE SCHEMA



SCREEN SHOTS

- Login Page

Web Based ERP System

Login ID

Password

LOGIN

▪ Admin Page

Admin Page consists of 7 tabs with different information.

1. General Information

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

General Data

Full NameArun Kumar HGenderMaleHR ManagerNisha Thamban

PositionSoftware EngineerLine ManagerDmitriy LisinStart Date2015-06-13

DepartmentBSS ModernizationExperience1 year 3 months 11 daysEmployment StatusFull Time

Location

Home CountryIndiaCurrent LocationBangalore

Contact Information

Work Phone8049352500Email IDarun.h@netcracker.com

Extension35145Skypearuh:0987Edit

Private Cell Phone9008767232Edit

2. Employee Background

Web Based ERP System

[Logout](#)

General Information	Employee Background	My Profile	Departments	Skills	Projects	Employee
---------------------	---------------------	------------	-------------	--------	----------	----------

Employee Background

Home Office

Bangalore

Department Name

BSS Modernization

Position

Software Engineer

Experience

1 year 3 months 11 days

Line Manager

Dmitriy Lisin

Job Role

Admin

Skills

Language Skills

Hindi, English,

Add

Programming Skills

Java,

Add

3. My Profile

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Profile

Full Name

Arun Kumar H

Department Name

BSS Modernization

Position

Software Engineer

Employee ID

aruh0616

Project History

Project Name	Project Manager	Project Status	Project Description
Employee Servlet Database	H.G. Rahul	Completed	Assignment type : Project to be completed within 7 days
Web Based ERP System	Alok Srivastava	Not Completed	ERP system for a Company

4. **Department:** Admin can add new department, remove existing department and view the list of existing department.

4.1. Add Department:

The screenshot displays a web application interface for a 'Web Based ERP System'. At the top, there is a header bar with the system name on the left, a search input field in the center, and a 'Logout' link on the right. Below the header is a navigation menu with several tabs: 'General Information', 'Employee Background', 'My Profile', 'Departments' (which is currently selected), 'Skills', 'Projects', and 'Employee'. The main content area is divided into three sub-sections: 'Add Department', 'Remove Department', and 'Department List'. The 'Add Department' section is highlighted with a red border and contains a form with a 'Department Name' label, a text input field, and an 'Add' button.

4.2. Remove Department:

Web Based ERP System

[Logout](#)

General Information

Employee Background

My Profile

Departments

Skills

Projects

Employee

Add Department

Remove Department

Department List

Department Name

Human Resource

Remove

4.3. Department List:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add DepartmentRemove DepartmentDepartment List

Accounts AdministrationBSS ModernizationBusiness DeliveryHuman ResourceIT ManagementSecurity DevelopmentSolution DeliveryTraining Department

5. **Skills:** Admin can add new skill, remove existing skills and view the list of skills.

5.1. Add Skill:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add SkillRemove SkillSkills List

Skill Name

Technical

Add

5.2. Remove Skill:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add SkillRemove SkillSkills List

Skill Name

<— Select —>

Remove

5.3. Skills List:

Web Based ERP System

[Logout](#)

General Information

Employee Background

My Profile

Departments

Skills

Projects

Employee

Add Skill

Remove Skill

Skills List

Technical Skills

Java

SQL

PHP

JSP

GWT

Language Skills

Hindi

Russian

English

Kannada

German

6. **Projects:** Admin can add new project, assign the existing projects to the employees working in the organization and update the status of the project when it's completed.

6.1. Add Project:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add ProjectAssignProjectUpdate Project Status

Project Name

Project Manager

Project Description

Add

6.2. Assign Project:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add ProjectAssignProjectUpdate Project Status

Project Name

Car Reservation System ▼

Employee ID

Assign

6.3. Update Project Status:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add ProjectAssignProjectUpdate Project Status

Project Name

Library Management System ▾

Update

7. **Employee:** Admin can add new employee, update the existing employee information and can remove employee from the organization.

7.1. Add employee:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add EmployeeUpdate EmployeeRemove Employee

General Data

Full Name

Employee ID

HR Manager

Ashwini P

Position

Business Analyst

Line Manager

Dmitry Lisin

Start Date

Date of Birth

Gender

Male

Department

Accounts Administration

Employment Status

Full Time

Location

Home Country

Current Location

Bangalore

Contact Information

Work Phone

Email ID

Extension

Skype

Private Cell Phone

Credentials

Job Role

Admin

Password

Add

7.2. Update Employee:

Web Based ERP System

SearchLogout

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add EmployeeUpdate EmployeeRemove Employee

Employee IdEnter Employee IDGet Info

General Data

Full NameHR ManagerPosition

DepartmentLine ManagerEmployment Status

Location

Current Location

Contact Information

Work Phone

Extension

Credentials

Job RolePassword

Update

7.3. Remove Employee:

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add EmployeeUpdate EmployeeRemove Employee

Employee Id

Enter Employee ID

End Date

Remove

- **Search option:** This option is provided for both Admin and Employee of the organization to search for different employees through employee ID to know some basic information about them.

Web Based ERP System

alok0616Logout

General InformationEmployee BackgroundMy ProfileDepartmentsSkillsProjectsEmployee

Add ProjectAssignProjectUpdate Project Status

Project Name
Project Manager
Project Description

Add

Employee Name
Department
Private Phone
Language Skills

Alok Srivastava
BSS Modernization
9887656332

Employee ID
Position
Skype ID
Technical Skills

alok0616
Senior Software Engineer
alokcool234

Close

- **Notification:** Notification is made at all instances with Popup panel.

Web Based ERP System

[Logout](#)

General Information

Employee Background

My Profile

Departments

Skills

Projects

Employee

General Data

Full Name

Arun Kumar H

Gender

Male

HR

Position

Jr. Developer

Line Manager

Dmitriy Lisin

Star

Department

BSS Modernization

Experience

1 year 3 months 20 days

Emp

Are you Sure? Do you want to Logout

Yes

No

Location

Home Country

India

Current Location

London

Contact Information

Work Phone

8049352500

Email ID

arun.h@netcracker.com

■ Employee Page

Employee Page consists of 3 tabs which focus on providing employee information and an option to modify private information.

Web Based ERP System

[Logout](#)

General InformationEmployee BackgroundMy Profile

Profile

Full Name

Shwetha

Department Name

BSS Modernization

Position

Jr. Developer

Employee ID

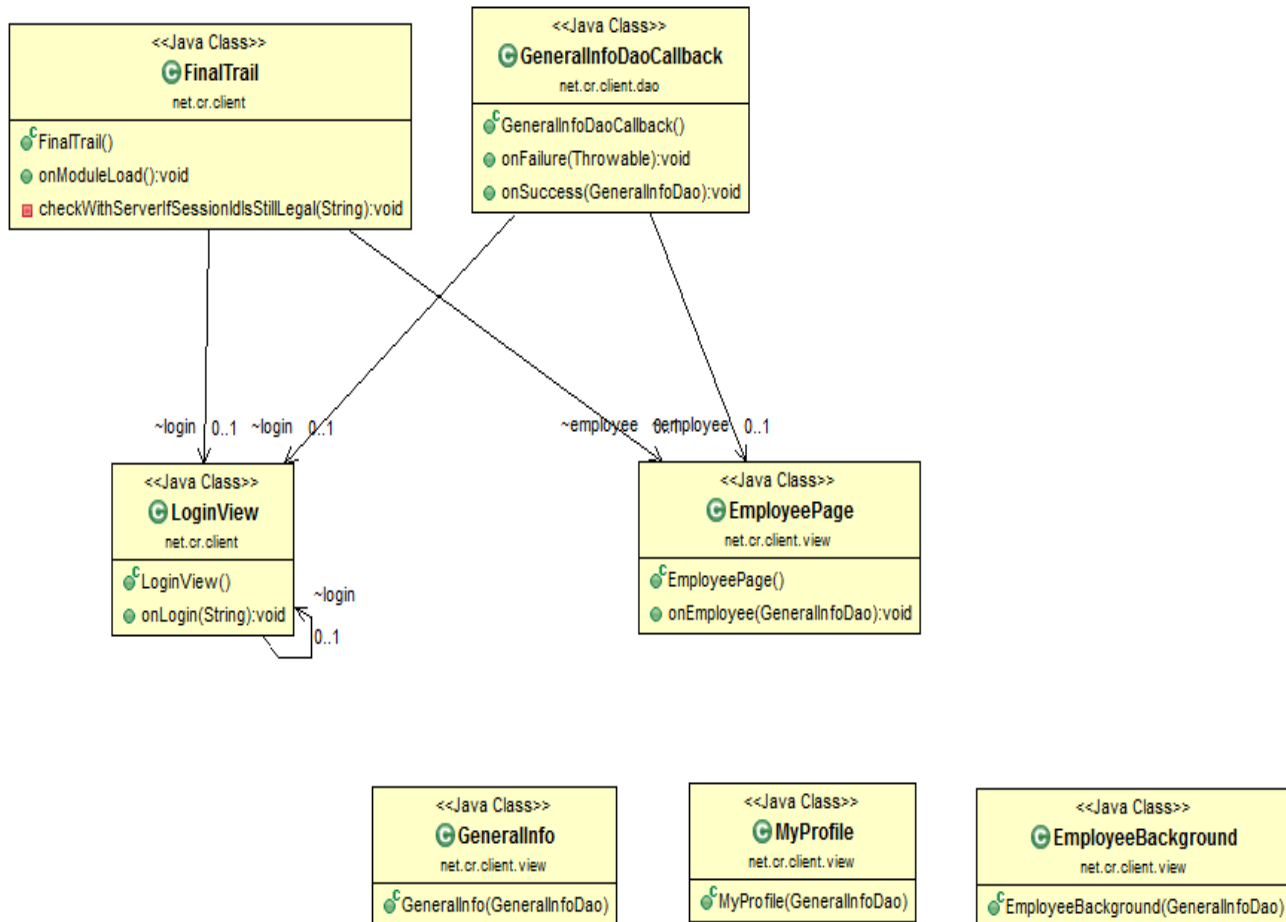
shwe0616

Project History

Project Name	Project Manager	Project Status	Project Description
Not assigned	Not assigned	Not assigned	Not assigned

CLASS DIAGRAM

Employee Class diagram:



Admin Class diagram:

