Object Oriented Analysis And Design Assignment

Case Study
On
OPEN INFORMATION SYSTEM

Submitted by,

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Introduction:-

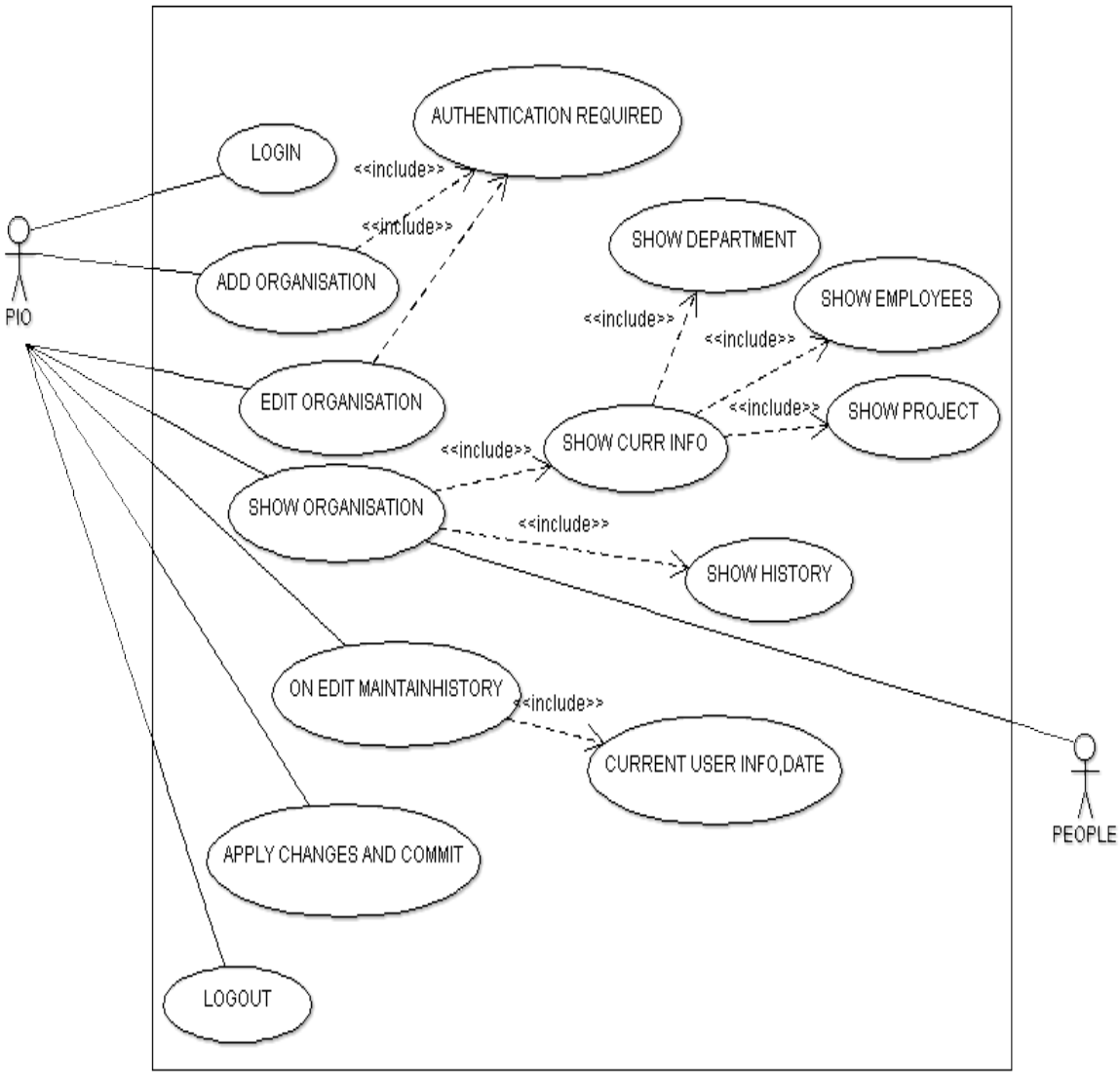
Open Information is a system that aims in making the information of an organization public so that general people who are interested in knowing this information can get it easily. Since RTI Act 2005 has passed this circular but this is not applicable in many organization, So this system focus mainly on Public Information Officer(PIO) part who is concern in maintaining the records of every Department,Employee,Project,Budget associated with a project, Powers and duties associated with a designation etc so that if any general people asked about any Information then he can provide it easily.This system even maintain the history of employee, phone,designation so that it can provide the past information to people if they asked for it.

Submitted By: Manas Dutta, Ankush Jindal, Yogesh Deshmukh

1. Use Cases

Use cases describe the functionality of the system from the user's point of view. The User may be a person or another machine. Each use case is a different way to use the System and the completion of each use case produce a different result. In our system There are six different use cases.

DIAGRAM 1.1:-ADD ORGANISAION , EDIT ORGANISATION,SHOW ORGANTION DETAILS.



METHOD of USECASE 1.1:-

1. **LOGIN**:-

   Before changing any organization details, PIO must login.

   Only PIO are allowed to add and edit the organization details.

2. **ADD ORGANISATION**:-

   Before adding the organization, PIO must log in.

   The program check's whether PIO is authorized to add organization or not.

   After filling up the form of "add organization form" software check's whether given organization is already present or not.

   PIO assign employee to any one of department of organization.

   If organization already exists then system pop up the message "organization already exist", after getting this message, PIO alter the data and press submit button and data enters into database.

3. **EDIT ORGANIZATION:-**

   Before editing the organization, PIO must log in.

   The program check's whether PIO is authorized to edit organization or not.

   PIO select's the organization, which is to be edited.

   After editing the data of form "edit organization form" software check's whether given organization is already exist and complete validation is done.

   Before submitting all validation are checked.

   Data get updated to database.

4. **SHOW ORGANIZATION INFORMATION:-**

   This is one of most important function of our project, i.e. to bring Transparence between government workers and other people.

   Any people can view the organization information; people can view all projects on which that employee had work.

   People can view in which department the employee is working.

   People can view all current as well as previous year's employee information, department information, and project information.

5. **MAINTAIN HISTORY OF ORGANIZATION ON EDIT:-**

   On every change made to the organization, previous data of organization is retain in another table. And information of PIO, how as updated that organization is also maintained.

DAIGRAM 1.2:- Add, Edit, Show Department detail

METHOD of USECASE 1.2:-

1. **LOGIN:-**

   Before changing any department details, PIO must login.

   Only PIO are allowed to add and edit the department details.

2. **ADD DEPARTMENT:-**

   Before adding the department, PIO must log in.

   The program check's whether PIO is authorized to add department or not.

   After filling up the form of "add department form" software check's whether given department is already present or not.

   If department already exists then system pop up the message "department already exists", after getting this message, PIO alter the data and press submit button and data enters into database.

3. **EDIT DEPARTMENT:-**

   Before editing the department, PIO must log in.

   The program check's whether PIO is authorized to edit department or not.

   PIO select's the department, which is to be edited.

   After editing the data of form "edit department form" software check's whether given department is already exist and complete validation is done.

   Before submitting all validation are checked.

   Data get updated to database.

4. **SHOW DEPARTMENT INFORMATION:-**

   This is one of most important function of our project, i.e. to bring Transparence between government workers and other people.

   Any people can view the department information, what all project are going under each department, how many employees are working under each project.

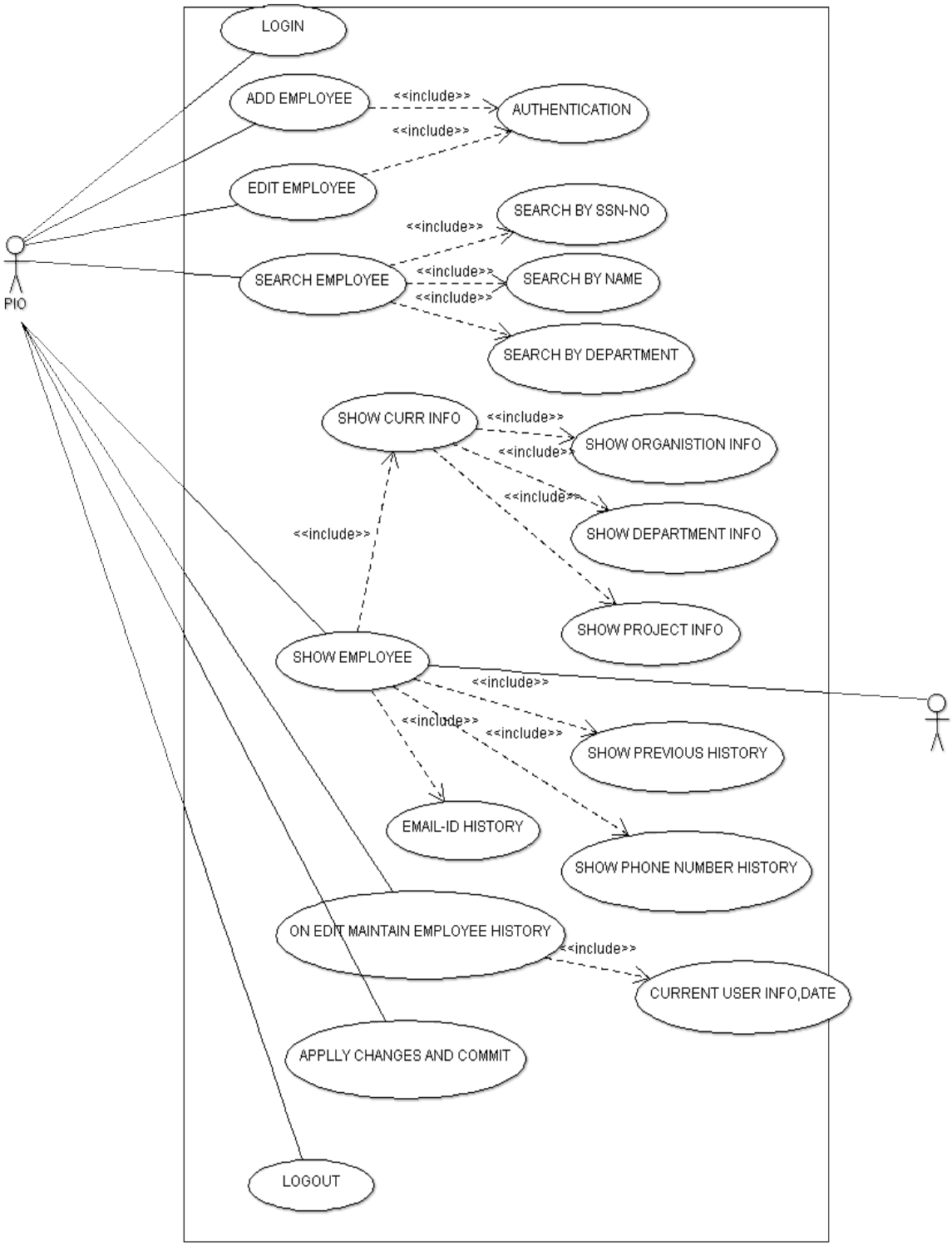
   People can view all current as well as previous year's project information, department information, and employee information.

5. **MAINTAIN HISTORY OF DEPARTMENT ON EDIT:-**

   On every change made to the department, previous data of department is retain in another table.

   And information of PIO how as updated that department is also maintained.

DAIGRAM 1.3:- Add, Edit, Show Employee detail



METHOD of USECASE 1.3:-

1. **LOGIN:-**

   Before changing any employee details, PIO must login.

   Only PIO are allowed to add and edit the employee details.

2. **ADD EMPLOYEE:-**

   Before adding the employee, PIO must log in.

   The program check's whether PIO is authorized to add employee or not.

   After filling up the form of "add employee form" software check's whether given employee is already present or not.

   PIO assign employee to any one of department.

   PIO assign employee to any one of project.

   If employee already exists then system pop up the message "employee already working in some other department", after getting this message, PIO alter the data and press submit button and data enters into database.

3. **EDIT EMPLOYEE:-**

   Before editing the employee, PIO must log in.

   The program check's whether PIO is authorized to edit employee or not.

   PIO select's the employee, which is to be edited.

   After editing the data of form "edit department form" software check's whether given employee is already exist and complete validation is done.

   Before submitting all validation are checked.

   Data get updated to database.

4. **SHOW EMPLOYEE INFORMATION:-**

   This is one of most importantMETHOD of USECASE 1.2:-

5. **LOGIN:-**

   Before changing any employee details, PIO must login.

   Only PIO are allowed to add and edit the employee details.

6. **ADD EMPLOYEE:-**

   Before adding the employee, PIO must log in.

   The program check's whether PIO is authorized to add employee or not.

After filling up the form of “add employee form” software check’s whether given employee is already present or not.

PIO assign employee to any one of department.

PIO assign employee to any one of project.

If employee already exists then system pop up the message “employee already working in some other department”, after getting this message, PIO alter the data and press submit button and data enters into database.

7. **EDIT EMPLOYEE:-**

Before editing the employee, PIO must log in.

The program check’s whether PIO is authorized to edit employee or not.

PIO select’s the employee, which is to be edited.

After editing the data of form “edit department form” software check’s whether given employee is already exist and complete validation is done.

Before submitting all validation are checked.

Data get updated to database.

8. **SHOW EMPLOYEE INFORMATION:-**

This is one of most important function of our project, i.e. to bring Transparence between government workers and other people.

Any people can view the employee information; people can view all projects on which that employee had work.

People can view in which department the employee is working.

People can view all current as well as previous year’s employee information, department information, and project information.

9. **MAINTAIN HISTORY OF EMPLOYEE ON EDIT:-**

On every change made to the employee, previous data of employee is retain in another table.

And information of PIO, how as updated that employee is also maintained.

The function of our project, i.e. to bring Transparence between government workers and other people.

Any people can view the employee information; people can view all projects on which that

employee had work.

People can view in which department the employee is working.

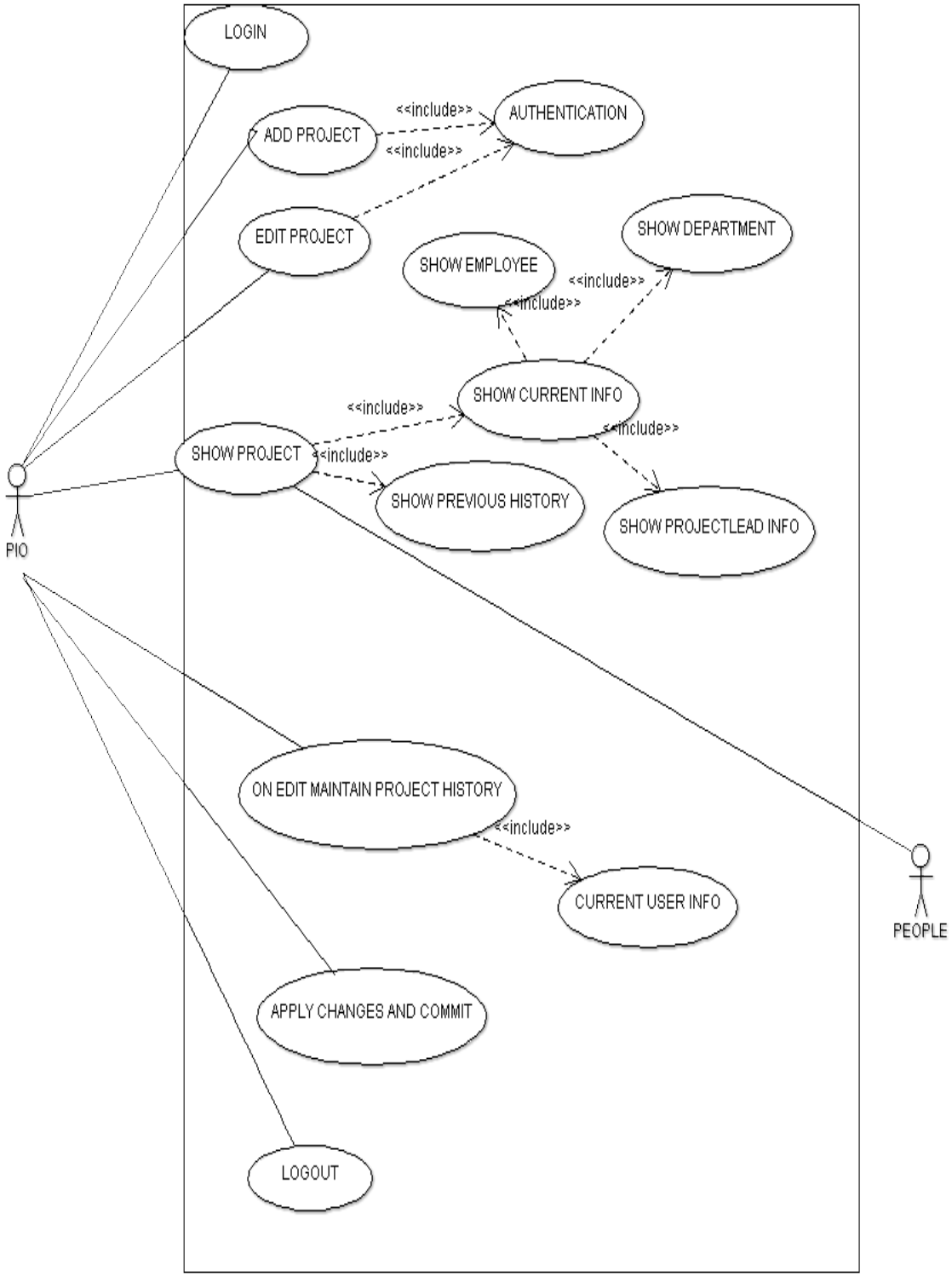
People can view all current as well as previous year’s employee information, department information, and project information.

10. MAINTAIN HISTORY OF EMPLOYEE ON EDIT:-

On every change made to the employee, previous data of employee is retain in another table.

And information of PIO, how as updated that employee is also maintained.

DIAGRAM 1.4:-ADD PROJECT, EDIT PROJECT, SHOW PROJECT DETAILS.



METHOD of USECASE 1.4:-

1. **LOGIN:-**

   Before changing any project details, PIO must login.

   Only PIO are allowed to add and edit the project details.

2. **ADD PROJECT:-**

   Before adding the project, PIO must log in.

   The program check's whether PIO is authorized to add project or not.

   After filling up the form of "add project form" software check's whether given project is already present or not.

   PIO assign employee to project.

   If project already exists then system pop up the message "project already exist", after getting this message, PIO alter the data and press submit button and data enters into database.

3. **EDIT PROJECT:-**

   Before editing the project, PIO must log in.

   The program check's whether PIO is authorized to edit project or not.

   PIO select's the project, which is to be edited.

   After editing the data of form "edit project form" software check's whether given project is already exist and complete validation is done.

   Before submitting all validation are checked.

   Data get updated to database.

4. **SHOW PROJECT INFORMATION:-**

   This is one of most important function of our project, i.e. to bring Transparence between government workers and other people.

   Any people can view the organization information; people can view all projects on which that employee had work.

   People can view in which department the employee is working.

   People can view all current as well as previous year's employee information, department information, and project information.

5. **MAINTAIN HISTORY OF PROJECT ON EDIT:-**

   On every change made to the project, previous data of project is retain in another table.

   And information of PIO, how as updated that project is also maintained.

2. CLASS DIAGRAM

Class diagrams are arguably the most used UML diagram type. It is the main building block of any object oriented solution. It shows the classes in a system, attributes and operations of each class and the relationship between each class. In most modeling tools a class has three parts, name at the top, attributes in the middle and operations or methods at the bottom. In large systems with many classes related classes are grouped together to to create class diagrams.

In given class diagram for every Master class an associative class is created to maintain the history of class.

E.g. For department class we have created department_history class; which keep all details of previous data of department class and it also contain the PIO number of how had made the changes. Because of that it easy to track all change made to Master tables, and if want to recover to previous data it can be done.

History class is creating for all Master tables such as:-

1. Organization -> Organization_History.
2. Employee -> Employee_History.
3. Project -> Project_History.
4. Department -> Department_History.

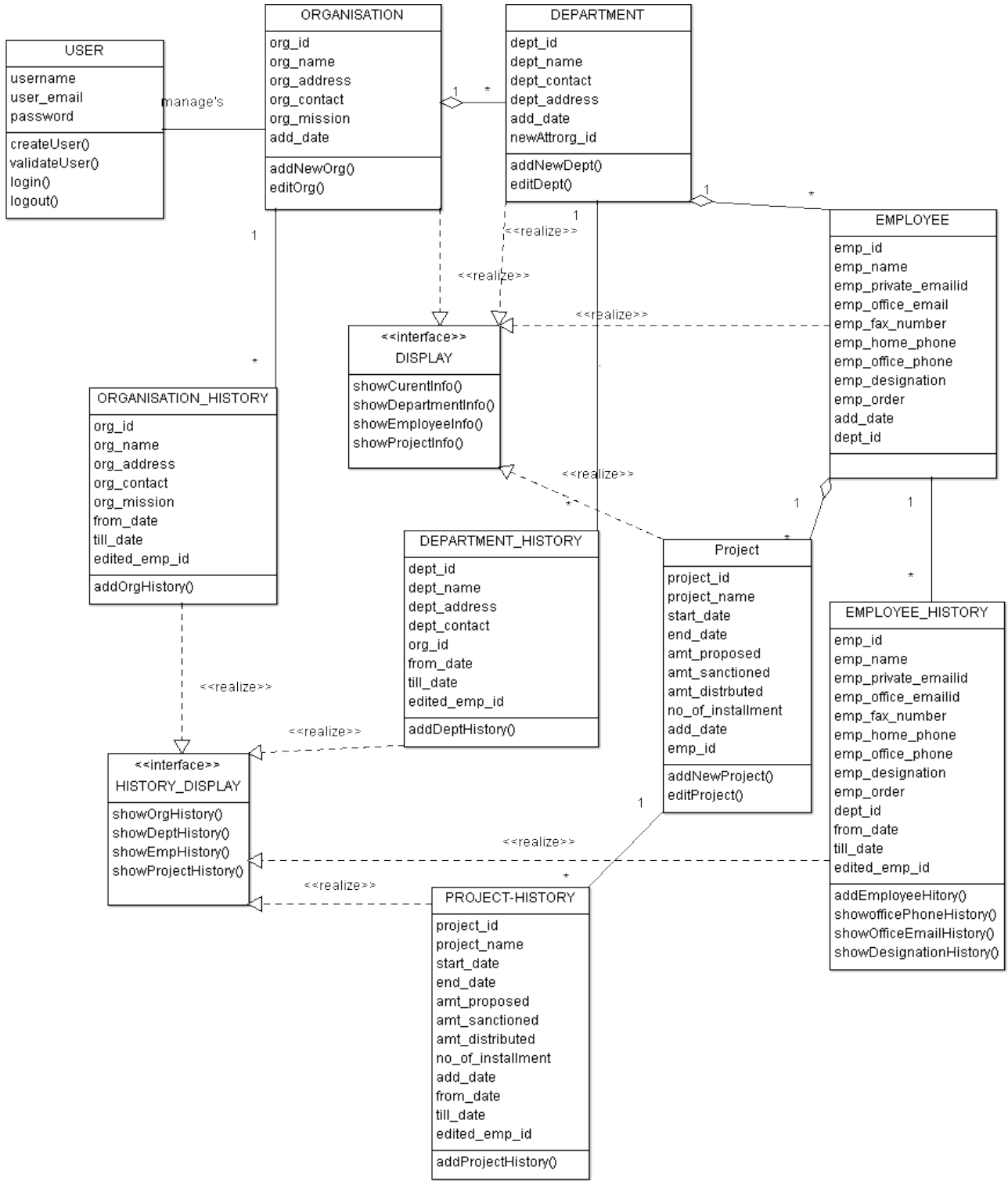
In below class diagram all common method for display current information is kept in “DISPLAY INTERFACE”.

Employee class, department class, project class, user class, organization class implement this method to show the information.

And to display past history information, all common method to display history are kept in “DISPLAY_HISTORY INTERFACE”.

Employee_History class, department_history class, project_history class, user_history class, organization_history class implements this interface.

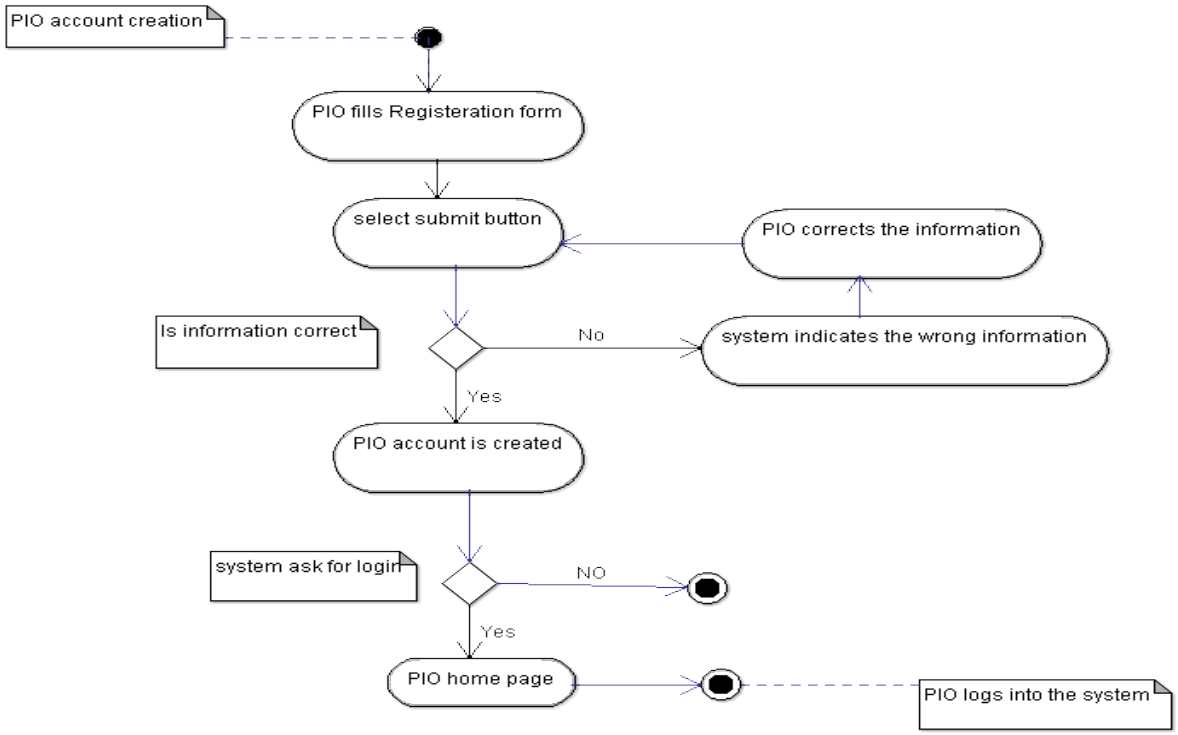
DIAGRAM 2.1:- Class Diagram of the project Open Informatiom



3. ACTIVITY DAIGRAM

Activity diagrams represent workflows in a graphical way. The can be used to describe business workflow or the operational workflow of any component in a system. Sometime activity diagrams are used as an alternative to State machine diagrams.

DIAGRAM 3.1:- PIO REGISTERATION



Explanation of diagram nos. 3.1(Registration of PIO):-

Step 1: PIO select the option of registration.

Step2: PIO fill up the registration form.

Step3: PIO enter the submit button.

Step 4: System checks whether the given information is correct and valid, if yes go to step 5,

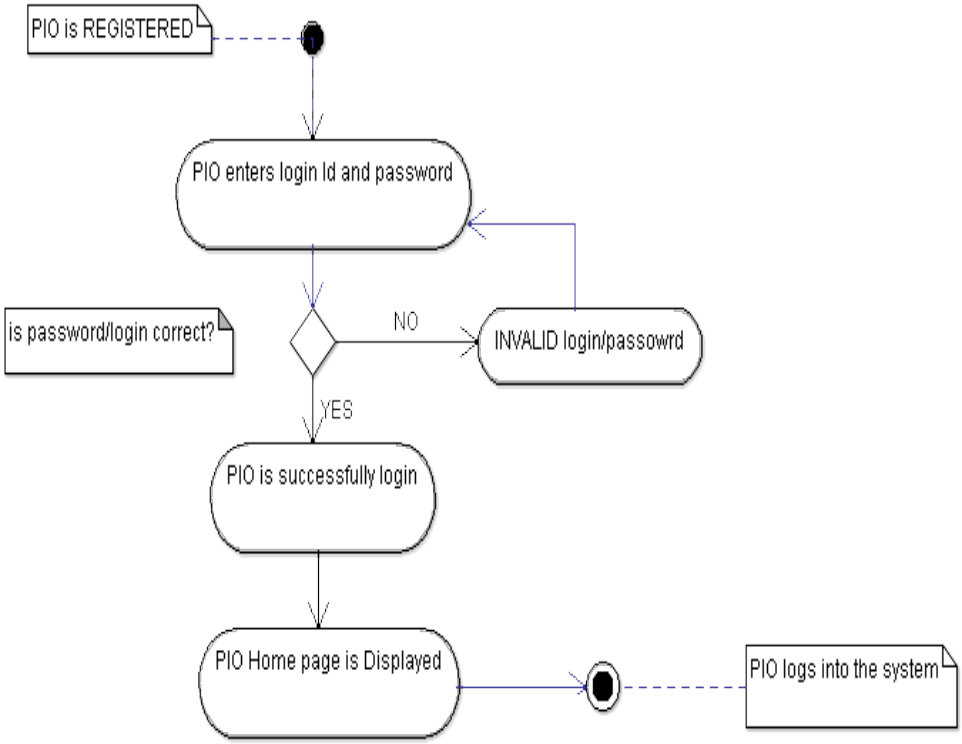
Else PIO is shown message “Invalid data” and redirected to step 2.

Step 5: PIO account is created.

Step 6: After PIO account is created, PIO is asked for login, if PIO login; Home page is shown

Else end.

DIAGRAM 3.2:- PIO LOGIN



Explanation of diagram nos. 3.2(Login of PIO):-

Step 1: Start.

Step 2: PIO enters the login id and password.

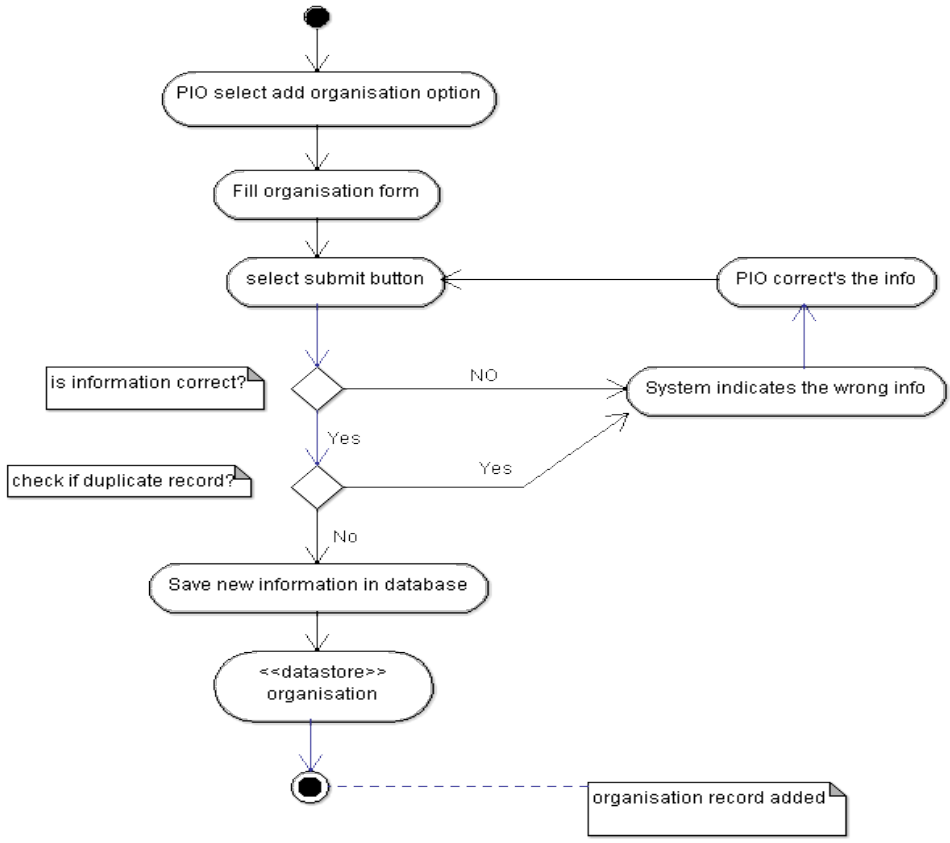
Step 3: System checks whether given login id and password entered are correct or not; if correct go to

Step 4 else system prompt the message “Invalid Login” and redirect to step 2.

Step 4: PIO is displayed Home page.

Step 5: End.

DIAGRAM 3.3:- Add Organization



<u>Explanation of diagram nos. 3.3(Add Organization):-</u>

Step 1: Start.

Step 2: PIO select add Organization option.

Step 3: PIO fill up the organization form.

Step 4: PIO select Submit button.

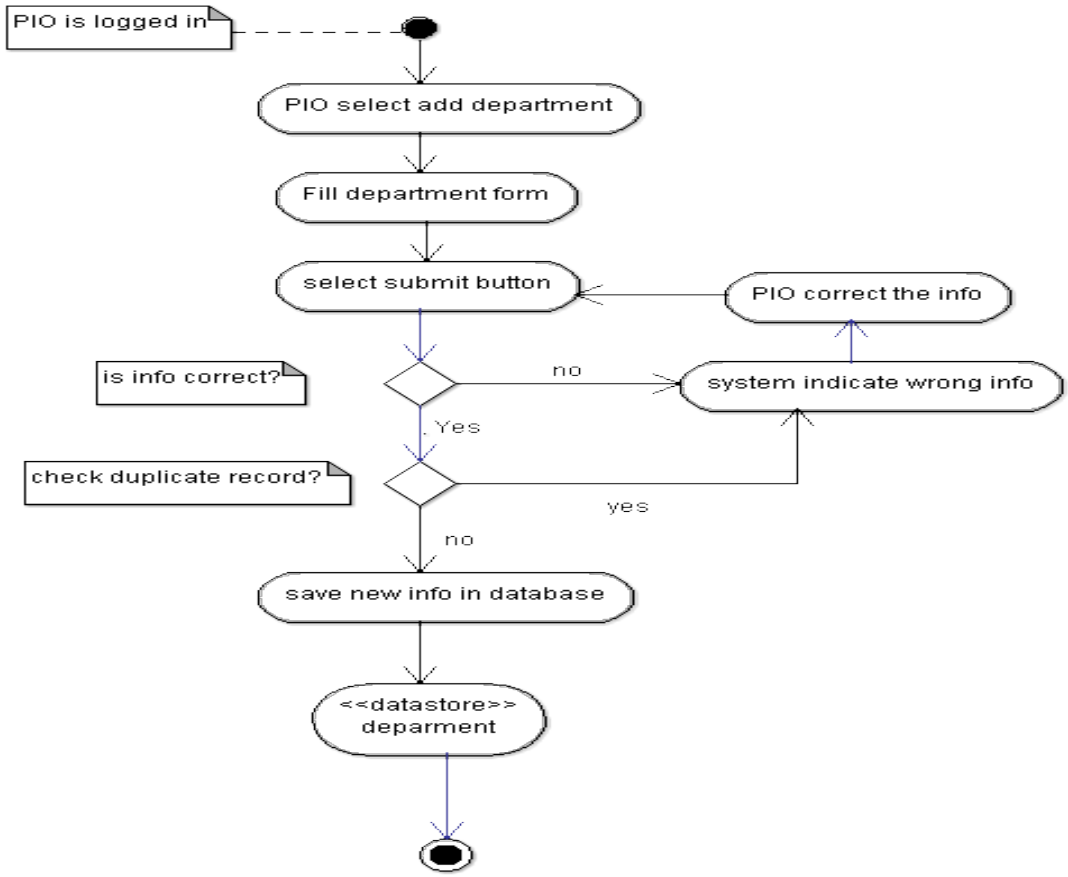
Step 5: System checks whether entered data is valid and correct? , if yes go to step 6 else Go to step 3.

Step 6: System checks whether entered data is duplicate? , if yes go to step 3 else Go to step 7.

Step 7: Data is saved to database.

Step 8: End.

DIAGRAM 3.4:- Add Department.



<u>Explanation of diagram nos. 3.4(Add Department):-</u>

Step 1: Start.

Step 2: PIO select add Department option.

Step 3: PIO fill up the department form.

Step 4: PIO select Submit button.

Step 5: System checks whether entered data is valid and correct? , if yes go to step 6 else

Go to step 3.

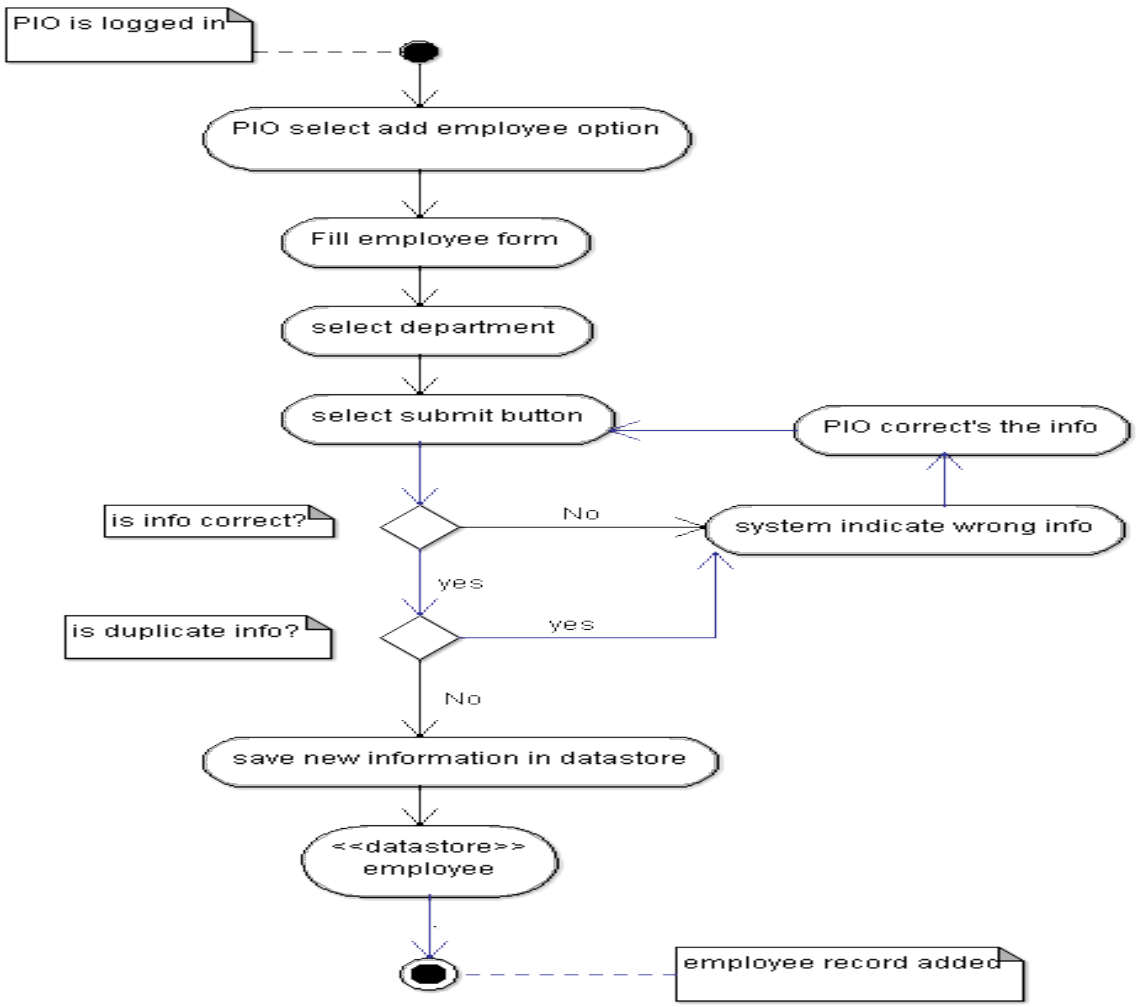
Step 6: System checks whether entered data is duplicate? , if yes go to step 3 else

Go to step 7.

Step 7: Data is saved to database.

Step 8: End.

DIAGRAM 3.5:- Add Employee.



Explanation of diagram nos. 3.5(Add Employee):-

Step 1: Start.

Step 2: PIO select add employee option.

Step 3: PIO fill up the employee form.

Step 4: PIO select Submit button.

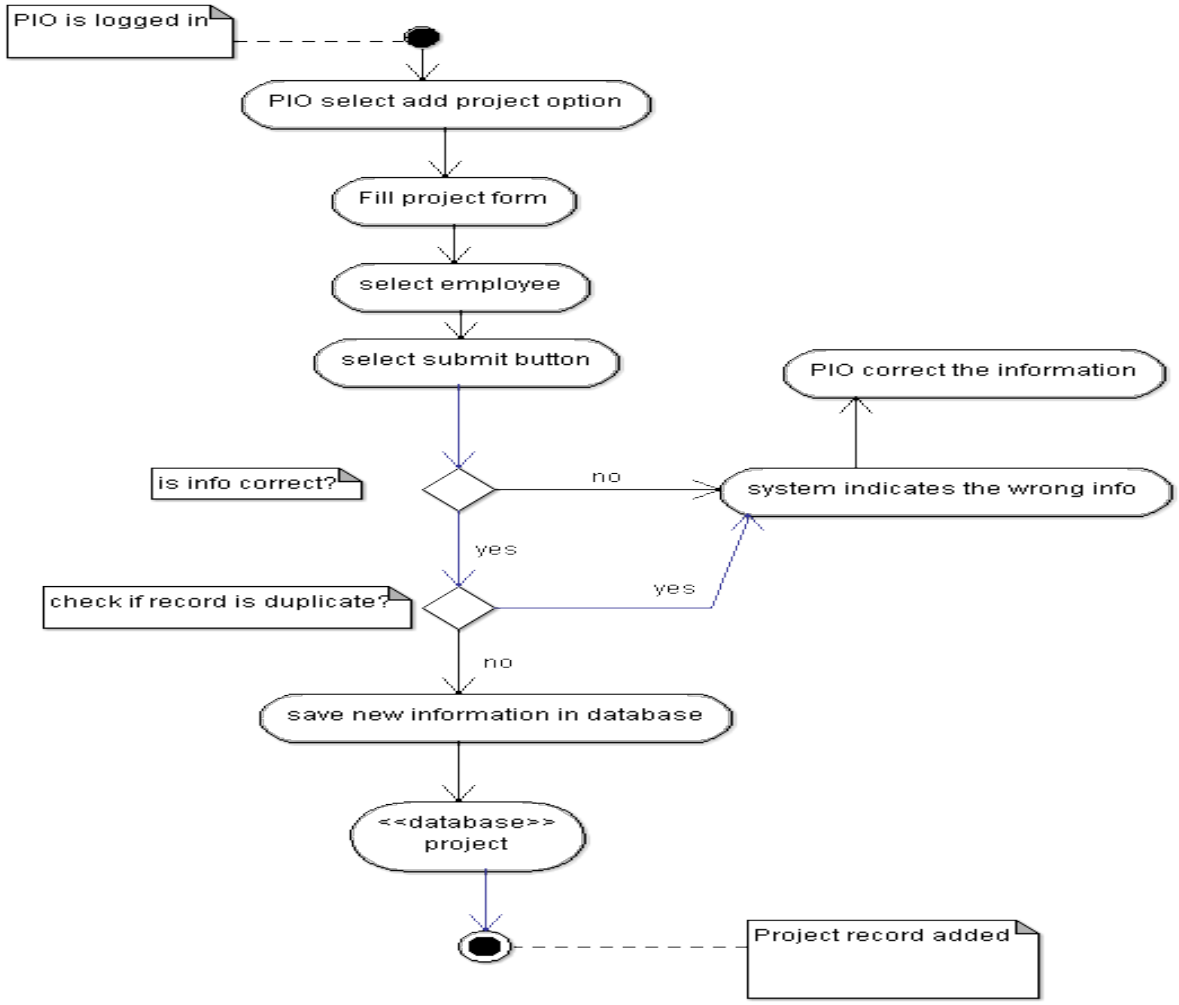
Step 5: System checks whether entered data is valid and correct? , if yes go to step 6 else Go to step 3.

Step 6: System checks whether entered data is duplicate? , if yes go to step 3 else Go to step 7.

Step 7: Data is saved to database.

Step 8: End.

DIAGRAM 3.6:- Add Project.



<u>Explanation of diagram nos. 3.6(Add Project):-</u>

Step 1: Start.

Step 2: PIO select add project option.

Step 3: PIO fill up the project form.

Step 4: PIO select Submit button.

Step 5: System checks whether entered data is valid and correct? , if yes go to step 6 else

Go to step 3.

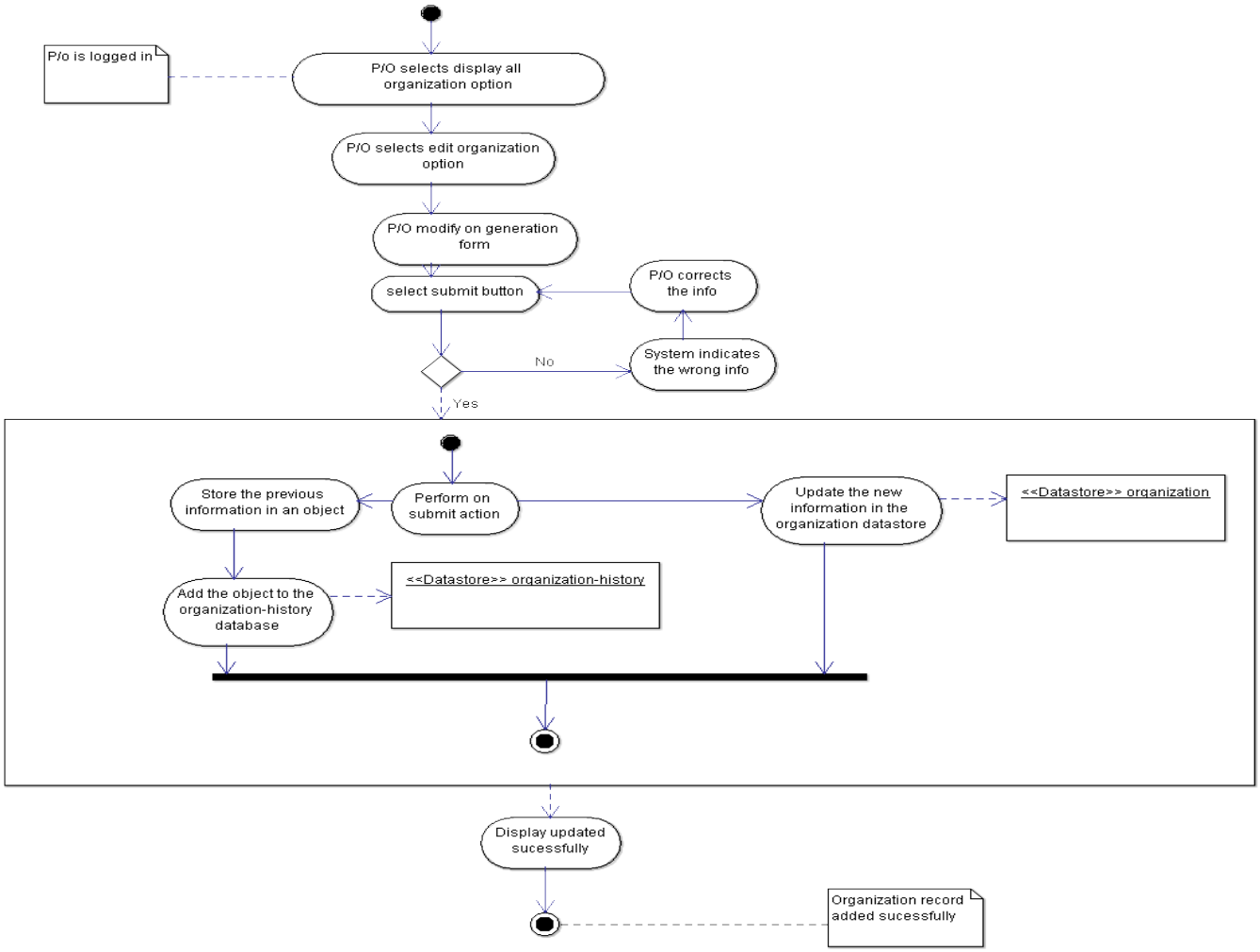
Step 6: System checks whether entered data is duplicate? , if yes go to step 3 else

Go to step 7.

Step 7: Data is saved to database.

Step 8: End.

DIAGRAM NO 3.7 (EDIT ORGANIZATION)



Explanation of diagram nos. 3.7(Add Project):-

STEP 1:Start

STEP 2: PIO selects display all organization option

STEP 3: PIO selects edit organization option.

STEP 4: PIO modify the organization form.

STEP 5: PIO selects submit button.

STEP 6: system checks whether the information is correct or not,if yes then go to step 3 else go to step 6.

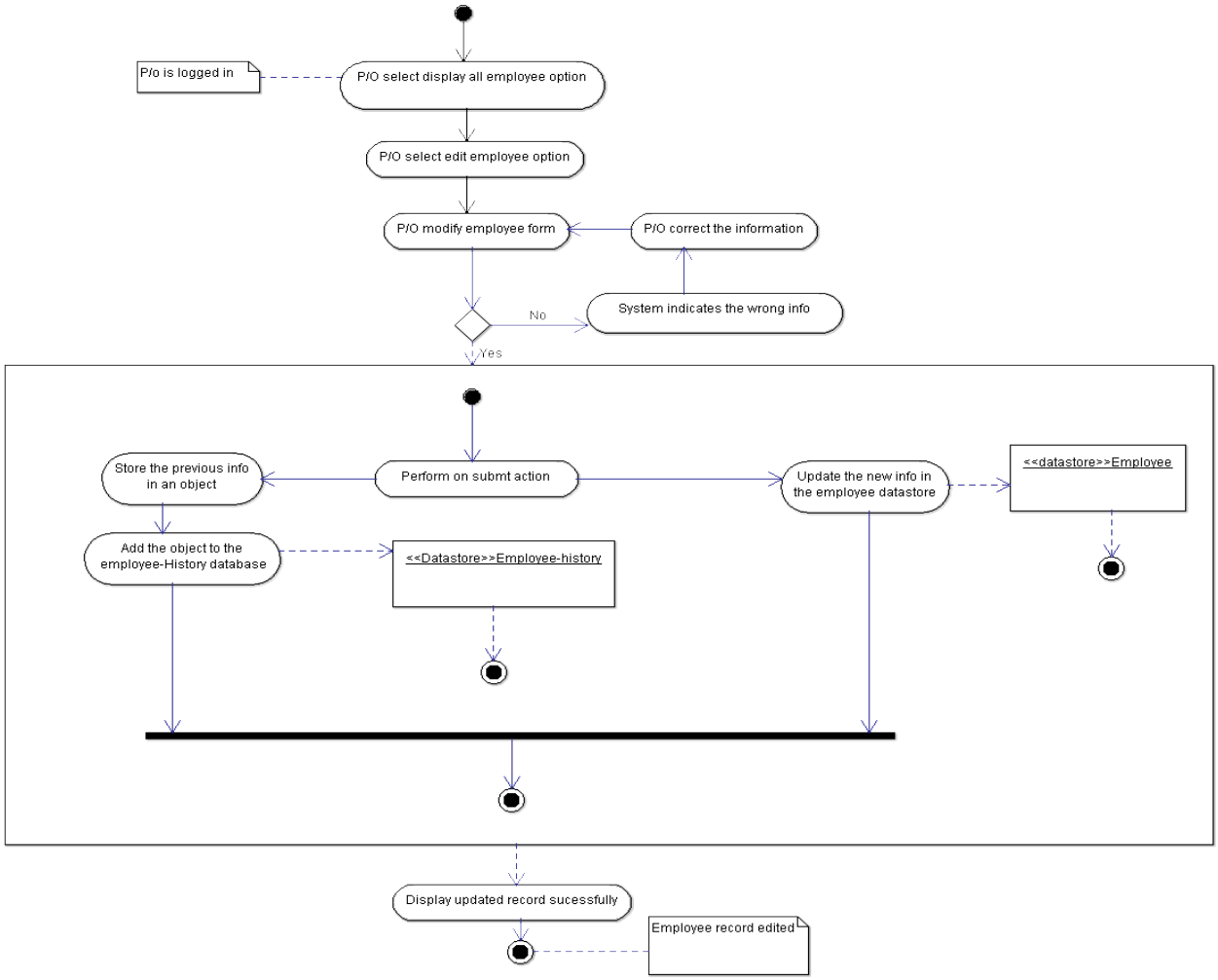
STEP 7: Store the previous information in object and update new info in database

STEP 8: Add object to organization-history database.

STEP 9: Display updates successfully.

STEP 10: End

DIAGRAM NO 3.8:(EDIT EMPLOYEE)



DESCRIPTION OF DIAGRAM NO 3.8(EDIT EMPLOYEE)

STEP 1:Start

STEP 2: PIO selects display all employee option

STEP 3: PIO selects edit employee option.

STEP 4: PIO modify the employee form.

STEP 5: PIO selects submit button.

STEP 6: system checks whether the information is correct or not,if yes then go to step 3 else go to step 6.

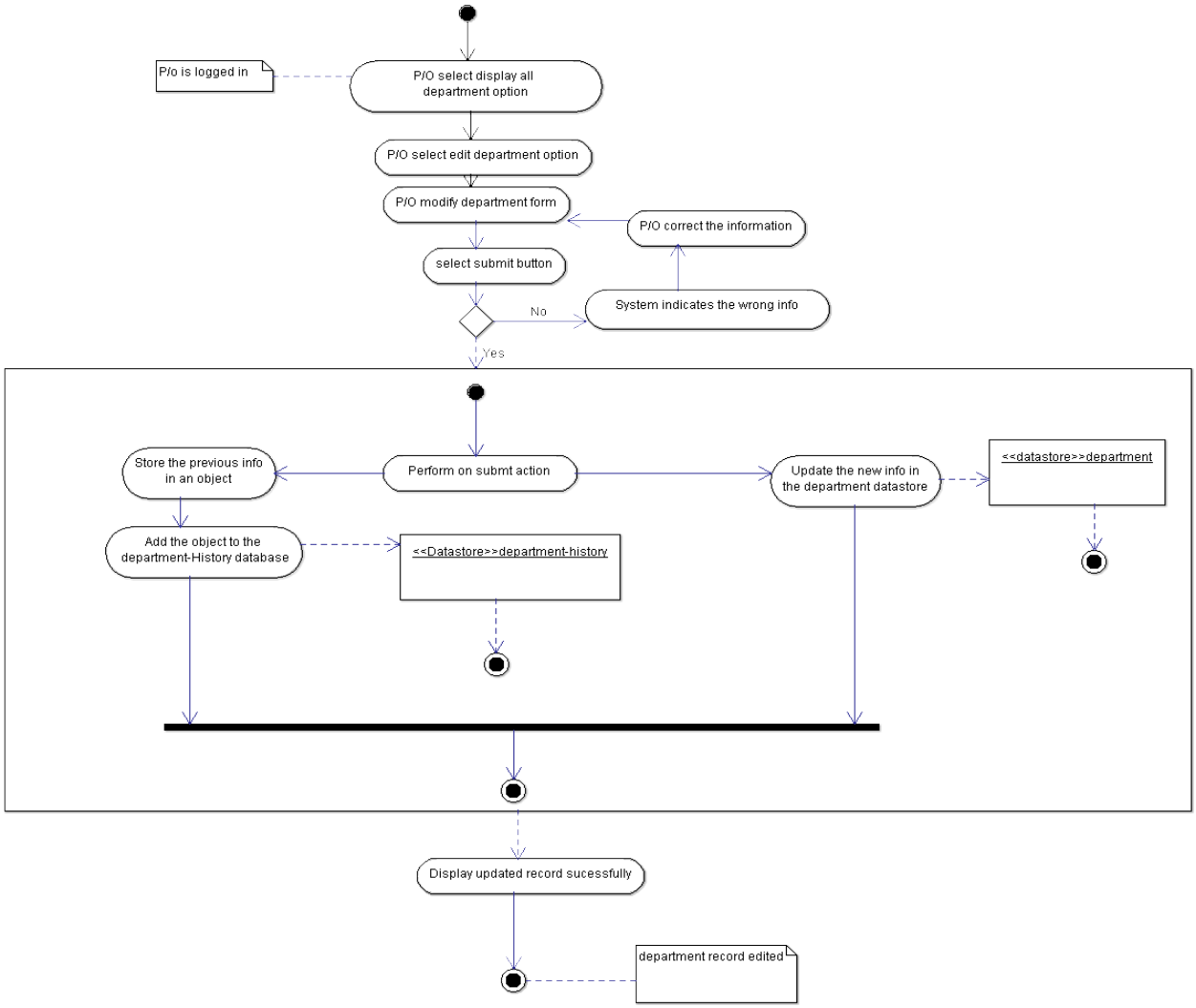
STEP 7: Store the previous information in object and update new info in database

STEP 8: Add object to employee-history database.

STEP 9: Display updates successfully.

STEP 10: End

DIAGRAM NO 3.9 (EDIT DEPARTMENT)



DECSRIPTION OF DIAGRAM 3.9 (EDIT DEPARTMENT)

STEP 1:Start

STEP 2: PIO selects display all Department option.

STEP 3: PIO selects edit Department option.

STEP 4: PIO modify the Department form.

STEP 5: PIO selects submit button.

STEP 6: system checks whether the information is correct or not,if yes then go to step 3 else go to step 6.

STEP 7: Store the previous information in object and update new info in database

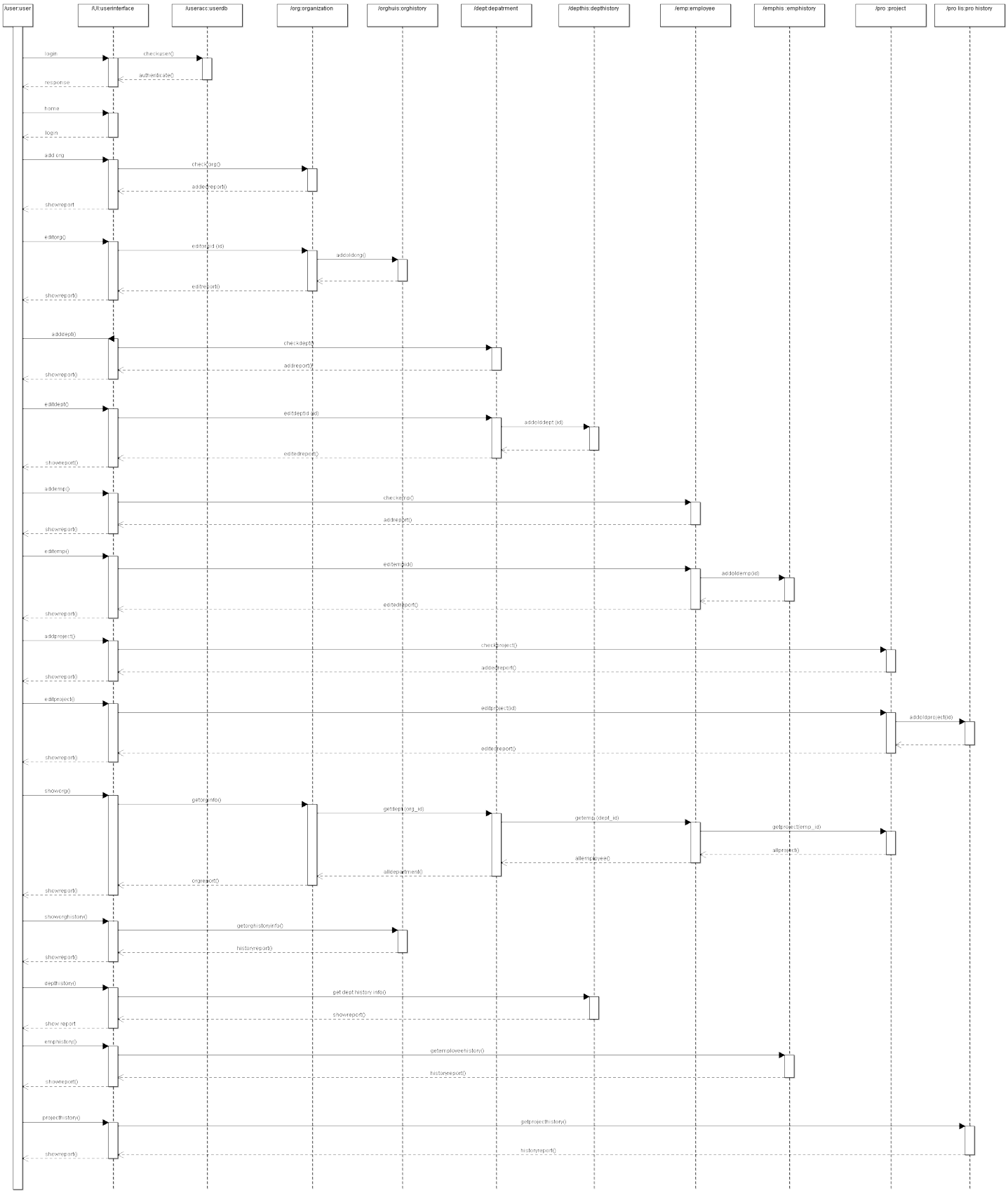
STEP 8: Add object to Department-history database.

STEP 9: Display updates successfully.

STEP 10: End

Open Information UML diagram and explaination

4. **SEQUENCE DIAGRAM:**



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Open Information UML diagram and explaination

EXPLAINATION OF SEQUENCE DIAGRAM:

When user logs in then checkuser() function is called and user is authenticated from userdatabase ,if authentication is successful the he is logged in else login form in showed.
When user selects addorg() then the checkorg() is called from organization database and addedreport() function is called and report is shown to user.
When user selects editorg() then the editorg(ID) is called from organization database and editedreport() function is called and report is shown to user.
When user selects adddept() then the checkdept() is called from department database and addedreport() function is called and report is shown to user.
When user selects editdept() then the editdept() is called from department database and editedreport() function is called and report is shown to user.
When user selects addemp() then the checkemp() is called from employee database and addedreport() function is called and report is shown to user.
When user selects editemp() then the editemp() is called from employee database and editedreport() function is called and report is shown to user.
When user selects addproject() then the checkproject() is called from project database and addedreport() function is called and report is shown to user.
When user selects editproject() then the editdproject() is called from project database and editedreport() function is called and report is shown to user.
When user selects Showorghistory() then the orginfo(),getdept(org_id),getemp(dept_id),getproject(emp_id) is called from organization,department,employee and project database and showreport() function is called and all reports are shown to user.
When user selects showdepthistory() then the getdepthistoryinfo() is called from department database and historyreport() function is called and report is shown to user.
When user selects showemphistory() then the getemphistoryinfo() is called from employee database and historyreport() function is called and report is shown to user.
When user selects showprojecthistory() then the getprojecthistory() is called from project database and historyreport() function is called and report is shown to user.

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5. State diagram.

State diagrams are similar to activity diagrams although notations and usage changes a bit.

They are sometime known as state machine diagram or state chart diagram as well.

These are very useful to describe the behavior of objects that act different according to the state they are at the moment.

Diagram 5.1: Add Employee.

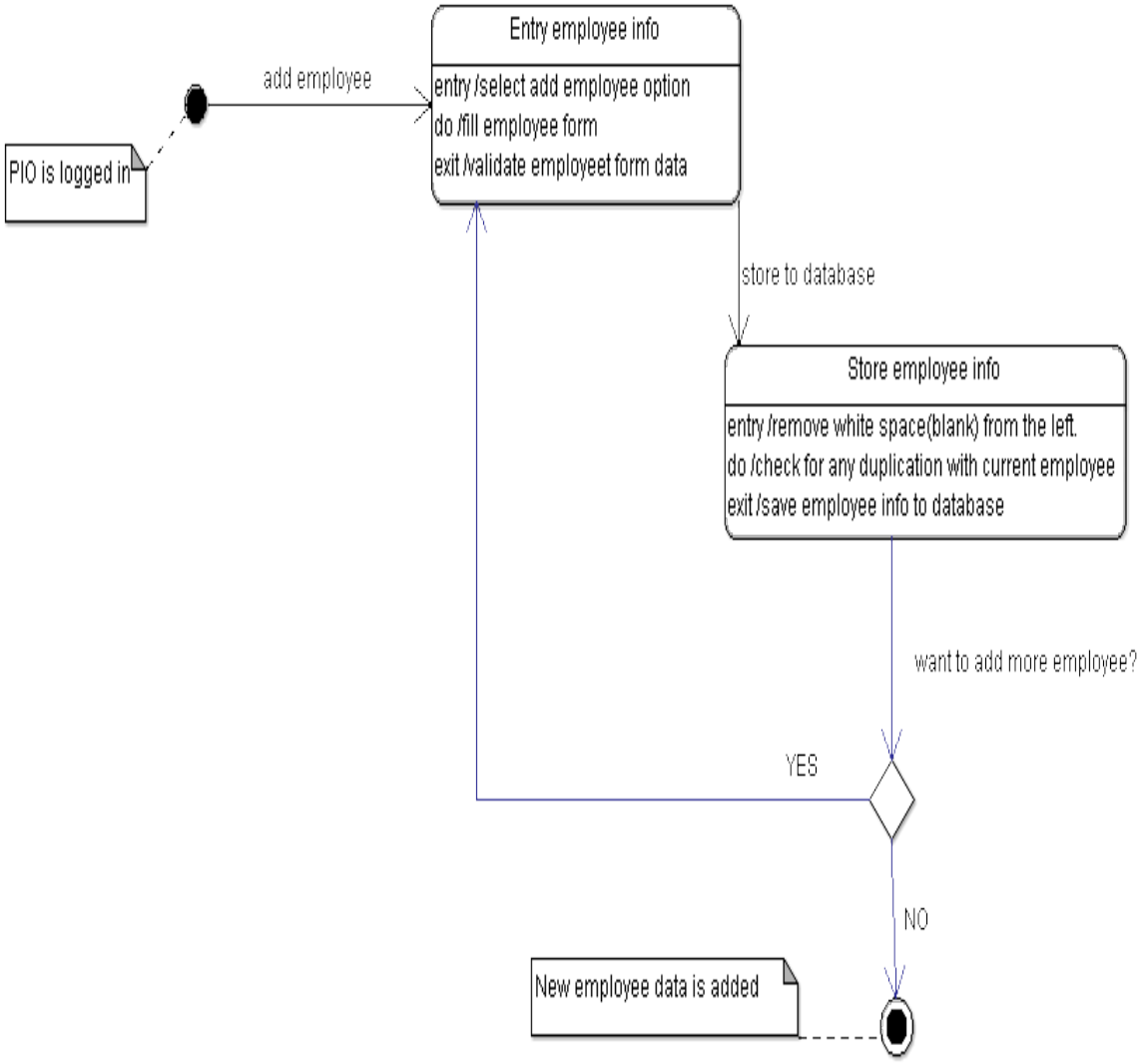


Diagram 5.2: Add Organization

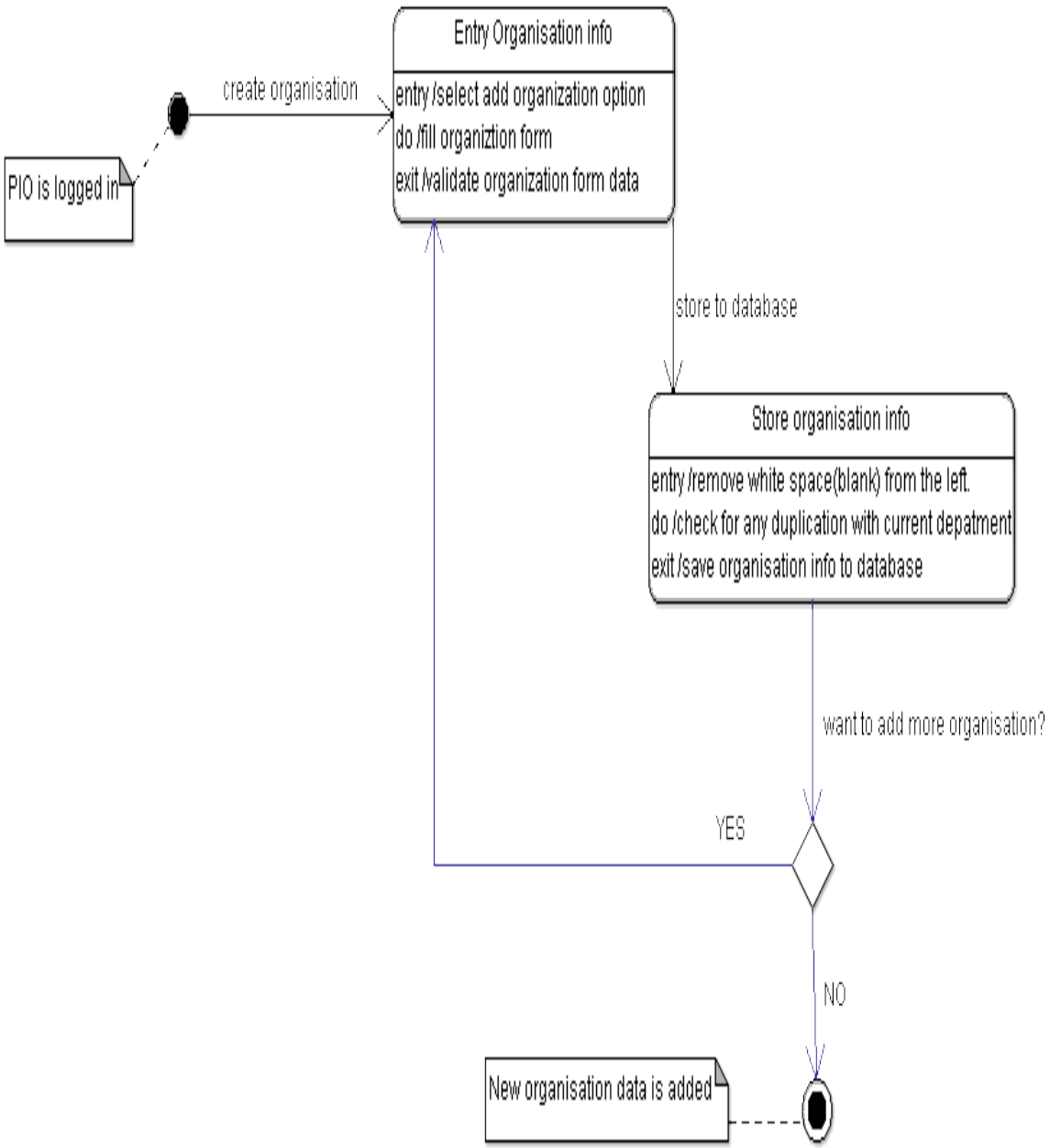


Diagram 5.3: Add Department.

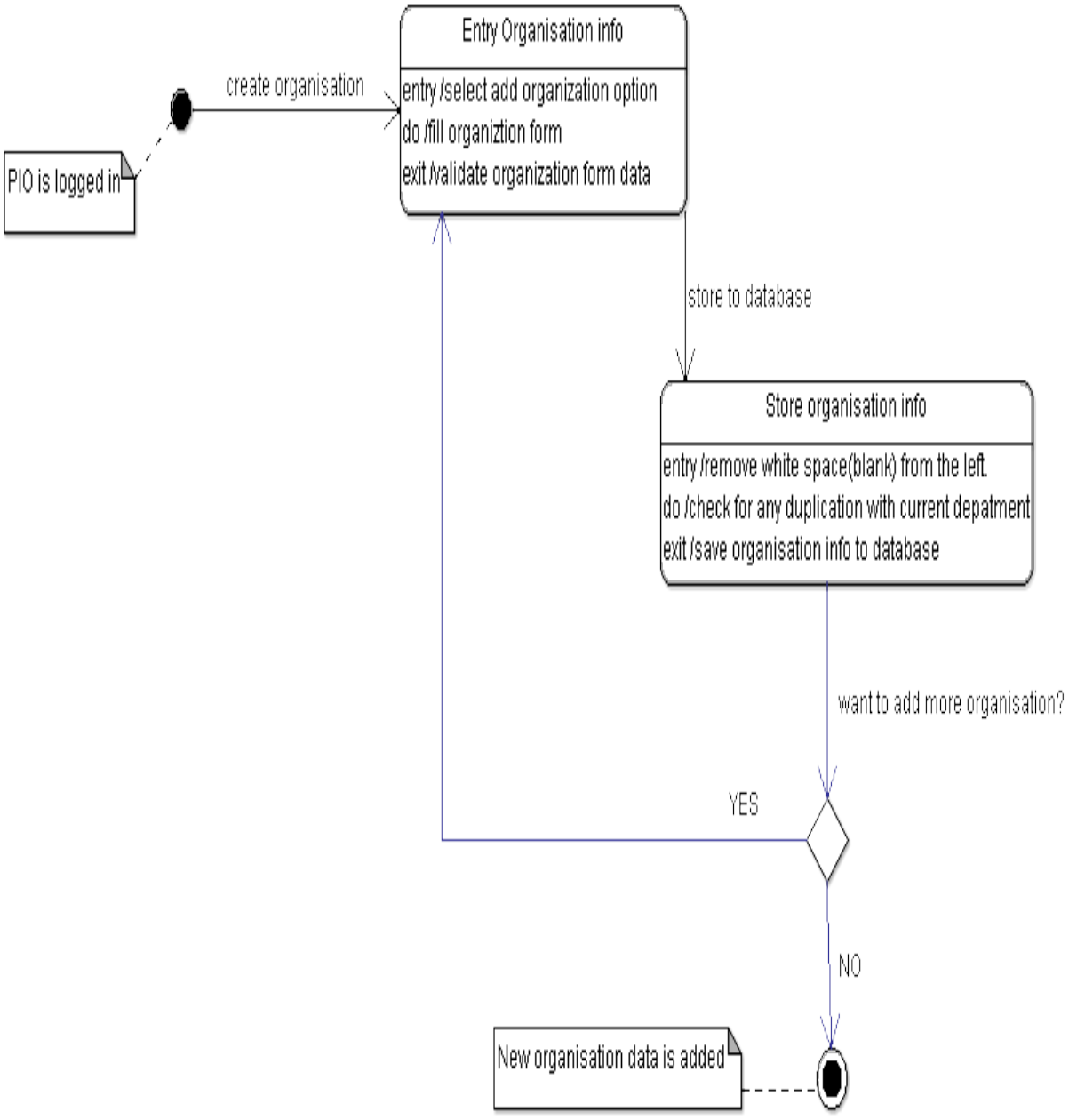
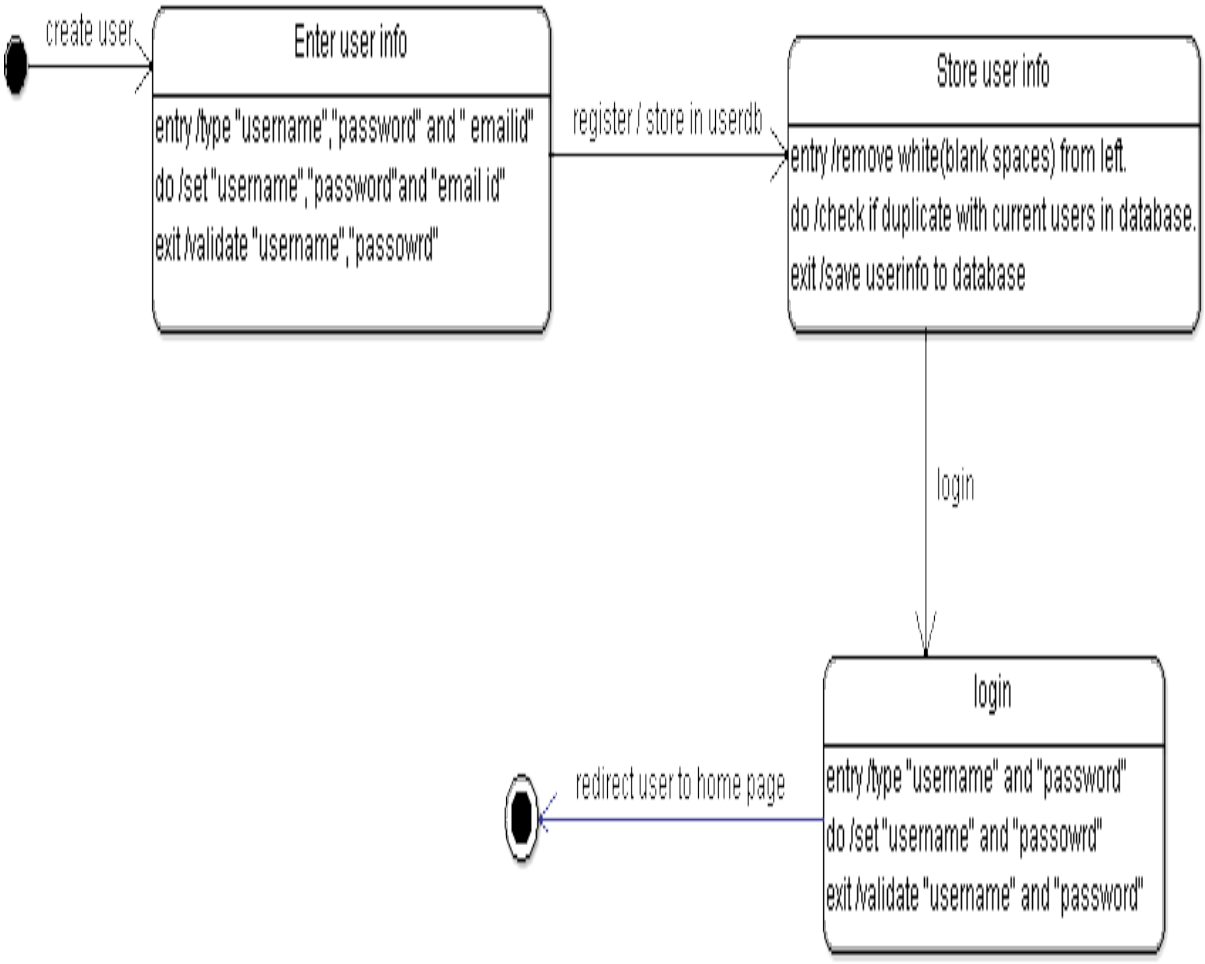


Diagram 5.4: Add PIO

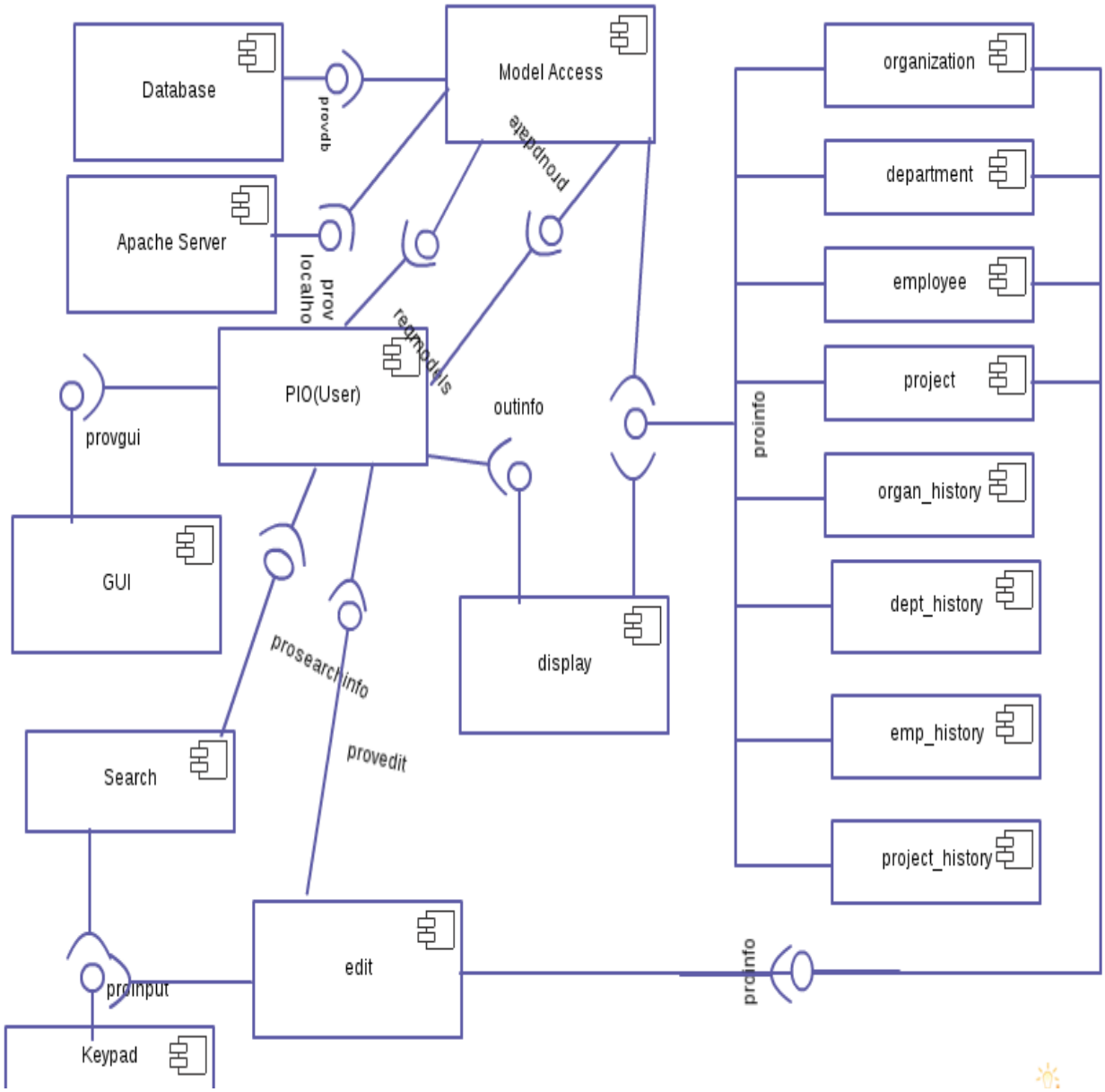


6. Component Diagram:-

A component diagram displays the structural relationship of components of a software system. These are mostly used when working with complex that has many components.

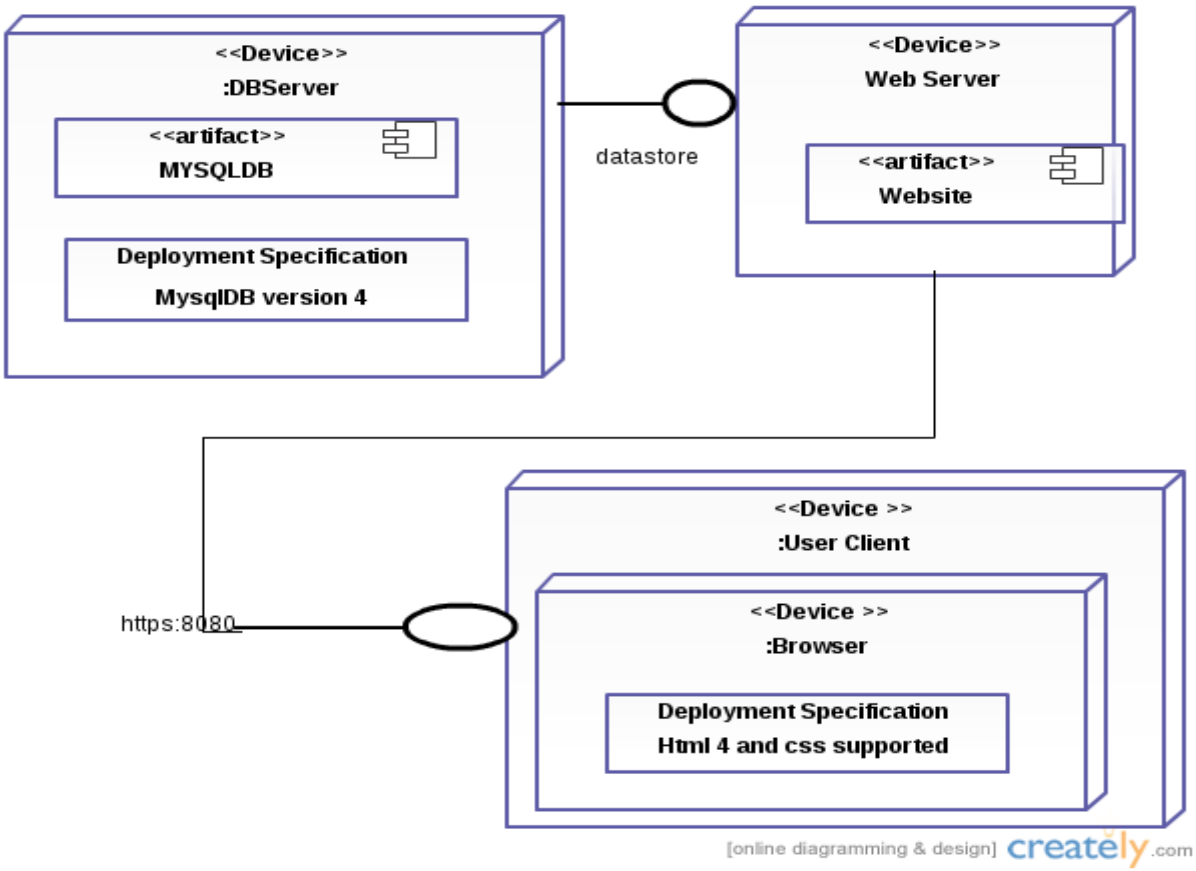
Components communicate with each other using interfaces. The interfaces are linked using connectors. Below image shows a component diagram.

Diagram component 6.1



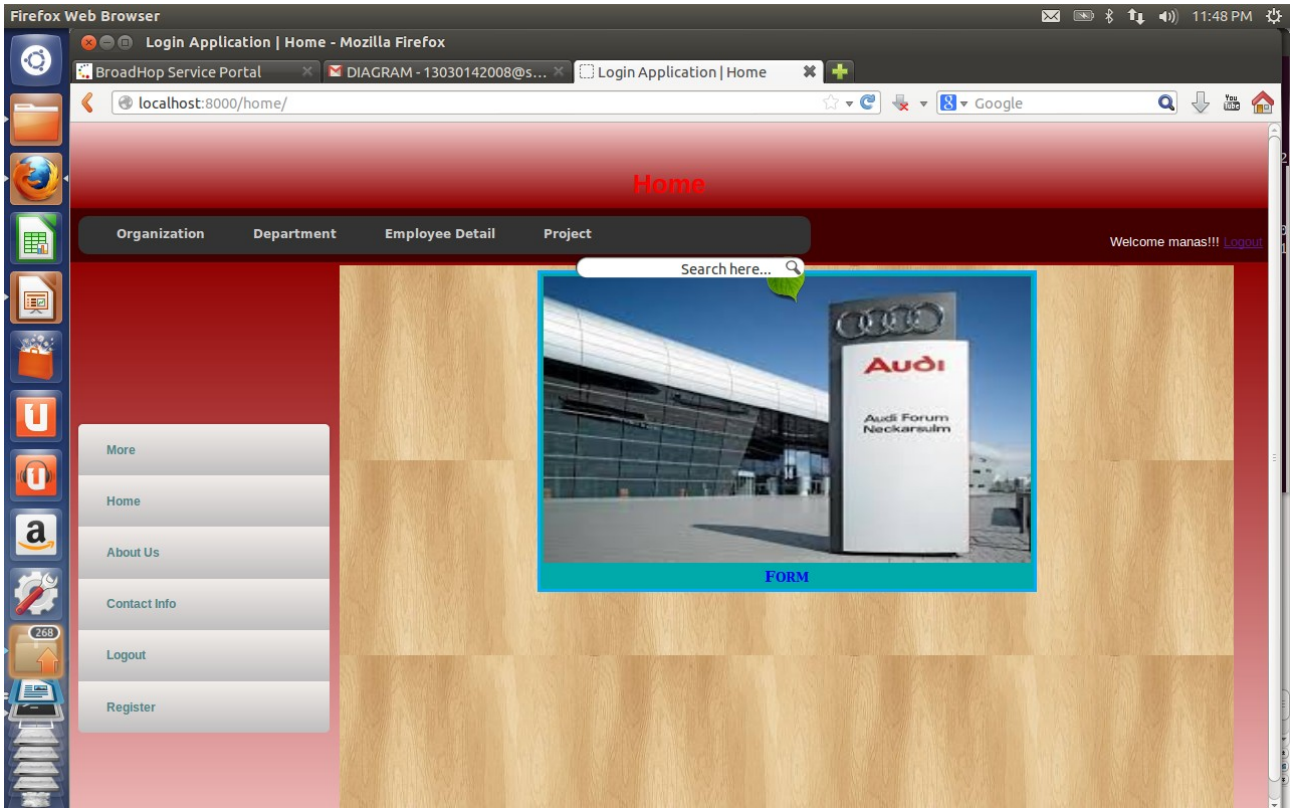
7.DEPLOYMENT DIAGRAM

Show the physical relationship between hardware and software in a system
Hardware elements:
Computers (clients, servers)
Embedded processors
Devices (sensors, peripherals)
Are used to show the nodes where software components reside in the run-time system
Diagram 7.1 Deployment Diagram

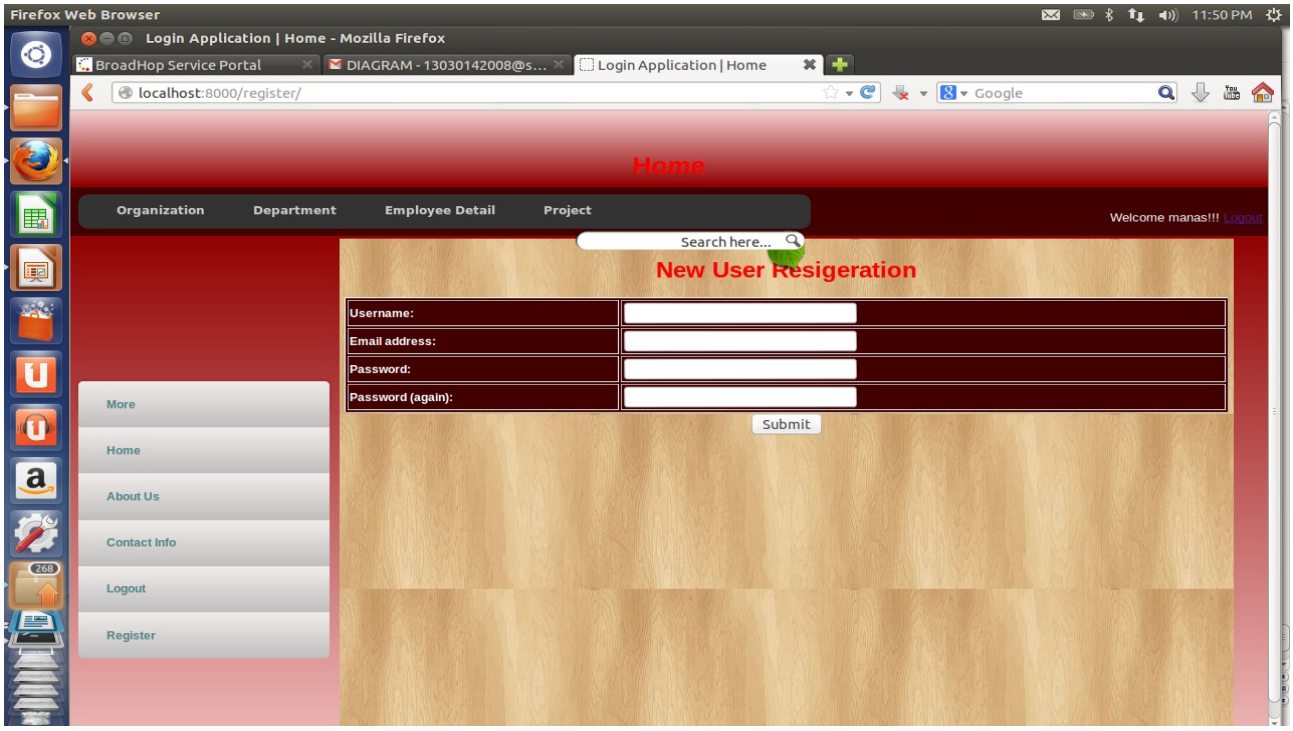


8. Screan Shots

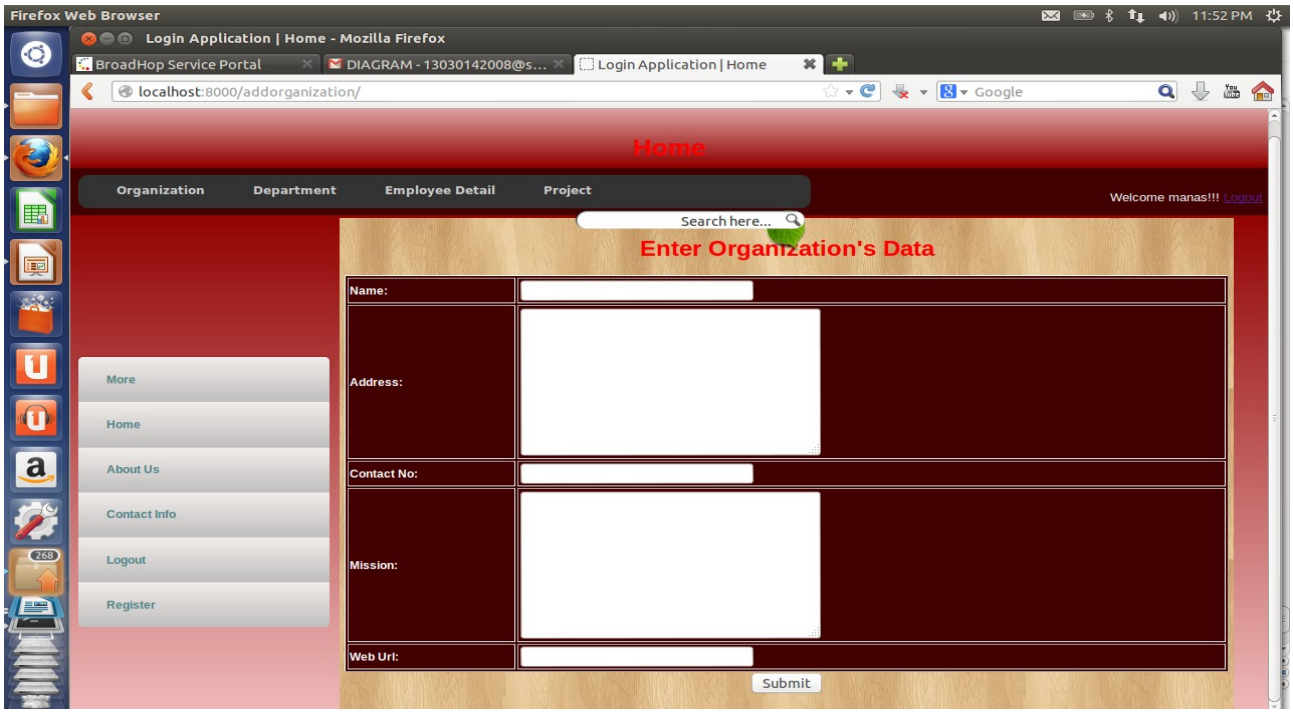
8.1 Home Page



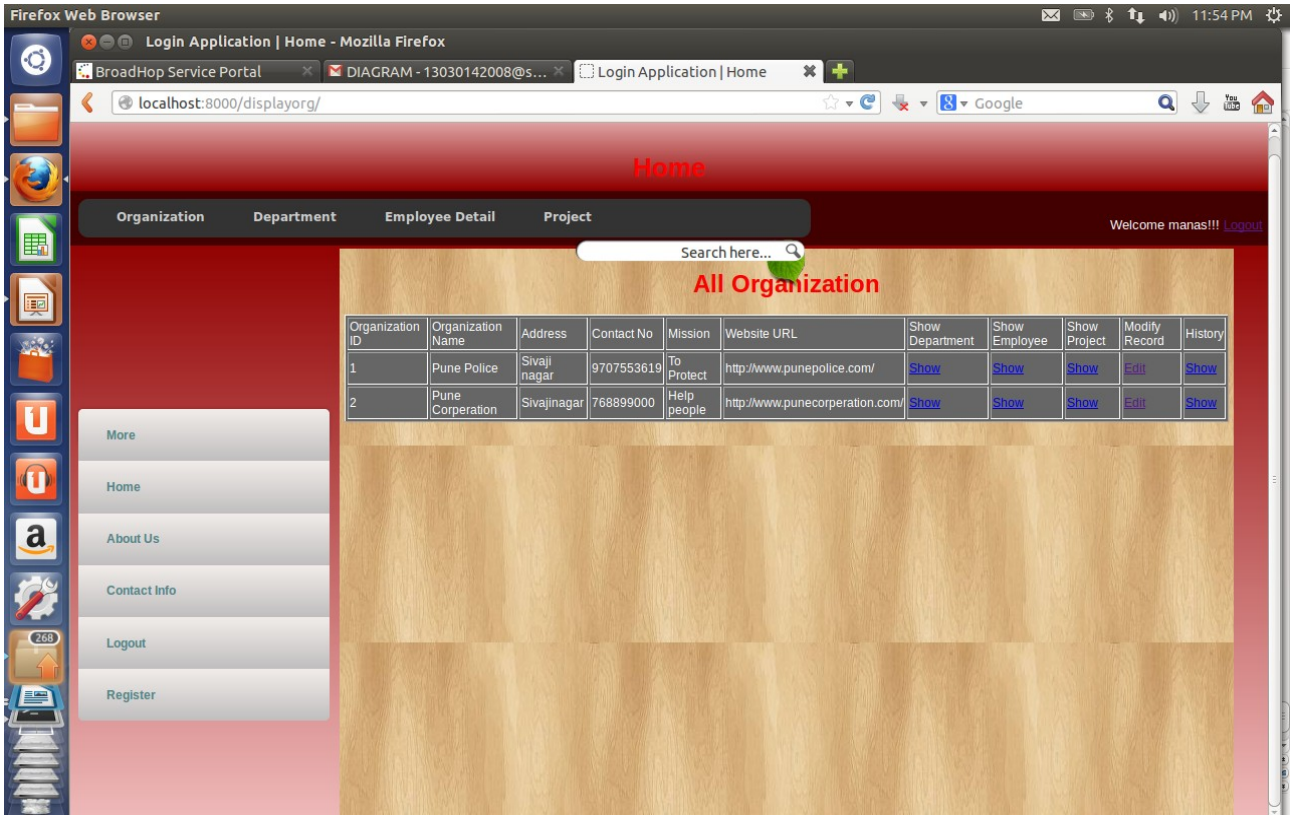
8.2 User Registeration



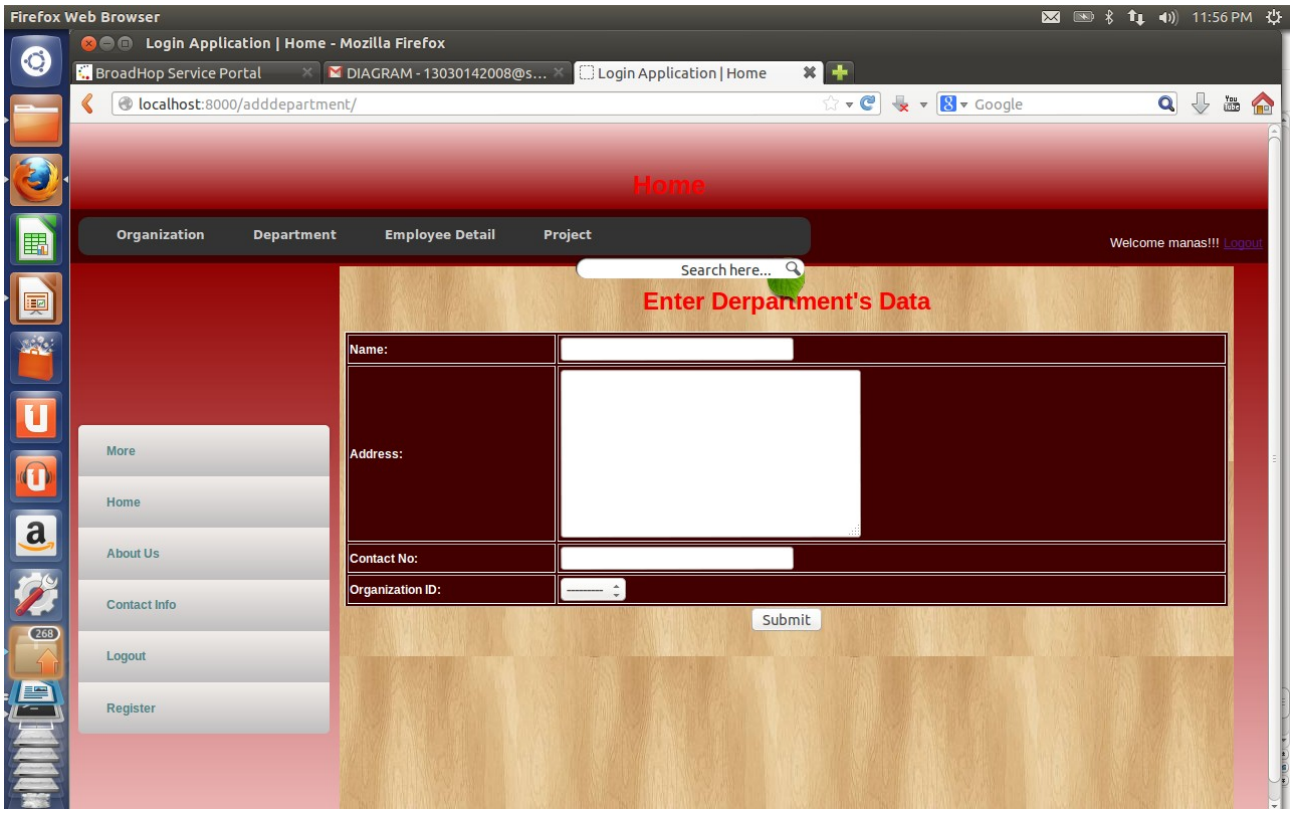
8.3 Add Organisaion



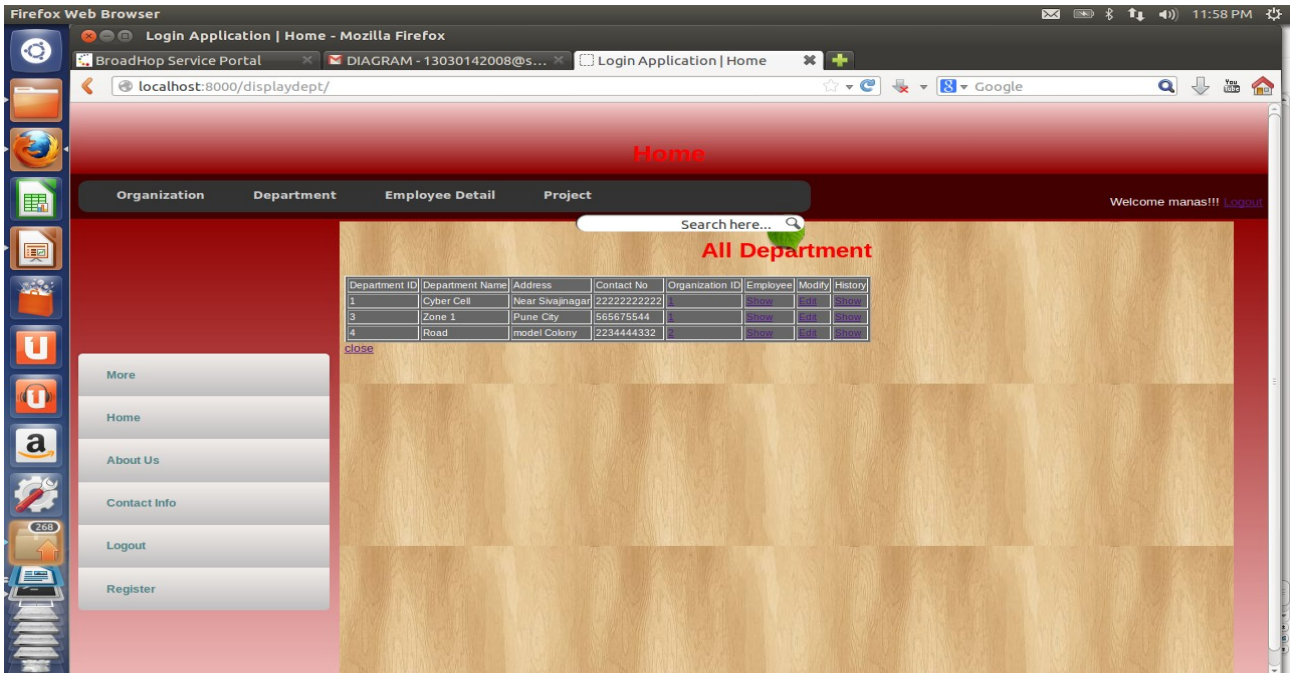
8.4 Show Organization



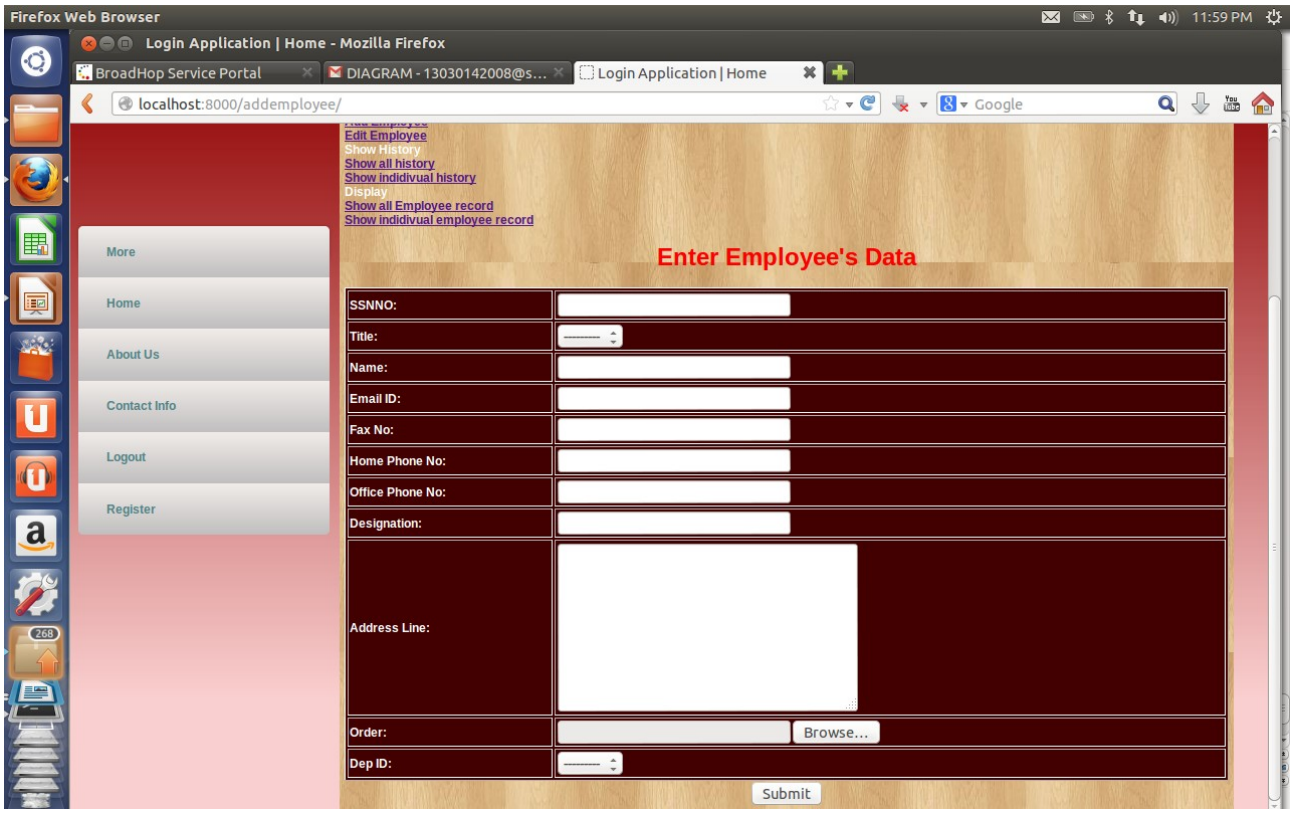
8.5 Add Department



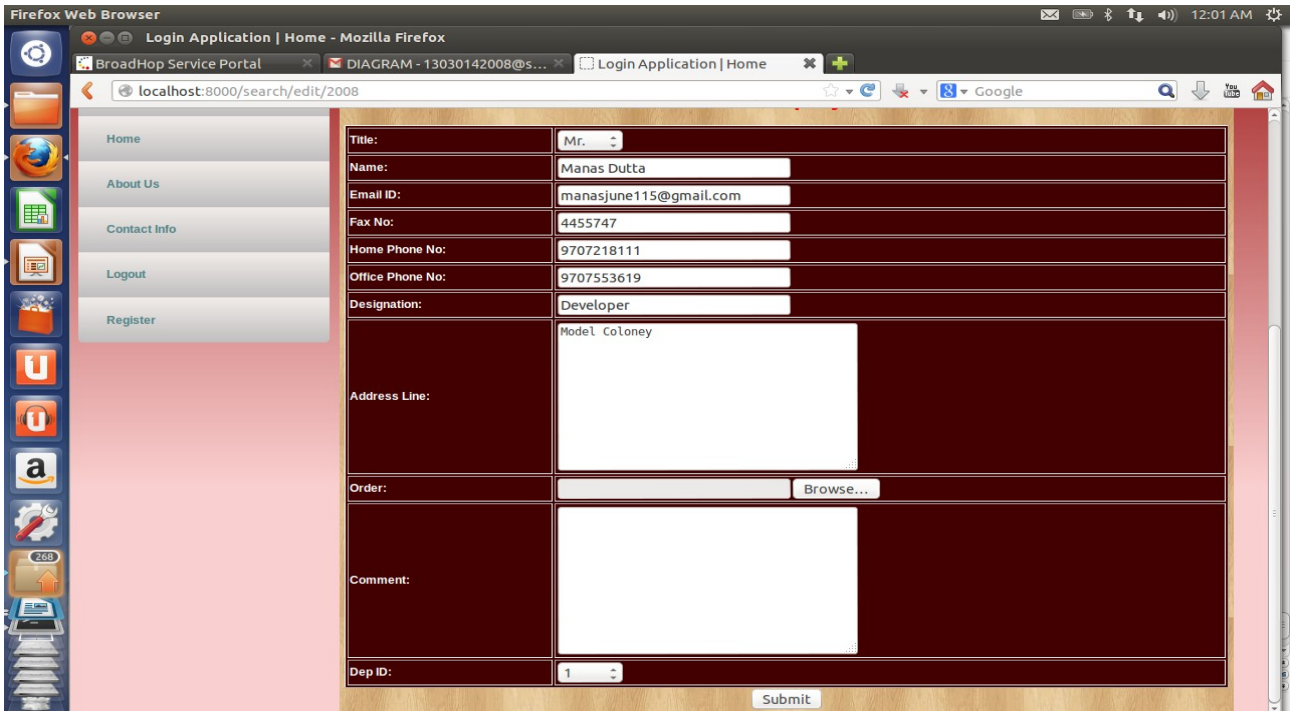
8.6 Show Department



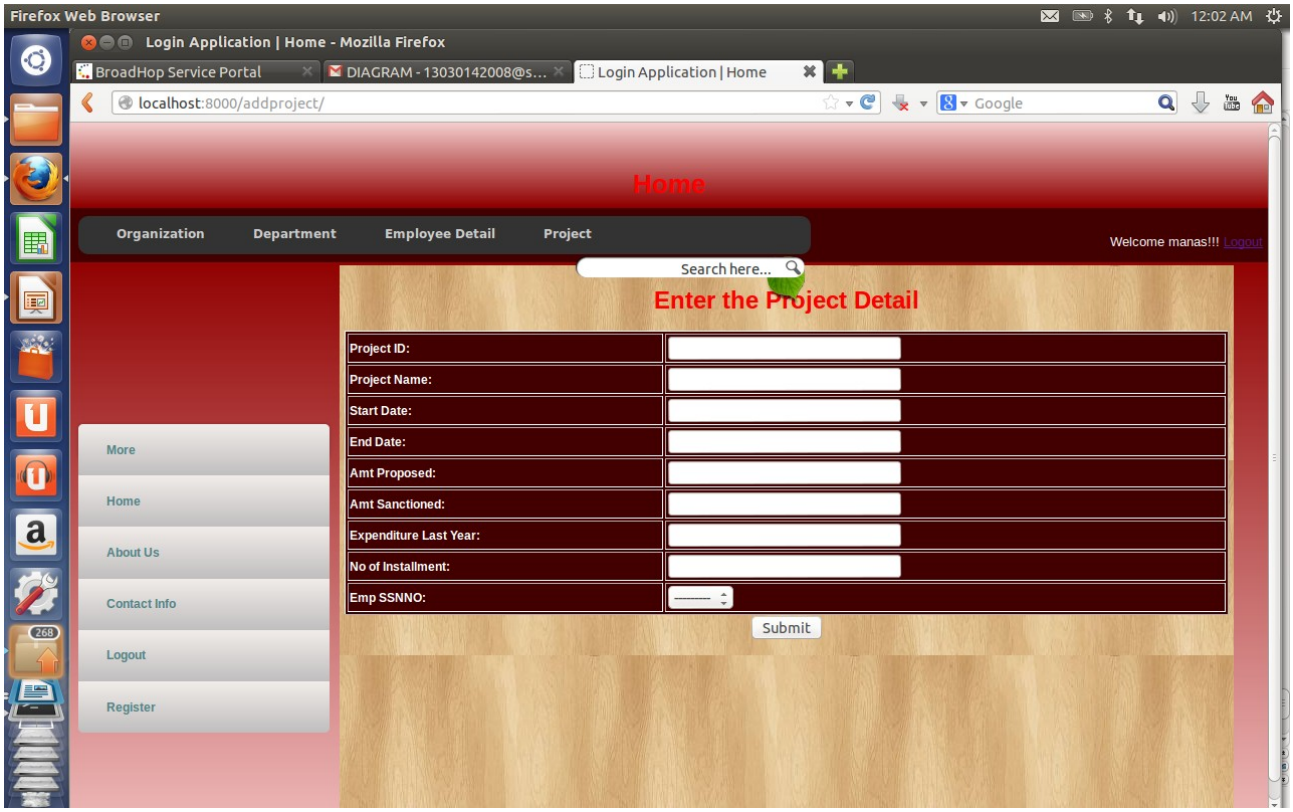
8.7 Add Employee



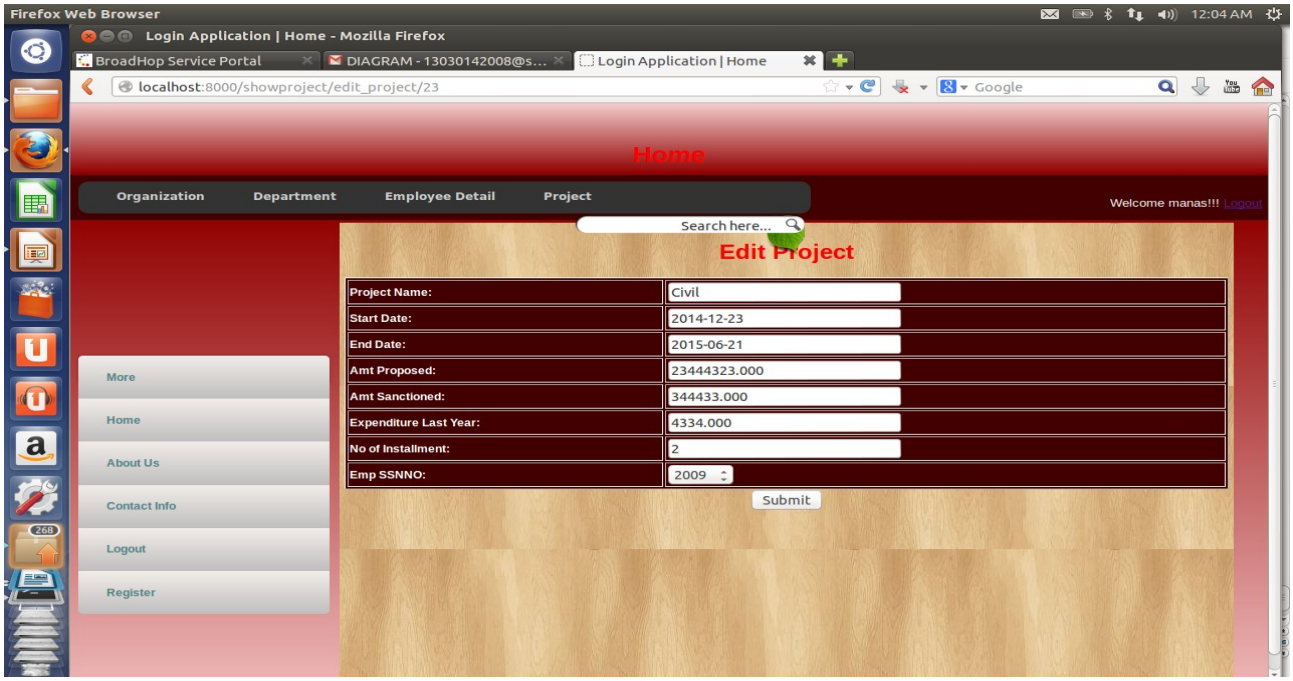
8.8 Edit Employee



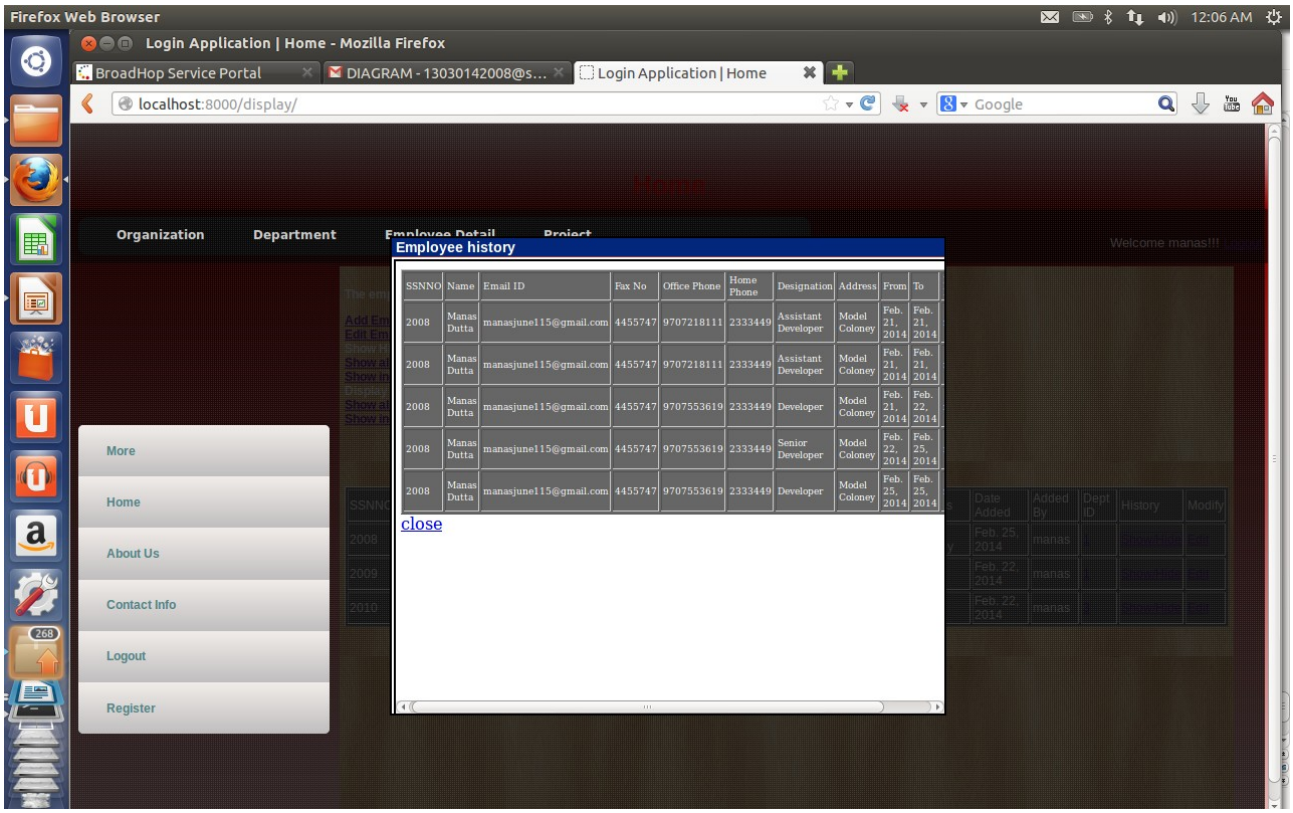
8.9 Add Project



8.10 Edit Project



8.11 Show Employee-history



8.12 Show Organisaion History