

# **Final Project**

## **ITMD 515**

Git Url : <https://bitbucket.org/pnaikaitmd451515s/pnaika-fp>

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## Objective

The purpose of this assignment is to produce a comprehensive multi-tiered enterprise application, consisting of a persistence layer, service layer, and presentation layer, also made use of services provided by the container such as security and transactions.

## About the application:

Page | 4

Global Parking System is a parking application which keeps information about the vehicle, parking details, Billing information that are parked in company's paid parking arena. In this paid parking arena, customers are supposed to pay for parking their vehicle on hourly manner.

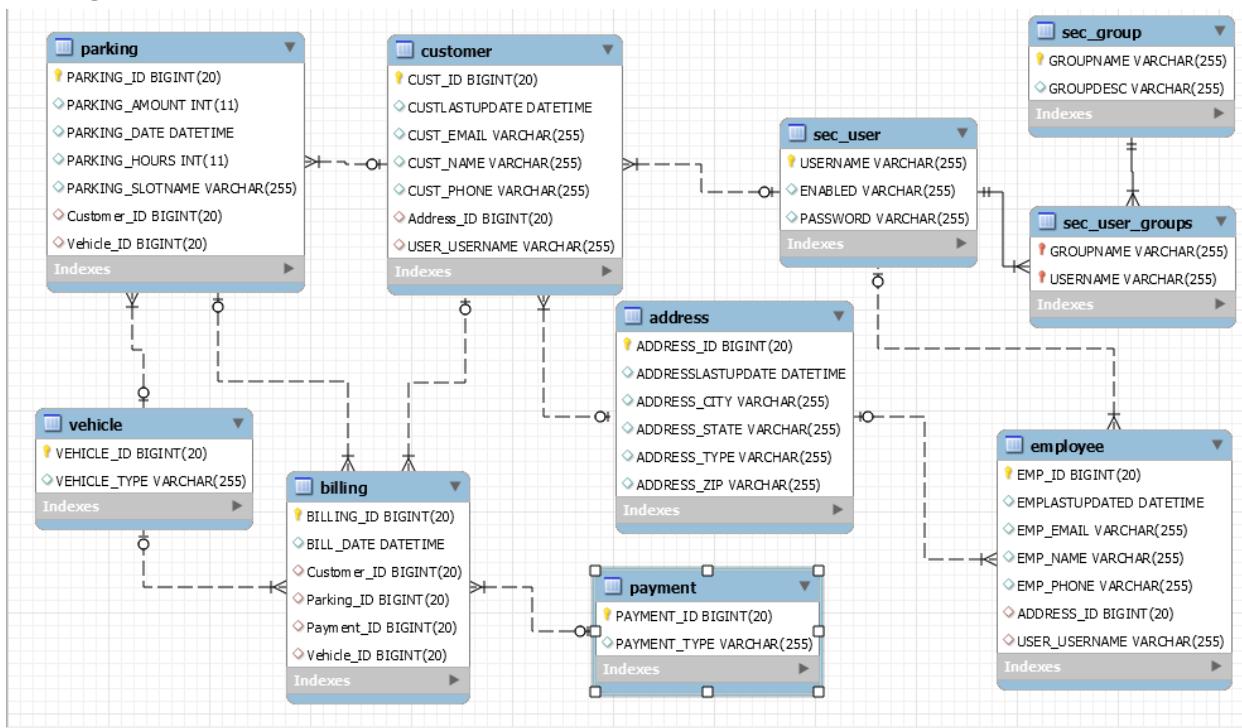
This application will have two actors, employee and customer. Where each actor will have predefined role and functionality.

## Design :

### Application Design :

Role	Description
Employee	Can view all the Customer details. Can update customer details. Can delete customer details. Can view all the employee details Can add new vehicle type to the application Can add new payment type to the application Can view all the billing details available in the application Can update his profile. Can Navigate to Social websites like facebook, twitter , Instagram etc
Customer	Can book the slot to park their vehicle. Can see his complete information Can update his profile Can view his billing information Can Navigate to Social websites like facebook, twitter , Instagram etc
New User	Can register as Employee and then login Can register as Customer and then login Receives an email once new Customer or Employee is registered. Can navigate to Social networking websites like facebook, twitter etc

ER Diagram :



Domain Model:

- 1) The domain model design is exactly that of MP3 and Security components as like from MP4
- 2) Pojo classes have been created and appropriate annotations have been added to create the table schema and relationships between different tables.
- 3) Separate Entity class have been created for application security (User and Group).
- 4) 7 more entity classes are created with appropriate relation between them considering application design and implementation requirement for application performance

Business Layer:

- 1) Each entity class has its own corresponding EJB Stateless component which implements CRUD operation on the database and business methods wherever necessary considering application design.
- 2) All entity classes extend an abstract class to implement certain operations that are common to all the entities.
- 3) The data is persisted into the database using a singleton EJB annotated with @Startup.
- 4) Passwords have been hashed using MD5 hashing approach.
- 5) Backing Beans have been used to fetch data from the domain entities.
- 6) Separate Domain class have been created to implement application security.
- 7) Email will be sent to Customer or Employee who Sign Up as a new user to the application.

### Presentation Layer:

- 1) All the web pages are made responsive for any device using @media notation in CSS.
- 2) Navigation is available in all the pages and hence no dead pages available in the complete application.
- 3) JSF validation are performed in any form related pages like New Customer/Employee Sign Up, Editing Employee/Customer Profile, Adding Payment Type or Vehicle Type.
- 4) Composite Components have been used as many there are many common functionalities common among roles.
- 5) Separate views are created for employee and customer
- 6) Bootstrap is used for CSS work and separate CSS files are included to make web application presentable.

### Persistence Layer:

- 1) Temporal Attribute has been used in all the entity which has date attribute.
- 2) Unidirectional and Bidirectional Relationships have been implemented.
- 3) One to One, One to Many or Many to One, Many to Many Relationships have been implemented.
- 4) Separate Domain class have been created to implement application security
- 5) Bean validation has been in required domain classes

### Requirement Coverage:

- ✓ Implemented **MVC Framework** with appropriate Model, View and Controller.
- ✓ Considered **separation of concerns** principle and implemented as required.
- ✓ Customer or employee can create new account and hence implementing **new user creation**.
- ✓ **Search** has been implemented for employee who can search for a particular Customer after providing Customer ID for the customer he want to filter to do required manipulation.
- ✓ Considered to display entity information in the **tabular column** considering application working and implementation design.
- ✓ **CRUD functionality** is implemented wherever necessary according to the application roles.
- ✓ Navigation is provided in all the pages and hence there is **no dead end** in the application.
- ✓ **JSF validation** is implemented for all the input fields.
- ✓ **Bootstrap is used for CSS** and also few basic CSS is coded to make web application more presentable.
- ✓ **Test data has been populated** when application starts using Singleton @StartUp.
- ✓ **Loggers** are used to catch all the exceptions. And appropriate message will be displayed to User and exceptions are logged for the developer.
- ✓ **Fully functional web application** has been created for Parking Company.

### Extra Credit Work:

- Customer and Employee roles have been created and have their own **functionality and security** has been implemented for both the actors
- **JavaMail service** has been implemented and an email will be sent to Customer or Employee whoever Sign Up to the application.

- **JSF Custom Validator** is implemented to get Custom messages for all the input fields in the complete application.
- **Incorporated Primefaces** in order to put place holders in all the input files.
- Incorporated **Front end framework** using BootStrapping and also made complete application responsive.
- Incorporated **navigation to Social network websites** and also a logo to the application.

### Development Insights:

- Experience includes exploring more in JPA, Security related coding, implementation of domain model, JSFs and creating end to end application with MVC framework.
- Good handson experience.
- Got familiar working with Persistence, Implementation of relationships in JPA and applying security to the application and JSFs
- Handling JPQL and many more.
- Implementing Java Mail Service.

### Installation Information:

Software required to install,

1. NetBean 8
2. MySQL
3. Latest JDK 8
4. Mail.jar

### JAVA PROJECT

- 1) Download and extract pnaikaFP.zip.
- 2) Place the project in the netbeans workspace.
- 3) Select File -> Open Project. Navigate to the place where you have extracted the file. Select each one and click on open project.
- 4) Build and Run the code

### DATABASE

- 1) A new schema called itmd4515 with Username: itmd4515 and password: itmd4515 has to be created.
- 2) A new connection schema called itmd4515 needs to create to connect to the itmd4515 database through NetBeans.
- 3) A new JDBC resource (Pool named **itmd4515Pool** and JDBC Resource named **jdbc/itmd4515DS**)

### Glassfish security realm:

1. Navigate to the Services Tab in NetBeans and expand Servers.
2. Select GlassFish Server 4 and right click to select “Domain Admin Console”.

3. The Domain Admin Console for GlassFish server will open up in a web browser.

4. Navigate to Configurations -> server-config -> Security -> Realms.

5. Create a new Realm itmd4515Realm as show below.

The screenshot shows the 'server-config' configuration page. The 'Realms' section is expanded, and 'itmd4515Realm' is selected. The configuration details are as follows:

- JAAS Context:** jdbcRealm
- JNDI:** jboss/tmd4515DS
- User Table:** sec\_user
- User Name Column:** USERNAME
- Password Column:** PASSWORD
- Group Table:** sec\_user\_groups
- Group Table User Name Column:** USERNAME
- Group Name Column:** GROUPNAME
- Password Encryption Algorithm:** none
- Assign Groups:** (empty)
- Database User:** (empty)
- Database Password:** (empty)
- Digest Algorithm:** MD5
- Encoding:** (empty)
- Charset:** (empty)

## Security Implementations:

Group Table :

	GROUPNAME	GROUPDESC
▶	Customers	Group of Customers
Employee	Employees	Group of Employees
*	NULL	NULL

## User Table :

	USERNAME	ENABLED	PASSWORD
▶	ashvik	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	kesav	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	kiran	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	mouni	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	prashanth	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	sanjeev	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	shashank	NULL	5f4dcc3b5aa765d61d8327deb882cf99
	shreyas	NULL	5f4dcc3b5aa765d61d8327deb882cf99
*	NULL	NULL	NULL

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## Group-User table

	GROUPNAME	USERNAME
▶	Employees	ashvik
	Employees	kesav
	Customers	kiran
	Customers	mouni
	Customers	prashanth
	Employees	sanjeev
	Employees	shashank
	Customers	shreyas
*	NULL	NULL

## Screen Shots:

## Welcome Page(Main/Home Page)

**Global Parking Systems, Inc.** Leading the parking industry through creativity and innovation. We have standard and ornamental parking gates, which we ensure are completely compatible with Solid State Logic remote control technology.

This application will allow you to park your vehicle Safe , Sound and Secured! .

Gohead LogIn and Book your SLOT now!

Click here to [LOG IN](#)

Please click here to see [JAVA DOC](#)

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Welcome page has following navigations available in it.

- 1) Link to create new employee to the web application
- 2) Customer Sign Up link.
- 3) Navigation to LOGIN page.
- 4) Navigation to ABOUT US page.
- 5) Navigation to Social Network websites in the footer.
- 6) Link to JAVA DOC.

## Employee Sign Up:

Welcome to the Employee Sign up Page!!!

Main Menu | Login

Username	User Name
Password :	Password
Employee Name	Full Name
Employee Email	Email
Phone Number :	Phone No.
City	City
State	State
Zip Code	Zip Code

Go Back!

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Employee Sign Up Page has following features :

- 1) Have link to navigate to Main Page or Login Page.

*Scenario 1:*

When input fields do not have any value and when we click on Sign Up.

Welcome to the Employee Sign up Page!!!

Main Menu | Login

Username	User Name • Please enter UserName
Password :	Password • Please enter password
Employee Name	Full Name • Please enter Employee's Full Name
Employee Email	Email • Please enter customer email address
Phone Number :	Phone No. • Please enter Phone Number
City	City • Please enter City Name

State  
• Please enter state Name

Zip Code  
• Please enter Zip Code

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*Scenario 2:*

When employee Input User name which is already present.

Welcome to the Employee Sign up Page!!!

Main Menu | Login

Username Name : kiran Exist

Username	kiran
Password :	*****
Employee Name	KiranJE
Employee Email	prashanth17.naik@gmail.
Phone Number :	3126478554
City	Chicago
State	IL

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**Scenario 3:**

When all the inputs are valid, Employee will be registered and an email is sent to the new employee's email address.

Welcome to the Employee Sign up Page!!!

Main Menu | Login

Username	kiranNew
Password :	*****
Employee Name	KiranJE
Employee Email	prashanthi17.naik@gmail.com
Phone Number :	3126478554
City	Chicago
State	Illinois
Zip Code	60616

Go Back!

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Username : KiranNew ; Password : password

Please enter UserName and Password!

Employee Registration was successful and an Email is sent to your email ID!!! You can Login now

Employee Sign up | Customer Sign up | Home

Username	<input type="text" value="Username"/>
Password	<input type="password" value="Password"/>

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Email will be sent to the email address entered by an employee.

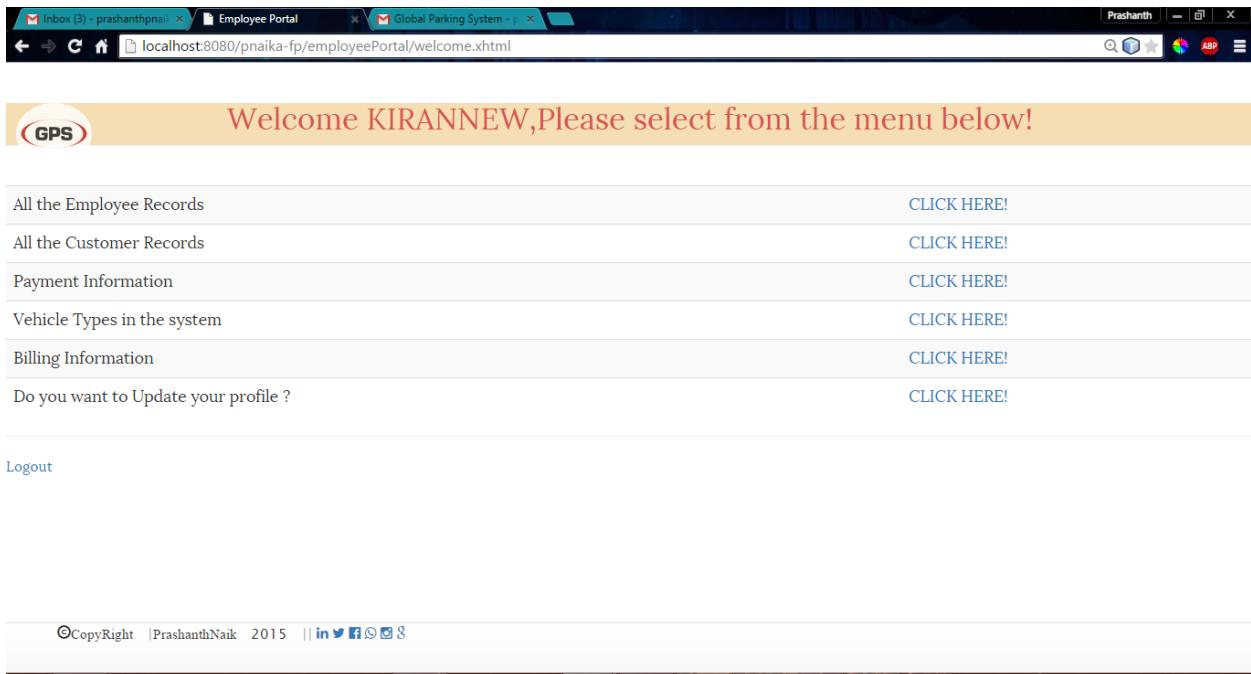
The screenshot shows a Gmail inbox with one unread email from 'Global Parking System'. The subject of the email is 'Dear Employee,' and the body contains the message 'your registration is complete, Thank you!'. The email was sent at 4:50 PM (1 minute ago). The Gmail interface includes a sidebar with 'Compose', 'Inbox', 'Starred', 'Important', and 'Sent Mail' options. At the bottom, it displays '4.72 GB (31%) of 15 GB used' and 'Last account activity: 0 minutes ago Open in 1 other location Details'.

#### Scenario 4:

When employee logs in with new Username and password. Here it is UserName : KiranNew and Password : password.

The screenshot shows a web browser displaying a login page for 'Global Parking System'. The URL is 'localhost:8080/pnaika-fp/common/signup.xhtml'. The page features a yellow header bar with the text 'Please enter UserName and Password!' and a yellow footer bar with the message 'Employee Registration was successful and an Email is sent to your email ID!!! You can Login now'. Below the header, there are input fields for 'Username' (containing 'kiranNew') and 'Password' (containing '\*\*\*\*\*'). There are also 'Login' and 'Reset' buttons. At the bottom of the page, there is a copyright notice: '©CopyRight | PrashanthNaik 2015 || in tw fb g'. The page has a dark blue header bar with various icons.

Navigated to employee portal.



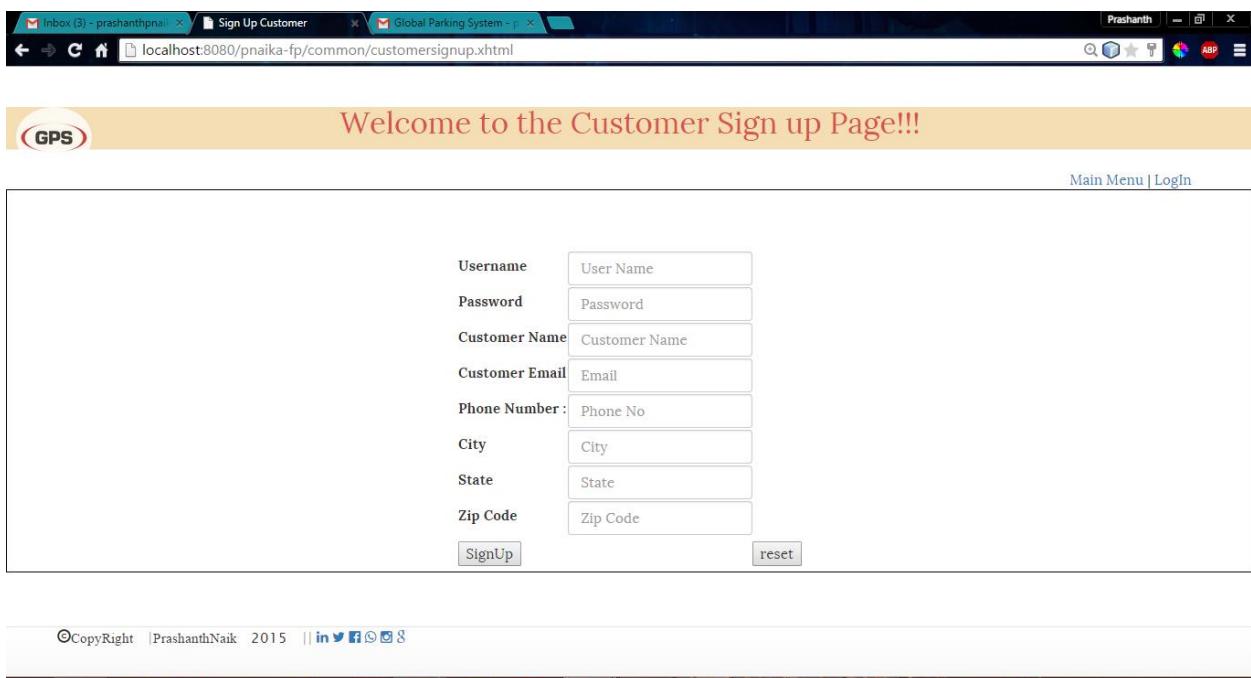
The screenshot shows a web browser window titled "Employee Portal" with the URL "localhost:8080/pnaika-fp/employeePortal/welcome.xhtml". The page has a yellow header bar with the GPS logo and the text "Welcome KIRANNEW, Please select from the menu below!". Below this, there is a table with several rows of links:

All the Employee Records	<a href="#">CLICK HERE!</a>
All the Customer Records	<a href="#">CLICK HERE!</a>
Payment Information	<a href="#">CLICK HERE!</a>
Vehicle Types in the system	<a href="#">CLICK HERE!</a>
Billing Information	<a href="#">CLICK HERE!</a>
Do you want to Update your profile ?	<a href="#">CLICK HERE!</a>

At the bottom left, there is a "Logout" link. The footer contains copyright information and social media links.

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### Customer Sign Up:



The screenshot shows a web browser window titled "Sign Up Customer" with the URL "localhost:8080/pnaika-fp/common/customersignup.xhtml". The page has a yellow header bar with the GPS logo and the text "Welcome to the Customer Sign up Page!!!". At the top right, there are links for "Main Menu" and "Login". The main content area contains a form with the following fields:

Username	<input type="text" value="User Name"/>
Password	<input type="password" value="Password"/>
Customer Name	<input type="text" value="Customer Name"/>
Customer Email	<input type="text" value="Email"/>
Phone Number :	<input type="text" value="Phone No"/>
City	<input type="text" value="City"/>
State	<input type="text" value="State"/>
Zip Code	<input type="text" value="Zip Code"/>

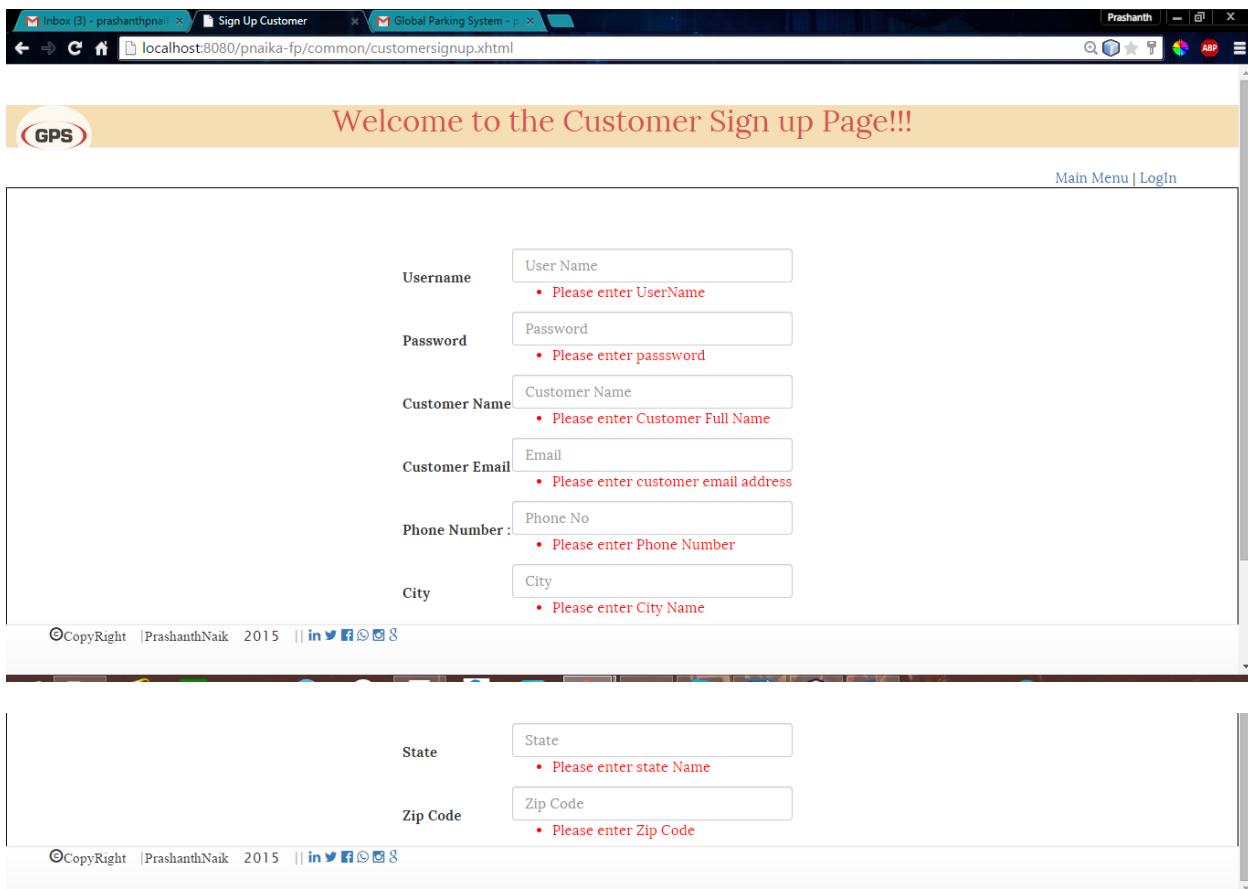
Below the form are two buttons: "SignUp" and "reset". The footer contains copyright information and social media links.

Customer Sign Up Page has following features :

- 1) Have link to navigate to Main Page or Login Page.

*Scenario 1:*

When input fields do not have any value and when we click on Sign Up.



The screenshot shows a web browser window with three tabs open: 'Inbox (3) - prashanthnaik', 'Sign Up Customer', and 'Global Parking System'. The active tab is 'Sign Up Customer' at the URL [localhost:8080/pnaika-fp/common/customersignup.xhtml](http://localhost:8080/pnaika-fp/common/customersignup.xhtml). The page title is 'Welcome to the Customer Sign up Page!!!'. On the left is a logo with 'GPS' and a circular arrow. On the right are links for 'Main Menu | Login'. The form contains six input fields, each with a red validation error message below it:

- Username:** User Name  
• Please enter UserName
- Password:** Password  
• Please enter password
- Customer Name:** Customer Name  
• Please enter Customer Full Name
- Customer Email:** Email  
• Please enter customer email address
- Phone Number :** Phone No  
• Please enter Phone Number
- City:** City  
• Please enter City Name

At the bottom of the page, there is a copyright notice: ©CopyRight |PrashanthNaik 2015 || [in](#) [tw](#) [fb](#) [li](#) [g](#)

*Scenario 2:*

When employee Input User name which is already present.

Welcome to the Customer Sign up Page!!!

Main Menu | Login

Username Name : kesav Exist

Username	kesav
Password	*****
Customer Name	New Customer
Customer Email	prashanth17.naik@gmail.com
Phone Number	3126478554
City	Chicago
State	IL

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**Scenario 3:**

When all the inputs are valid, Customer will be registered and an email is sent to the new customer's email address.

Please enter UserName and Password!

Customer Registration was successful and an Email is sent to your email ID!!! Click on Login link to Login

Employee Sign up | Customer Sign up | Home

Username	<input type="text" value="Username"/>
	<input type="text" value="kiran"/>
	<input type="text" value="kesav"/>
Password	<input type="password"/>
<input type="button" value="Login"/>	
<input type="button" value="Reset"/>	

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Username : ppn ; Password : password

Email will be sent to the email address entered by an employee.

The screenshot shows a Gmail inbox with three new messages from 'Global Parking System'. The messages are:

- prashanthpnaika@gmail.com - Dear Employee, your registration is complete. Thank you! (4:50 PM, 16 minutes ago)
- prashanthpnaika@gmail.com - to me (5:05 PM, 2 minutes ago)
- prashanthpnaika@gmail.com - to me (5:06 PM, 0 minutes ago)

The inbox also lists other contacts like Sunil Patil, Bindu Ram, Chaitra Narayana, and Dikshith Chandras.

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#### Scenario 4:

When customer logs in with new Username and password. Here it is UserName : ppn and Password : password.

The screenshot shows a customer portal login page with the following content:

- Welcome PPN, Please select from the menu below!**
- GPS** logo
- Want to Reserve the site for your vehicle [CLICK HERE!](#)
- Want to See your Reservation? [CLICK HERE!](#)
- Do you want to Update your profile ? [CLICK HERE!](#)
- [Logout](#)

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Navigated to customer portal.

When clicked on **Logout**, Customer Logs out and **Login** page will display.

## About Us Page:

This is a static page which talks about the Global Parking System.

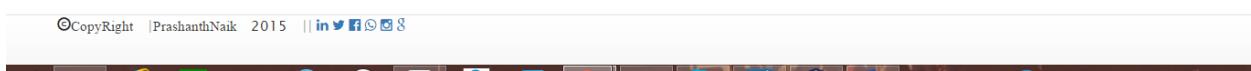
**Welcome to Global Parking System !!!**

**Global Parking Systems, Inc.** Leading the parking industry through creativity and innovation. We have standard and ornamental parking gates, which we ensure are completely compatible with Solid State Logic remote control technology.

This application will allow you to park your vehicle Safe , Sound and Secured! .

Gohead LogIn and Book your SLOT now!

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**We welcome you again!!!**

**Main Menu**

*Global Parking Systems, Inc. is a diverse provider of professional parking, ground transportation, facility maintenance, security and event logistics services to real estate owners and managers in a wide array of markets.*

*Our organization's cultural underpinning is a commitment to put Innovation In Operation. That means we are constantly challenging ourselves to use our tools and cultural attributes – innovation + creativity + excellence + integrity + initiative + knowledge + technology + experience + efficiency – to develop new and better ways of doing things in order to improve the effectiveness and efficiency of everything we do. That is our promise, both to ourselves and to you*

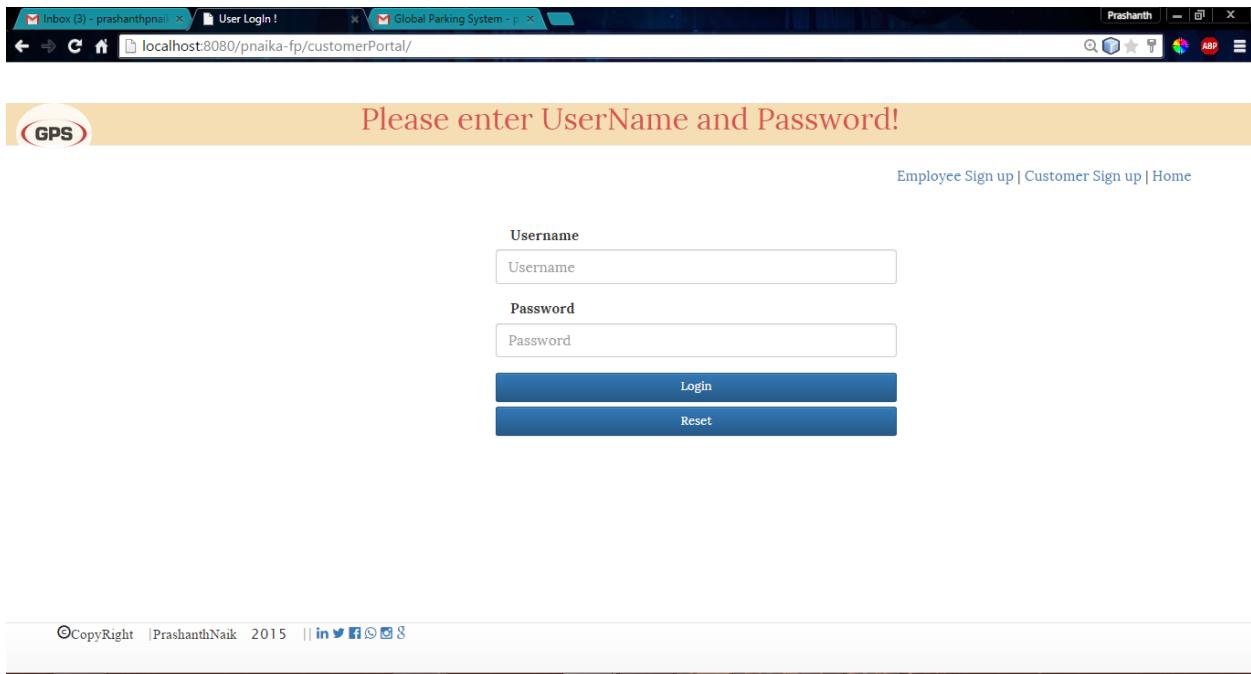
*Contact **Global Parking Systems, Inc.** by telephone or email to place your order and begin your parking equipment installation*



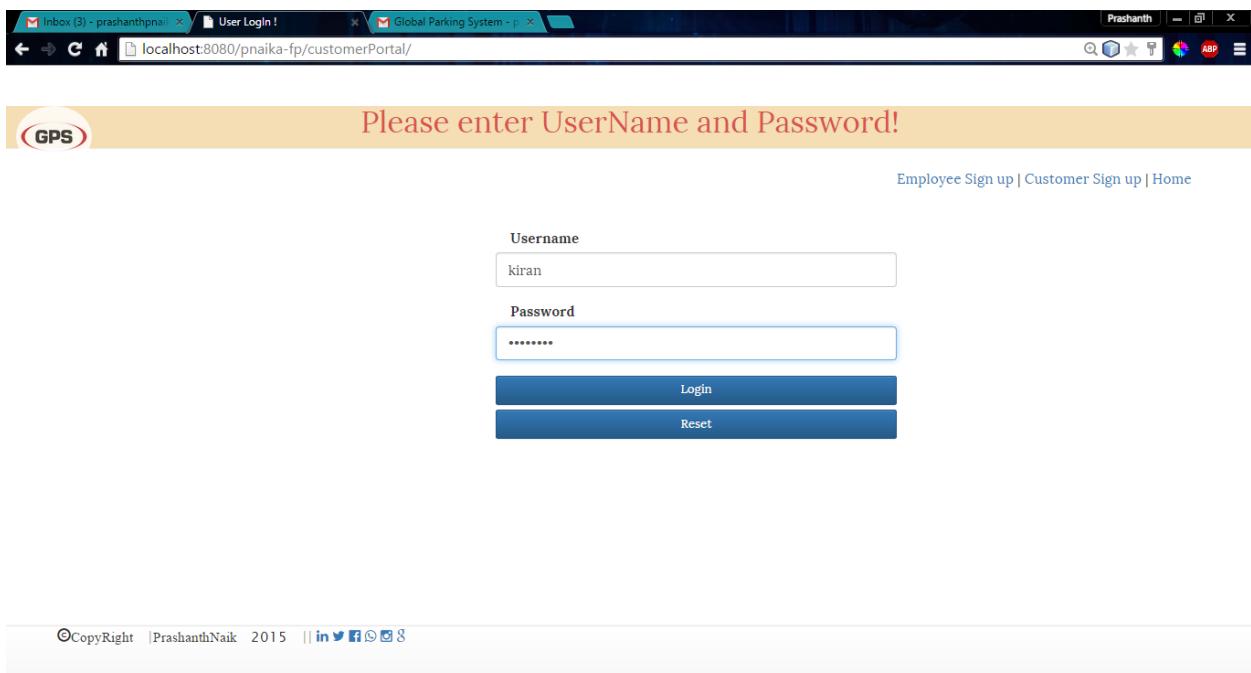
Click on Main menu to return to home.

## LogIN Page :

Here employee or customer can log in. Authentication is based on credentials that we provide.



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**Customer Portal:**

Valid credential : Username = kiran ; Password : password

 **Welcome KIRAN, Please select from the menu below!**

---

Want to Reserve the site for your vehicle	<a href="#">CLICK HERE!</a>
Want to See your Reservation?	<a href="#">CLICK HERE!</a>
Do you want to Update your profile ?	<a href="#">CLICK HERE!</a>

[Logout](#)

Customer portal look like above screen shot.

Customer can do following operations

### *Operation 1:*

Customer can Book a slot for parking his vehicle.

Inbox (3) - prashanthpna RESERVE A SITE ! Global Parking System - p Prashanth

localhost:8080/pnaika-fp/customerPortal/reserve.xhtml

KIRAN ,Please Complete the below form and Submit!

Main Menu | Go Back!

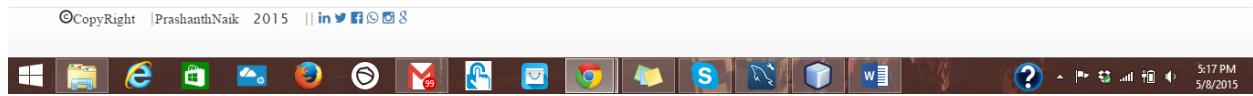
How many hours you wish to park :

Parking slot name :

Select Vehicle Type :

Select Payment Type :

[Logout](#)



## Scenario 1:

When customer enters nothing and click on submit:

Main Menu | Go Back!

How many hours you wish to park ? :

Parking slot name :   
• Please enter Parking slot name

Select Vehicle Type :

Select Payment Type :

[Logout](#)

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For Uniformity Slot name should start with **P** and a number with it eg: P5 or p5 etc

Main Menu | Go Back!

How many hours you wish to park ? :

Parking slot name :   
• Start with 'P' and a number

Select Vehicle Type :

Select Payment Type :

[Logout](#)



## Scenario 2:

When all the valid input is given: (drop down for vehicle type and payment type)

KIRAN ,Please Complete the below form and Submit!

Main Menu | Go Back!

How many hours you wish to park ? :	3
Parking slot name :	P9
Select Vehicle Type :	Two Wheeler
Select Payment Type :	Two Wheeler <b>Two Wheeler</b> Four Wheeler Heavy Vehicle
<input type="button" value="Submit"/> <input type="button" value="reset"/>	

Logout

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KIRAN ,Please Complete the below form and Submit!

Main Menu | Go Back!

How many hours you wish to park ? :	3
Parking slot name :	P9
Select Vehicle Type :	Four Wheeler
Select Payment Type :	Cash Cheque <b>Cash</b> Credit Card Debit Card
<input type="button" value="Submit"/> <input type="button" value="reset"/>	

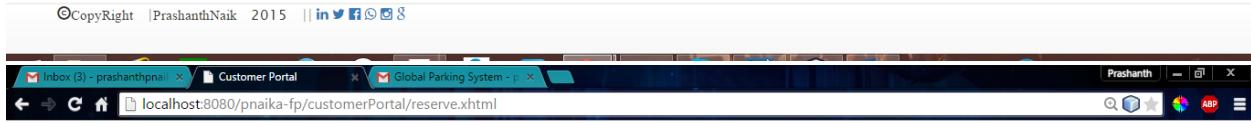
Logout

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Main Menu | Go Back!

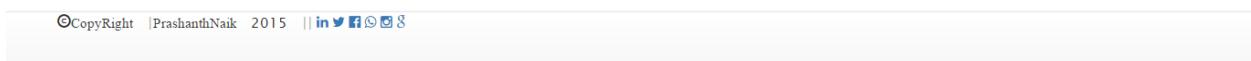
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[Logout](#)



Want to Reserve the site for your vehicle	<a href="#">CLICK HERE!</a>
Want to See your Reservation?	<a href="#">CLICK HERE!</a>
Do you want to Update your profile ?	<a href="#">CLICK HERE!</a>

[Logout](#)



#### Operation 2:

Customer can view all his billing details:



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Customer can update his profile:

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The screenshot shows a web browser window with the URL [localhost:8080/pnaika-fp/customerPortal/updateProfile.xhtml](http://localhost:8080/pnaika-fp/customerPortal/updateProfile.xhtml). The page title is "Customer Profile". A banner at the top says "Please Update the information!". On the left is a logo with "GPS" and a gear icon. On the right are links for "Main Menu" and "Go Back!". Below the banner is a form with the following fields:

UserName	kiran
Password	Password
Customer Name	Kiran
Contact Number	3126478554
Email	kiran@hawk.iit.edu
City	Bangalore
State	Karnataka
Zip Code	560098

A "Save" button is located below the form.

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### Scenario 1:

When username is entered which is already present in the system:

The screenshot shows a web browser window with the same URL and title as the previous one. A banner at the top says "Please Update the information!". A yellow message box displays the error: "User Name prashanth is already present!". Below the banner is a form with the following fields:

UserName	prashanth
Password	*****
Customer Name	Kiran
Contact Number	3126478554
Email	kiran@hawk.iit.edu
City	Bangalore
State	Karnataka

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### Scenario 2:

When nothing is entered in the form

Please Update the information!

UserName	User Name
Password	Password
Customer Name	Full Name
Contact Number	Phone No.
Email	email
City	City
State	State
Zip Code	Zip Code

[Save](#)

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Please Update the information!

UserName	User Name • User Name is mandatory
Password	Password • Password is mandatory
Customer Name	Full Name • Please enter Customer Name
Contact Number	Phone No. • Phone number is mandatory
Email	email • Please enter customer email address
City	City • Please enter customer city

[Store](#)

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**Scenario 3:****When everything is valid:**

The screenshot shows a web browser window with the URL [localhost:8080/pnaika-fp/customerPortal/updateProfile.xhtml](http://localhost:8080/pnaika-fp/customerPortal/updateProfile.xhtml). The page title is "Customer Profile". A banner at the top says "Please Update the information!". Below it is a form with the following fields:

UserName	kiranUpdated
Password	*****
Customer Name	KiranUpdated
Contact Number	3126478554
Email	kiran@hawk.iit.edu
City	BangaloreUpdated
State	Karnataka
Zip Code	560098

A "Save" button is located below the form. At the bottom, there is a copyright notice: "CopyRight | PrashanthNaik 2015 || in ".

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The screenshot shows a web browser window with the same URL and title as the previous screenshot. A banner at the top says "Welcome KIRAN, Please select from the menu below!". Below it, a message box displays "Customer updation is complete !!!, Thank you.".

Below the message box, there are three links:

- Want to Reserve the site for your vehicle [CLICK HERE!](#)
- Want to See your Reservation? [CLICK HERE!](#)
- Do you want to Update your profile ? [CLICK HERE!](#)

A "Logout" link is located at the bottom left.

Updated value:

Inbox (3) - prashanthpnaik@gmail.com Customer Profile Global Parking System - pnaika-fp Prashanth

localhost:8080/pnaika-fp/customerPortal/updateProfile.xhtml

Please Update the information!

Main Menu | Go Back!

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UserName	kiranUpdate
Password	Password
Customer Name	KiranUpdated
Contact Number	3126478554
Email	kiran@hawk.iit.edu
City	BangaloreUpdated
State	Karnataka
Zip Code	560098

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3 ● select \* from payment:

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

CUST_ID	CUSTLASTUPDATE	CUST_EMAIL	CUST_NAME	CUST_PHONE	Address_ID	USER_USERNAME
1	2015-05-08 17:05:57	pnaika@hawk.iit.edu	Prashanth	3126478554	3	prashanth
2	2015-05-08 17:32:01	kiran@hawk.iit.edu	KiranUpdated	3126478554	6	kiran
3	2015-05-08 17:05:57	shreyas@hawk.iit.edu	Shreyas	3123654554	7	shreyas
4	2015-05-08 17:05:57	mouni@hawk.iit.edu	Mouni	3126478554	2	mouni
5	2015-05-08 17:06:36	prashanth17.naik@gmail.com	New Customer	3126478554	9	ppn
*	NULL	NULL	NULL	NULL	NULL	NULL

Use the for the toggle ↗

5 ● select \* from address:

Result Grid | Filter Rows: | Edit: | Export/Import: | Wrap Cell Content: |

ADDRESS_ID	ADDRESSLASTUPDATE	ADDRESS_CITY	ADDRESS_STATE	ADDRESS_TYPE	ADDRESS_ZIP
1	2015-05-08 17:05:57	Shimoga	Karnataka	E	60616
2	2015-05-08 17:05:57	Texas	TX	C	60611
3	2015-05-08 17:05:57	Chicago	IL	C	60616
4	2015-05-08 17:05:57	Springfield	IL	E	70616
5	2015-05-08 17:05:57	Mumbai	Maharastra	E	12345
6	2015-05-08 17:32:01	BangaloreUpdated	Karnataka	C	560098
7	2015-05-08 17:05:57	Shimoga	Karnataka	C	60616
8	2015-05-08 17:05:57	Mumbai	Maharastra	E	12345
9	2015-05-08 17:06:36	Chicago	Illinois	C	60616
*	NULL	NULL	NULL	NULL	NULL

Click on logout to logout.

**Employee Portal:**

Please enter UserName and Password!

Employee Sign up | Customer Sign up | Home

Username	kesav
Password	*****
Login	
Reset	

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Welcome KESAV,Please select from the menu below!

All the Employee Records	<a href="#">CLICK HERE!</a>
All the Customer Records	<a href="#">CLICK HERE!</a>
Payment Information	<a href="#">CLICK HERE!</a>
Vehicle Types in the system	<a href="#">CLICK HERE!</a>
Billing Information	<a href="#">CLICK HERE!</a>
Do you want to Update your profile ?	<a href="#">CLICK HERE!</a>

[Logout](#)

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**Employee can do following Operations:**

- 1) View all the employee details
- 2) View , update and delete customer details
- 3) View payment information and add payment type to the application.

- 4) View vehicle type and add vehicle type to the application.
- 5) View all the bill information in the system
- 6) Update his information.

*Operation1:*

When clicked on “All the Employee Records”

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ID	Name	email ID	Contact No.	City	State	Zip Code	Last Updated Date	Last Updated Time
1	Shashank	shashank@iit.edu	3698521478	Mumbai	Maharastra	12345	May 8, 2015	10:05:57 PM GMT
2	Kesav	kesav@iit.edu	3698521478	Springfield	IL	70616	May 8, 2015	10:05:57 PM GMT
3	Ashvik	ashvik@iit.edu	30000000000	Mumbai	Maharastra	12345	May 8, 2015	10:05:57 PM GMT
4	Sanjeev	sanjeev@iit.edu	3698521478	Shimoga	Karnataka	60616	May 8, 2015	10:05:57 PM GMT

*Operation2*

When clicked on “All the Customer Records”

The screenshot shows a web browser window titled "Customer List" from the Global Parking System. The page displays a table of customer records with the following data:

Customer ID	Customer Name	Email ID	Contact Number	City	State	Zip Code	Last Update Date	Last Update Time	Action
1	Prashanth	pnaika@hawk.iit.edu	3126478554	Chicago	IL	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a> <a href="#">Delete this Customer</a>
2	KiranUpdated	kiran@hawk.iit.edu	3126478554	BangaloreUpdated	Karnataka	560098	May 8, 2015	10:32:00 PM	<a href="#">Update Information</a> <a href="#">Delete this Customer</a>
3	Shreyas	shreyas@hawk.iit.edu	3123654554	Shimoga	Karnataka	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a> <a href="#">Delete this Customer</a>
4	Mouni	mouni@hawk.iit.edu	3126478554	Texas	TX	60611	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a> <a href="#">Delete this Customer</a>
5	New Customer	prashanth17.naik@gmail.com	3126478554	Chicago	Illinois	60616	May 8, 2015	10:06:36 PM	<a href="#">Update Information</a> <a href="#">Delete this Customer</a>

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### Scenario 1:

When employee enter customer ID in search box and click on Search button:

The screenshot shows a web browser window titled "Customer List" from the Global Parking System. The page displays a table of customer records with the following data:

Customer ID	Customer Name	Email ID	Contact Number	City	State	Zip Code	Last Update Date	Last Update Time	Action
3	Shreyas	shreyas@hawk.iit.edu	3123654554	Shimoga	Karnataka	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a> <a href="#">Delete this Customer</a>

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### Scenario 2:

employee can update customer information by clicking “Update Inforation”

The screenshot shows a web browser window titled "Customer List". The URL is "localhost:8080/pnaika-fp/employeePortal/custRecords.xhtml". The page header includes the Global Parking System logo (GPS) and navigation links for "Main Menu" and "Go Back!". A search bar at the top allows entering a Customer ID and searching. Below is a table with columns: Customer ID, Customer Name, Email ID, Contact Number, City, State, Zip Code, Last Update Date, and Last Update Time. Each row contains a "Update Information" and a "Delete this Customer" link. The table data is as follows:

Customer ID	Customer Name	Email ID	Contact Number	City	State	Zip Code	Last Update Date	Last Update Time	
1	Prashanth	pnaika@hawk.iit.edu	3126478554	Chicago	IL	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>
2	KiranUpdated	kiran@hawk.iit.edu	3126478554	BangaloreUpdated	Karnataka	560098	May 8, 2015	10:32:00 PM	<a href="#">Update Information</a>
3	Shreyas	shreyas@hawk.iit.edu	3123654554	Shimoga	Karnataka	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>
4	Mouni	mouni@hawk.iit.edu	3126478554	Texas	TX	60611	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>
5	New Customer	prashanth17.naik@gmail.com	3126478554	Chicago	Illinois	60616	May 8, 2015	10:06:36 PM	<a href="#">Update Information</a>

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The screenshot shows a web browser window titled "Update Customer Information". The URL is "localhost:8080/pnaika-fp/employeePortal/custRecords.xhtml". The page header includes the Global Parking System logo (GPS) and navigation links for "Main Menu" and "Go Back!". A message "KESAV,Please Update Required Customer Information" is displayed prominently. Below is a form for updating customer information with fields: Customer Name (New Customer), Contact Number (3126478554), Email (prashanth17.naik@gmail.), City (Chicago), State (Illinois), and Zip Code (60616). A "Save" button is present at the bottom left.

Customer Id : 5

Customer Name: New Customer  
 Contact Number: 3126478554  
 Email: prashanth17.naik@gmail.  
 City: Chicago  
 State: Illinois  
 Zip Code: 60616

Logout

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When nothing is entered:

Customer Id :

<b>Customer Name</b>	<input type="text"/>	Customer Name • Please enter Customer Name
<b>Contact Number</b>	<input type="text"/>	Phone Number • Please enter Phone Number
<b>Email</b>	<input type="text"/>	Email • Please enter customer email address
<b>City</b>	<input type="text"/>	City • Please enter customer city
<b>State</b>	<input type="text"/>	State • Please enter customer State
<b>Zip Code</b>	<input type="text"/>	Zip Code • Please enter customer zip code

**Save**

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When all valid enters are made

KESAV,Please Update Required Customer Information

Main Menu | Go Back!

Customer Id : 5

<b>Customer Name</b>	<input type="text" value="UpdatedCustomer"/>
<b>Contact Number</b>	<input type="text" value="0000000000"/>
<b>Email</b>	<input type="text" value="prashanth17.naik@gmail.com"/>
<b>City</b>	<input type="text" value="Texas"/>
<b>State</b>	<input type="text" value="US"/>
<b>Zip Code</b>	<input type="text" value="60616"/>

**Save**

Logout

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The screenshot shows a web browser window titled "Customer List" from a Global Parking System application. The page displays a table of customer information with columns: Customer ID, Customer Name, Email ID, Contact Number, City, State, Zip Code, Last Update Date, and Last Update Time. Each row includes links for "Update Information" and "Delete this Customer". A search bar at the top allows entering a customer ID and searching.

Customer ID	Customer Name	Email ID	Contact Number	City	State	Zip Code	Last Update Date	Last Update Time		
1	Prashanth	pnaika@hawk.iit.edu	3126478554	Chicago	IL	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
2	KiranUpdated	kiran@hawk.iit.edu	3126478554	BangaloreUpdated	Karnataka	560098	May 8, 2015	10:32:00 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
3	Shreyas	shreyas@hawk.iit.edu	3123654554	Shimoga	Karnataka	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
4	Mouni	mouni@hawk.iit.edu	3126478554	Texas	TX	60611	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
5	UpdatedCustomer	prashanthl7.naik@gmail.com	0000000000	Texas	US	60616	May 8, 2015	10:52:34 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>

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### Scenario 3

When employee want to delete that customer from the applicaton, click on “DELETE THIS CUSTOMER”

The screenshot shows the same "Customer List" page as before, but with a yellow banner at the top stating "Customer Details was deleted successfully". The table of customers is identical to the previous screenshot, showing five entries.

Customer ID	Customer Name	Email ID	Contact Number	City	State	Zip Code	Last Update Date	Last Update Time		
1	Prashanth	pnaika@hawk.iit.edu	3126478554	Chicago	IL	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
2	KiranUpdated	kiran@hawk.iit.edu	3126478554	BangaloreUpdated	Karnataka	560098	May 8, 2015	10:32:00 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
3	Shreyas	shreyas@hawk.iit.edu	3123654554	Shimoga	Karnataka	60616	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>
4	Mouni	mouni@hawk.iit.edu	3126478554	Texas	TX	60611	May 8, 2015	10:05:57 PM	<a href="#">Update Information</a>	<a href="#">Delete this Customer</a>

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### Operation 3 :

Employee can add view and add new vehicle type



Vehicle ID	Vehicle Type
1	Two Wheeler
2	Four Wheeler
3	Heavy Vehicle

Vehicle Type:



[Main Menu](#) | [Go Back!](#)

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Vehicle ID	Vehicle Type
1	Two Wheeler
2	Four Wheeler
3	Heavy Vehicle

Vehicle Type:



[Main Menu](#) | [Go Back!](#)

[Logout](#)

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The screenshot shows a web browser window titled "Vehicle Details" with the URL "localhost:8080/pnaika-fp/employeePortal/vehTypes.xhtml". The page header features the GPS logo and the title "Vehicle Types available in Global Reservation Systems.". A yellow success message at the top states "NEW VEHICLE TYPE Vehicle Type is added, Thank You!". Below this, a table lists four vehicle types with their corresponding IDs:

Vehicle ID	Vehicle Type
1	Two Wheeler
2	Four Wheeler
3	Heavy Vehicle
4	New Vehicle Type

Below the table, there is a form field labeled "Vehicle Type:" containing "New Vehicle Type" and a button labeled "Add new Vehicle Type". The footer includes copyright information "CopyRight | PrashanthNaik 2015" and social media links.

#### *Operation4 :*

Employee can view and add new Payment type:

The screenshot shows a web browser window titled "Payment Details" with the URL "localhost:8080/pnaika-fp/employeePortal/payInfo.xhtml". The page header features the GPS logo and the title "Payment Types available in Global Reservation Systems.". A yellow success message at the top states "Main Menu | Go Back!". Below this, a table lists four payment types with their corresponding IDs:

Payment ID	Name
1	Cheque
2	Cash
3	Credit Card
4	Debit Card

Below the table, there is a form field labeled "Payment Type:" containing "Payment Type" and a button labeled "Add new Payment Type". The footer includes copyright information "CopyRight | PrashanthNaik 2015" and social media links.

Payment Types available in Global Reservation Systems.

Payment ID	Name
1	Cheque
2	Cash
3	Credit Card
4	Debit Card

**Payment Type:**

New Payment Type  
Add new Payment Type

Main Menu | Go Back!

Logout

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Payment Types available in Global Reservation Systems.

Payment ID	Name
1	Cheque
2	Cash
3	Credit Card
4	Debit Card
5	New Payment Type

**Payment Type:**

New Payment Type

Main Menu | Go Back!

NEW PAYMENT TYPE Payment Type is added, Thank You!

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*Operation 5:*

Employee can view all the Billing information.

Dear KESAV,Billing Details in Global Reservation Systems.

Billing ID	Customer Name	Customer Phone No.	Customer Email	Parking Cost	Parking Hours	Slot Name	Vehicle Type	Payment Type	Parking Date	Parking Time
1	KiranUpdated	3126478554	kiran@hawk.iit.edu	30	3	P2	Two Wheeler	Debit Card	May 8, 2015	10:05:56 PM
2	Mouni	3126478554	mouni@hawk.iit.edu	40	4	P3	Heavy Vehicle	Cash	May 8, 2015	10:05:57 PM
3	Prashanth	3126478554	pnaika@hawk.iit.edu	20	2	P1	Four Wheeler	Credit Card	May 8, 2015	10:05:57 PM
4	KiranUpdated	3126478554	kiran@hawk.iit.edu	30	3	P9	Four Wheeler	Cash	May 8, 2015	10:24:18 PM

Main Menu | Go Back!

[Logout](#)

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*Operation 6:*

Employee can Update his profile. And validation is similar to Customer profile updation.

Please Update the information!

UserName :	kesav
Password :	Password
Employee Name	Kesav
Contact Number	3698521478
Email	kesav@iit.edu
City	Springfield
State	IL
Zip Code	70616

[Save](#)

[Logout](#)

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Click on logout will log out from the application.

**Expected Results:**

- ✓ Successfully created all the entities and implemented all the relationships.
- ✓ Initial test data are inputted in the database
- ✓ End to end web application operation.