

WEB APP (HR PANEL) DEVELOPMENT USING HTML, CSS, JAVASCRIPT, JQUERY, PHP, BOOTSTRAP, AJAX, SQL AND JSON

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Preface

HPCS HR Panel (Web App) is the go to portal for the Human Resources Manager to keep statistical analysis of all the employees. This makes the daily tasks of the HR Manager easier and helps in extracting the maximum efficiency in terms of performance as well as resourcefulness. The HR Panel happens to be a very vigorous tool to have by your side because it helps in measuring the processing of the employees of the company. This tool, if present at the HR's disposal can help him in devising plans (using the data collected) which urge to benefit the company in the short as well as long term.

Salient Features in Proposed System:

- Secure Login Panel
- Cookies Used to Keep User Logged In
- Secure Pages Which Can Only Be Accessed After Logging In
- Works as an Online Portal
- Add New/Old Employees
- View Employees
- Update Employee Profiles
- Analysis of Employee Attendance
- Checklist Kept Track of per Employee Separately
- Idiot Proof Code
- Passwords Protected in Hashed Format
- Planned Events and Schedules Imposed on Databases

HPCS HR Panel is developed using HTML, CSS, JavaScript, jQuery and Bootstrap as frontend and SQL, AJAX and PHP as Backend. The peculiarities of the project are elucidated upon in the further upcoming chapters.

Organization Introduction

HPC Sphere was established to cater to the huge gap found in the services side of high processing data from the domains of Computational Finance, Weather Modeling, and Image Processing, Web Development, Software Development, etcetera.

HPC Sphere has been in business of niche technology of supercomputing/ high performance computing since its inception. The team possesses specialization in computer architecture, parallel computing and GPU computing.

Some of the latest technological tools for web based application developments which have been adopted by our team are – HTML5, CSS, JSON, XML, Flash, SOAP, REST, JavaScript, AngularJS, NodeJS, MVC framework, JQuery, WCF services, SOA, PHP, .NET, C#, MySQL, SQL server administration, UI design, Photoshop, Dreamweaver etcetera.

HPC Sphere provides services to quite a range of class of industries for their varied application needs – Web Application Development, Outsource Website Development, Software Development Outsourcing, Custom Application Development, Outsourced Product Development, Web and Enterprise Portal Development, Business and Community Portal, PHP Web Development, .NET Development, E-Commerce Solutions, B2B and B2C Portal development and much more to help in your business growth.

HPC Sphere also provides Cloud based integrated service for the Web applications for the visionary clients.

List of Tables

TABLE NAME

TABLE SNAPSHOT

ATTENDANCE
_TABLE

CHECKLIST

EMPLOYEES

LOGIN

Empld	AttendanceDate	AttendanceDay	EntryTime	ExitTime
HPCS17001	2017-04-19	Wednesday	09:03	18:41
HPCS17001	2017-04-20	Thursday	09:07	18:35
HPCS17001	2017-04-21	Friday	08:59	19:11
HPCS17001	2017-04-24	Monday	09:02	18:54
HPCS17001	2017-04-25	Tuesday	09:04	18:44
HPCS17001	2017-04-26	Wednesday	09:12	18:40
HPCS17001	2017-04-27	Thursday	09:26	19:30
HPCS17001	2017-04-28	Friday	09:10	18:43
HPCS17001	2017-05-01	Monday	09:10	18:40
HPCS17001	2017-05-02	Tuesday	09:13	18:35
HPCS17001	2017-05-03	Wednesday	09:11	18:45

serialNo	EmployeeID	name	hpcs_email_ID	prepare_laptop	email_social	email_instructions	em
5	HPCS17001	Yash	1	0	0	0	0
7	HPCS17002	abcbabc	0	0	0	0	0

serialNo	imgPath	name	modeOfEmployment	Post	EmployeeID	DOJ	confirmDate	DOR
356	../uploads/chuck.jpg	Yashh	Full Time	Software Engineer	HPCS17001	2017-04-10	0000-00-00	0000-00-00
358	../uploads/	abcbabc	-	Software Engineer	HPCS17002	2017-12-31	0000-00-00	0000-00-00

loginId	loginPassword	Name	Empld
user	pass	tester	0
yash@hpcsphere.com	yash1234	Yash	

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5	Chapter 4 – Viewing Employees
6	Chapter 5 – Updating Employee Details
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8	Chapter 7 – Employee Checklists
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10	Conclusion
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HPC Sphere HR Panel

The HPC Sphere HR Panel is a specialized web engine that incorporates a handful of essential aspects to the working of an HR Manager. Part of the HR Manager's job is to evaluate the workers and develop methodologies to differentiate between them when it comes to their performance reviews. Keeping the same in mind, the HPC Sphere HR Panel provides the HR Manager with extensive and statistical tool in the form of an online engine.

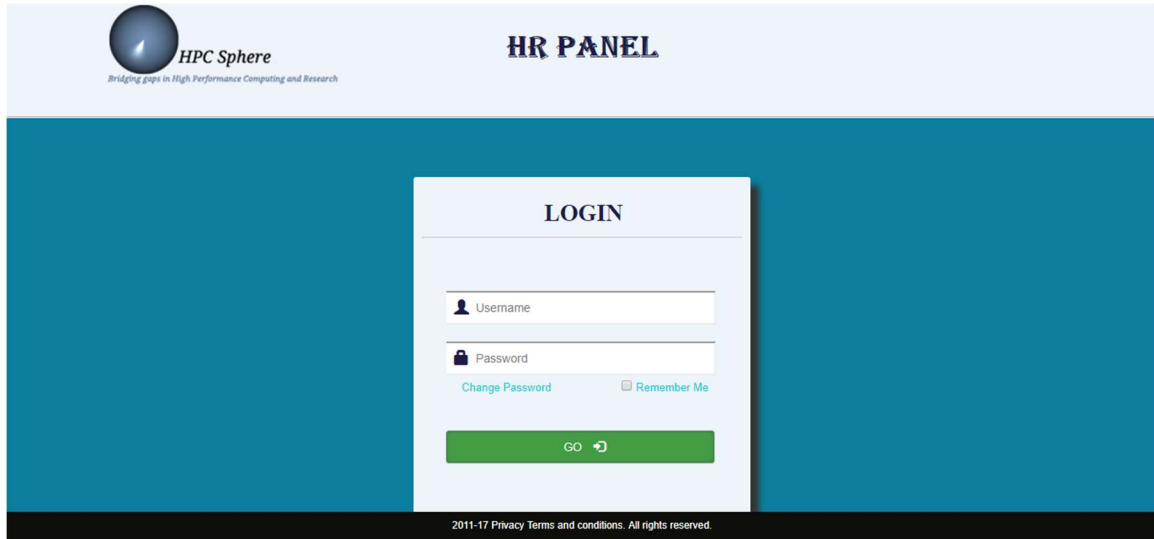
The web engine incorporates a number of features which have been discussed in the following sections of this document. The website also uses MD5 hashing to secure the passwords that are hence checked every time by converting the user's password input to MD5 version and henceforth checking against the original password's MD5. A lot of other security features such as timeout as well as securing of access of webpages through bare links by an infiltrator have been taken care of.

Salient Features of the HPC Sphere HR Panel

- Secure Login Panel
- Cookies Used to Keep User Logged In
- Secure Pages Which Can Only Be Accessed After Logging In
- Works as an Online Portal
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- Analysis of Employee Attendance
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- Passwords Protected in Hashed Format
- Planned Events and Schedules Imposed on Databases

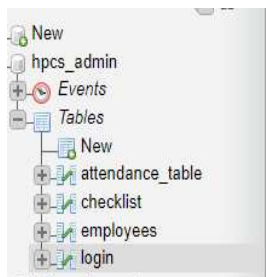
We shall explore each of the topics in detail further.

Chapter 1 – The Login Panel



The Login Panel

Above, is a picture of the login panel. Simplicity is the key to the interfacing here. The username and the password of the HR Manager is to be entered in here. These username and password pairs are stored in the Database named 'hpcs_admin'. Inside this database, a table exists with the name 'login' which contains the data for this login verification. A simple username = "user" and password = "pass" has been inserted into the table so that the project can be tested. Following is a picture which shows the structure and the data in the login table. (Note that MD5 hashing of the password has not been incorporated here since it would render the project unusable if a user fails to remember his password or login credentials in the crude sense, unless of course the user has knowledge of PHP and SQL).



#	Name	Type	Collation	Attributes	Null	Default	Comments	Extra	Action
1	loginId	varchar(500)	latin1_swedish_ci		No	None			Change Drop
2	loginPassword	varchar(500)	latin1_swedish_ci		No	None			Change Drop
3	Name	varchar(200)	latin1_swedish_ci		No	None			Change Drop
4	Empld	varchar(200)	latin1_swedish_ci		No	None			Change Drop

Check all With selected: Browse Change Drop Primary Unique Index

Structure of Table 'login'

✓ Showing rows 0 - 1 (2 total, Query took 0.0309 seconds.)

```
SELECT * FROM `login`
```

☐ Show all | Number of rows: 25 ▼ | Filter rows: S

+ Options

	loginId	loginPassword	Name	Empld
<input type="checkbox"/> Edit Copy Delete	user	pass	tester	0
<input type="checkbox"/> Edit Copy Delete	yash@hpcsphere.com	yash1234	Yash	

Data in Table 'login'

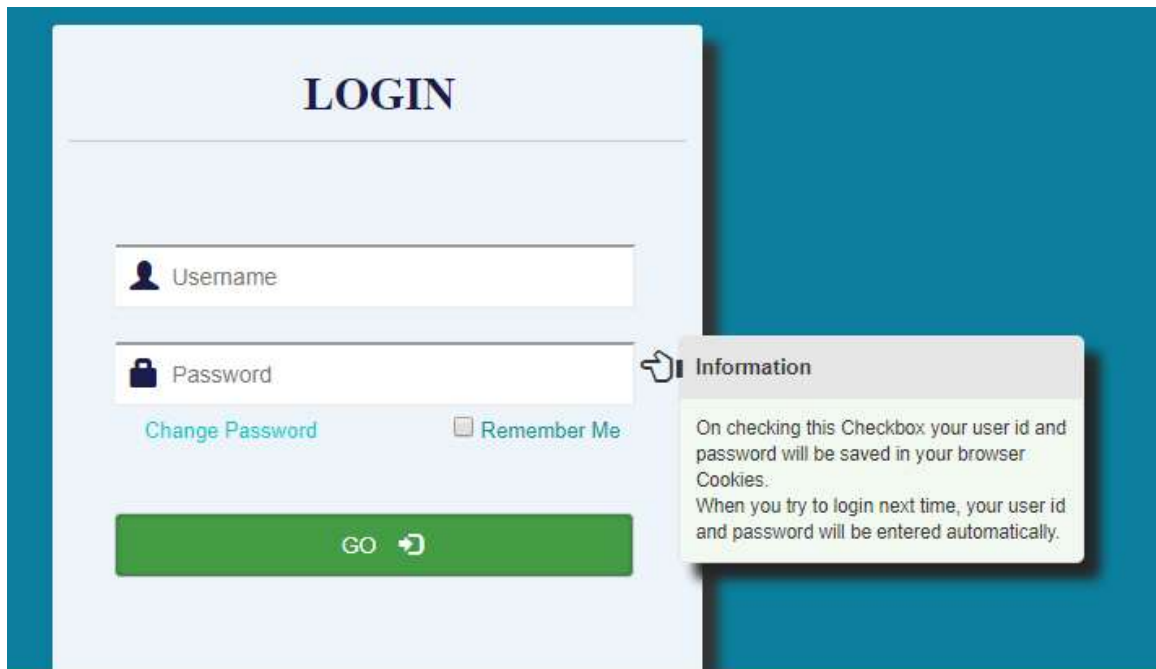
These pictures clearly show the structure as well as the currently present data which can be used by the tester to log into the website and access other features.

Some other features such as Change Password and Remember me have also been incorporated. These can be seen as shown under:

The screenshot displays the HPC Sphere HR Panel interface. A modal window titled "Change Password" is open, featuring the HPC Sphere logo and tagline. The form contains three input fields: "Username" (with a user icon), "Old Password" (with a lock icon), and "New Password" (with a lock icon). A "Change Password" button is located at the bottom right of the modal.

Change Password Implementation

Here, the password of the user is updated through the panel into the `login` table in the `hpcs_admin` database. Users can easily access this to change their current passwords.



The image shows a web interface for a login page. At the top, the word "LOGIN" is displayed in a large, bold, dark blue font. Below it, there are two input fields: "Username" with a person icon and "Password" with a lock icon. To the right of the "Password" field is a checkbox labeled "Remember Me". Below the "Remember Me" checkbox is a link that says "Change Password". At the bottom of the form is a green button with the text "GO" and a right-pointing arrow. To the right of the form, there is a tooltip box with a hand icon pointing to it. The tooltip has a title "Information" and contains the following text: "On checking this Checkbox your user id and password will be saved in your browser Cookies. When you try to login next time, your user id and password will be entered automatically."

Remember Me Implementation

Here, on checking of this option, the user's login credentials are saved into the local machine in the form of cookies through which the user doesn't get logged out (or he doesn't need to enter the credentials to log in, specifically every time he visits the website, the credentials will be present there in the respective fields). The user will have to re login once he logs out and then again tried to log in. The user will also have to re login if the session times out.

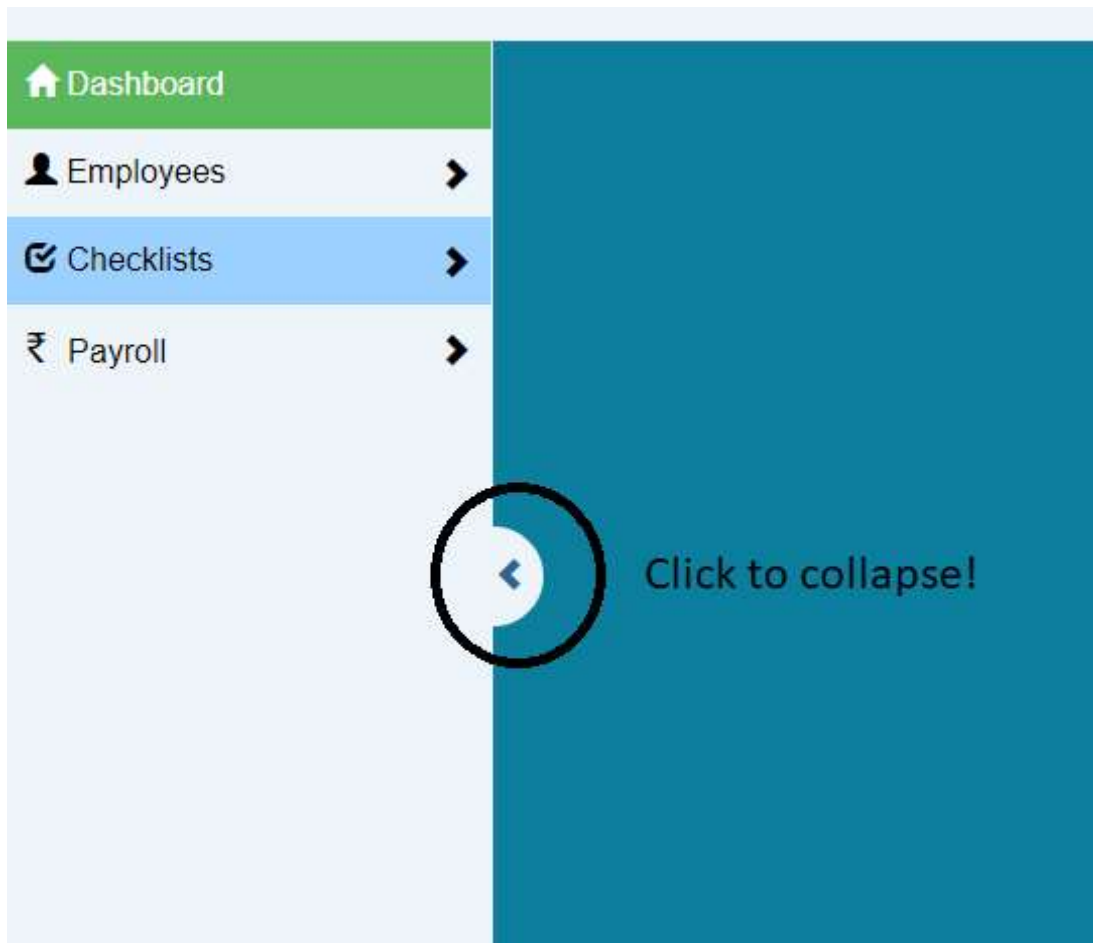
Chapter 2 – Inside The HR Panel



The HR Panel

Inside the HR Panel, the user is redirected to the Dashboard. Here, the Header makes its first appearance. We can see the header says HR Panel along with a simple logo of HPC Sphere on the top left. Next, the user is identified and is Welcomed on the top right with his name. Also, a Log Out button can be seen on the bottom right of the header.

Next, we note that a Navbar has been provided to the HR Manager so that he can easily browse through the website without searching for a website map at each step. The navbar is adjustable and can be hidden by clicking on the left arrow glyphicon that can be seen on the mid right portion of the navbar. Once hidden, it can again be resuscitated by clicking on the right arrow button which shows as soon as the user places his mouse to the left most part of the screen. The Navbar incorporated several Menus and Sub Menus, each of which we will see in the upcoming chapters. The following pictures show the hiding property of the Navbar.



Collapsibility feature

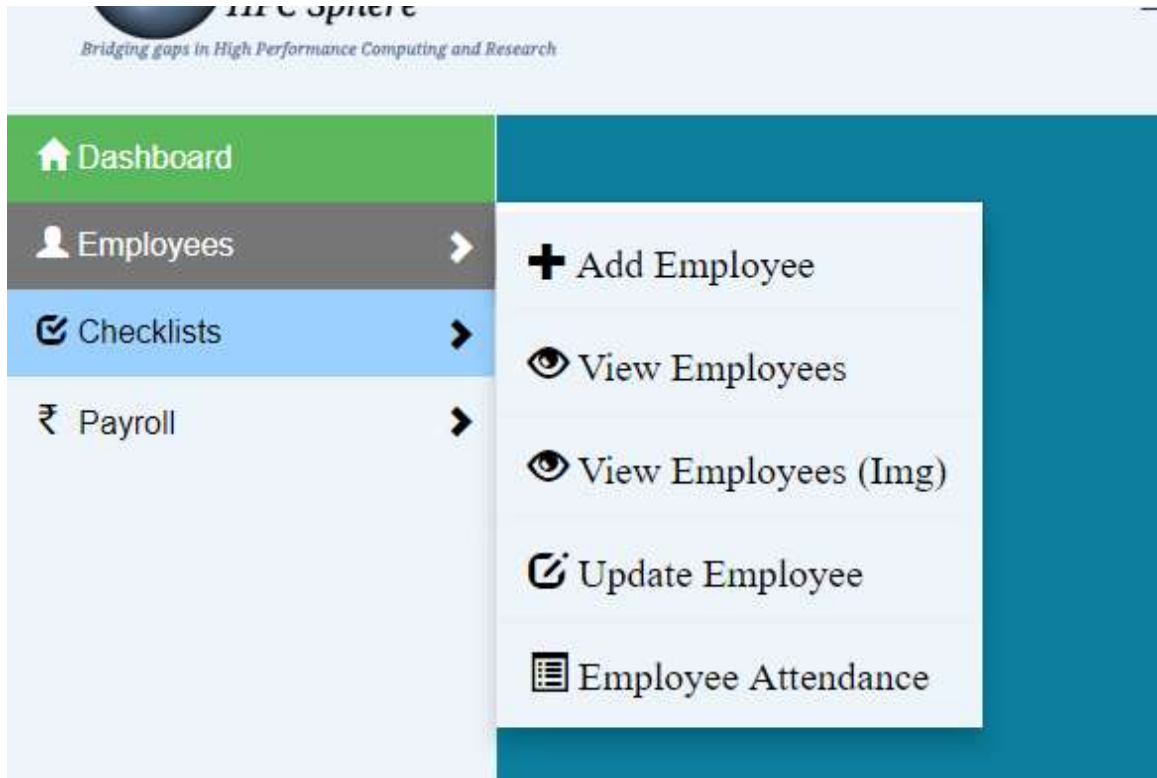
The next stage is shown in the next picture.



Restore Navbar Button

The navbar can be restored by clicking the right arrow glyphicon.

Chapter 3 – Adding New & Old Employees



The Employees Menu

On hovering over the 'Employees' section on the Navbar, the submenu items show up. The first item in this menu is Add Employee. On clicking on this menu, the following menu shows up.



The menu consists of several sections of scroll down menus. These can be opened up by clicking on them. The following happens on clicking on 'Basic Details'.

Checklists

₹ Payroll

Basic Details

Employee ID *

Official Email ID *

Official Email Password *

Skype ID *

Skype Password *

Date of Joining *

[Copy To Clipboard](#)

General Details

Personal Details

2011-17 Privacy Terms and conditions. All rights reserved.

Basic Details (Enlarged)

The red asterisk denotes that the fields must be filled for an employee to be added to the database. In other words, these fields are mandatory fields. We will see each of the subsections enlarged after taking a short detour to the 'Copy to Clipboard' button.

This button copies the credentials in a string for further use by the HR Manager. A sample can be seen below:

Basic Details

Employee ID *

Official Email ID *

Official Email Password *

Skype ID *

Skype Password *

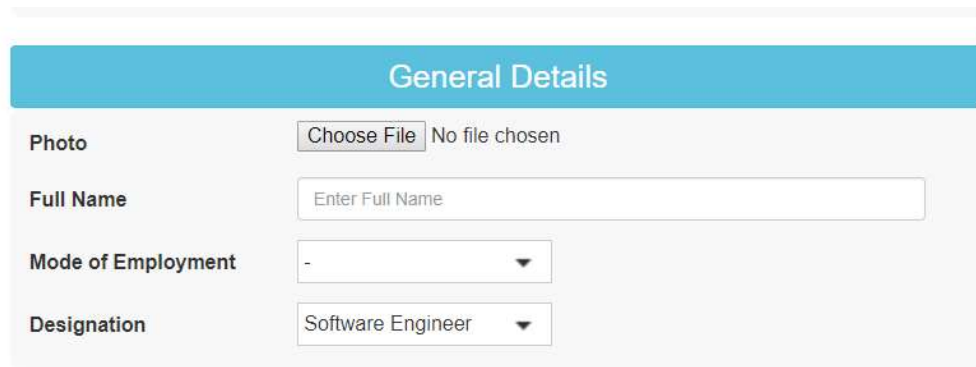
Date of Joining *

[Copy To Clipboard](#)

These credentials are now copied to clipboard. We shall paste the output below:

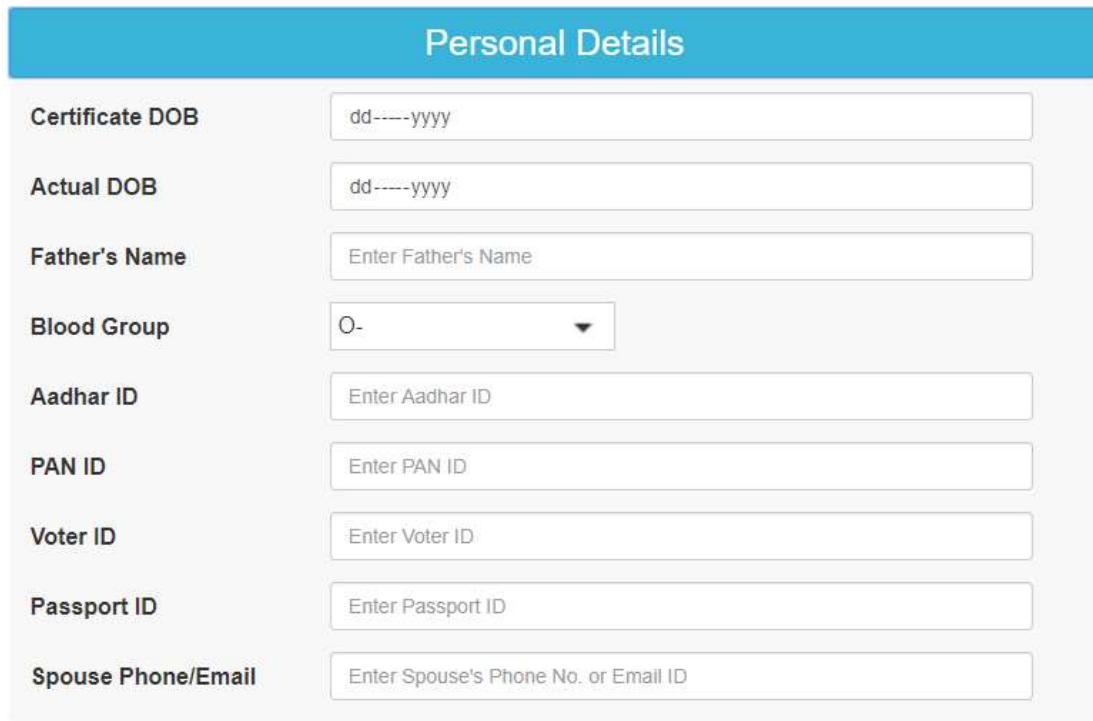
Employee ID: HPCS17003 Official Email ID: NewEmail@kdd.com Official Email Password: passswiei Skype ID: SkypeId123 Skype Password: password Date of Joining: 2017-09-29

Next, all of the other subsections have been pictured as below:



The screenshot shows the 'General Details' section of a form. It has a blue header with the text 'General Details'. Below the header, there are four rows of form fields: 'Photo' with a 'Choose File' button and 'No file chosen' text; 'Full Name' with a text input field containing 'Enter Full Name'; 'Mode of Employment' with a dropdown menu showing '-'; and 'Designation' with a dropdown menu showing 'Software Engineer'.

This is the general details section (expanded). The general details as seen above can be entered in the pertinent fields here. Also, a picture can be uploaded here.



The screenshot shows the 'Personal Details' section of a form. It has a blue header with the text 'Personal Details'. Below the header, there are nine rows of form fields: 'Certificate DOB' with a date input field 'dd-----yyyy'; 'Actual DOB' with a date input field 'dd-----yyyy'; 'Father's Name' with a text input field 'Enter Father's Name'; 'Blood Group' with a dropdown menu showing 'O-'; 'Aadhar ID' with a text input field 'Enter Aadhar ID'; 'PAN ID' with a text input field 'Enter PAN ID'; 'Voter ID' with a text input field 'Enter Voter ID'; 'Passport ID' with a text input field 'Enter Passport ID'; and 'Spouse Phone/Email' with a text input field 'Enter Spouse's Phone No. or Email ID'.

Personal Details Section

Important Dates	
Confirm Date	<input type="text" value="dd-----yyyy"/>
Date of Registration	<input type="text" value="dd-----yyyy"/>
Training Start Date	<input type="text" value="dd-----yyyy"/>
Training Completion Date	<input type="text" value="dd-----yyyy"/>

Important Dates (Expanded)

Contact Details	
Primary Contact No.	<input type="text" value="Enter Primary Contact Number"/>
Emergency Contact No.	<input type="text" value="Enter Emergency Contact Number"/>
Present Address	<input type="text" value="Enter Present Local Address"/>
	<input type="text" value="Enter City Name"/>
	<input type="text" value="Enter Country Name"/>
Permanent Address	<input type="text" value="Enter Permanent Address"/>
	<input type="text" value="Enter City Name"/>
	<input type="text" value="Enter Country Name"/>
<input type="checkbox"/> Same as above	
Personal Email	<input type="text" value="Enter Personal Email ID"/>

Contact Details (Expanded)

Banking Details

Bank Account Number

Enter Bank Account Number

Account Type

☒ Savings ☐ Checking ☐ Interest-Bearing

IFSC Code

Enter IFSC Code

Bank Name

Enter Bank Name

Bank Address

Enter Bank Address

Education Details

Salary Details

Register

Banking Details (Expanded)

Education Details

10th Marks

Enter Tenth Percentage

12th Marks

Enter Twelfth Percentage

Degree Name

Enter Degree Name

Degree Marks

Enter Degree Percentage

Passing Year

Enter Passing Year

Salary Details

Register

Education Details (Expanded)

Salary Details

Current Salary

Enter Current Salary

Register

Salary Details (Expanded)

This concludes our overview to adding a new employee. Note that the employee ID is auto generated depending upon the employee's year of adding and the number of employees already added in that year.

Thus, to add an old employee to the database, select the 'Old Employee' bullet on top of the form. This gives us an additional option of selecting the year of addition of an employee through which an algorithm calculates the proper Employee ID for the employee. This can be shown as follows:

HR PANEL

and Research

Add

☐ New Employee

☒ Old Employee

Basic Details

Joining Year *

2010

Employee ID *

HPCS10001

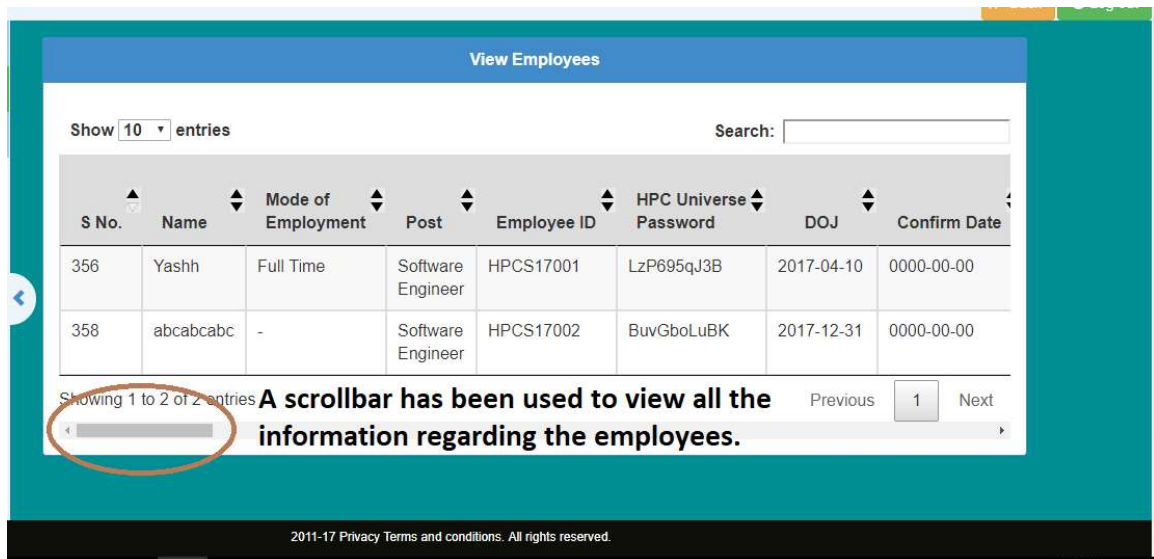
Note that changing the year will automatically auto generate a new Employee ID as per that year and the number of employees from that year.

Chapter 4 – Viewing Employees





Two different methodologies to view the employee have been implemented. The first one shows the employees in a jQuery Datatable without the employee image.

The second one shows the employee details in the jQuery data table with the images of the employees. This can be very crucial at times when bulk number of employees are kept track of and at times viewing their photos falls out of context or purpose.



View Employees (Without Image)

View Employees								
Show 10 entries		Search: <input type="text"/>						
S No.	Photo	Name	Mode of Employment	Post	Employee ID	HPC Universe Password	DOJ	Confirm Da
356		Yashh	Full Time	Software Engineer	HPCS17001	LzP695qJ3B	2017-04-10	0000-00-00
358		abcbabcabc	-	Software Engineer	HPCS17002	BuvGboLuBK	2017-12-31	0000-00-00

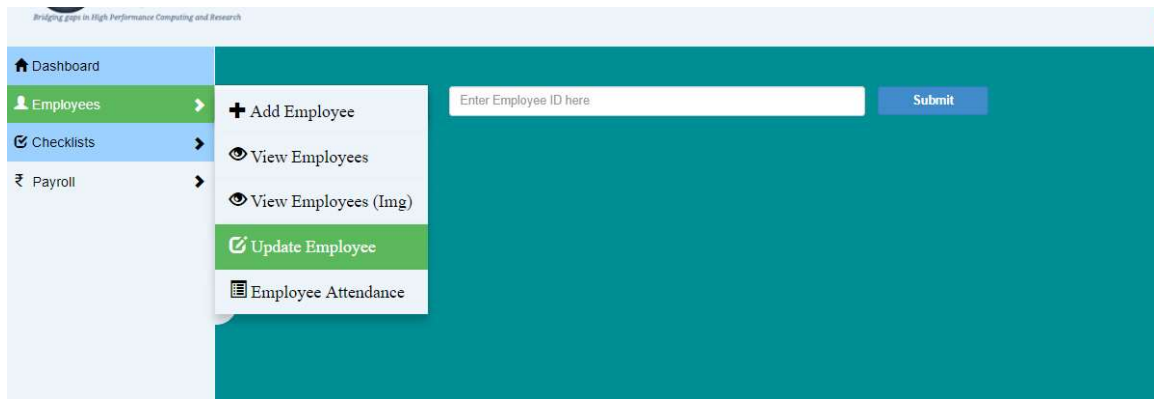
Showing 1 to 2 of 2 entries

Previous 1 Next

View Employees (With Image)

Here, mainly, the data has been fetched from the database and all the employees with their data have been arranged into rows, which the HR Manager can access without procuring the knowledge of any kind of DBMS or SQL.

Chapter 5 – Updating Employee Details

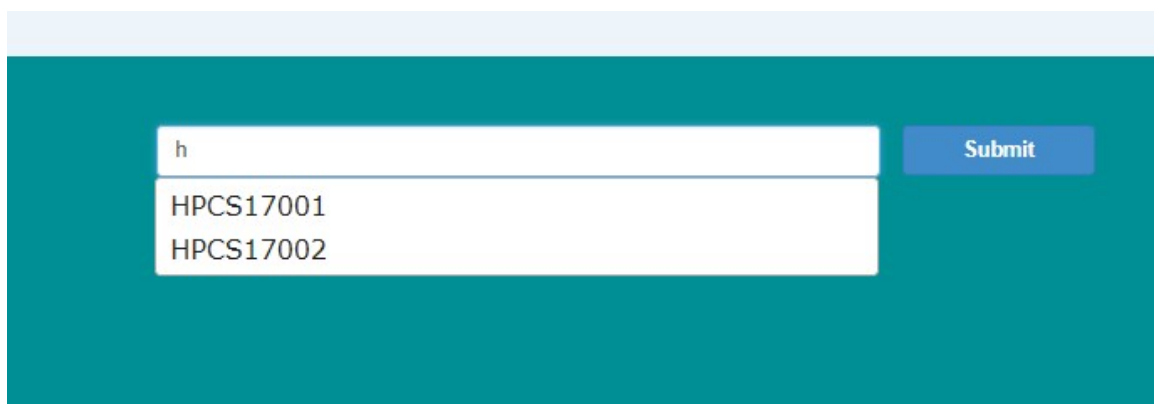


Update Employee Portal

Here, the HR Manager can update any employee's details. The employee ID is entered which is bound to be shown up using AutoSuggest functionality that has been implemented here.



If no such user exists



Auto Suggest

Update Employee

Basic Details

Employee ID *	<input type="text" value="HPCS17001"/>
Official Email ID *	<input type="text" value="abc@askdmlkm.comuasd"/>
Official Email Password *	<input type="text" value="asdlklm"/>
Skype ID *	<input type="text" value="3wkm21"/>
Skype Password *	<input type="text" value="23eklm"/>
Date of Joining *	<input type="text" value="10-Apr-2017"/>

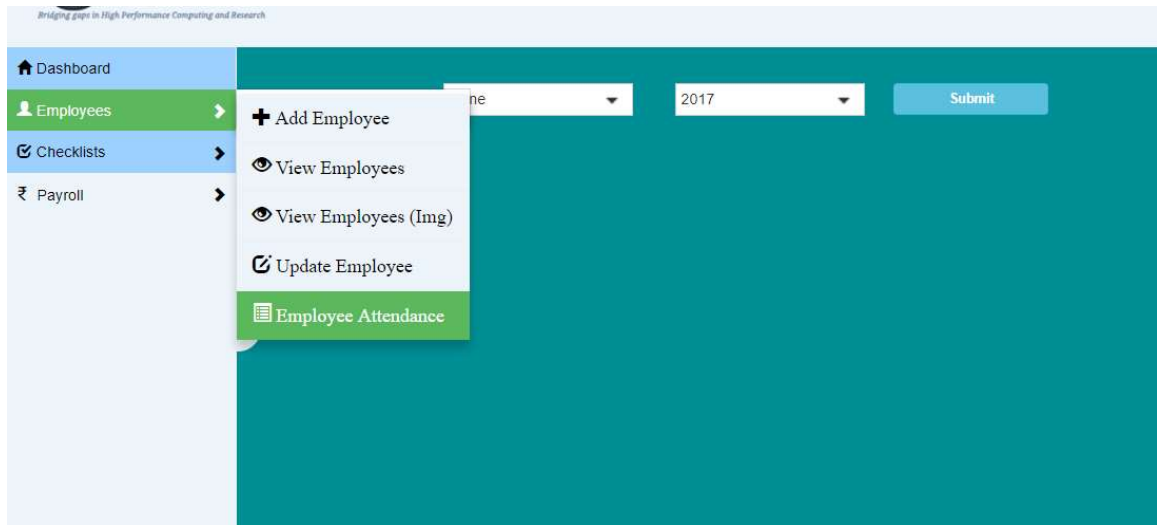
Copy To Clipboard

General Details

Update Employee Portal

The details of the employee are already present in the respective fields. The employee's profile can be updated by changing these fields and clicking update at the bottom of the panel.

Chapter 6 –Viewing Employee Attendance



The employee attendance can be checked for any month by checking the employee attendance option in the Employees sub-menu. A drop down appears in which the year and the month needs to be selected for viewing the employee attendances.

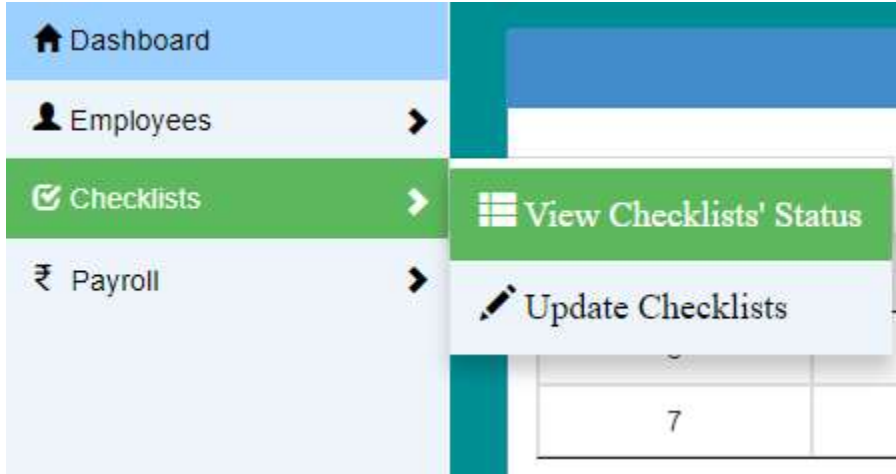
A screenshot of the 'Employee Attendance' table. At the top, there are two dropdown menus: one for 'June' and one for '2017', followed by a blue 'Submit' button. Below this is a table with the title 'Employee Attendance'. The table has 11 columns: 'Employee Name', 'Date', and nine numbered columns (1-9). The table contains data for two employees: 'Yashh' and 'abcabcabc'. For 'Yashh', the data shows entry and exit times, hours, and attendance status (Absent) for each day. For 'abcabcabc', the data shows 'No data found' for each day.

Employee Attendance										
Employee Name ↓	Date →	1	2	3	4	5	6	7	8	9
Yashh	Entry Time	12:55	09:17	Weekly Off	Weekly Off	09:03	Absent	Absent	Absent	Absent
	Exit Time	19:00	18:54	Weekly Off	Weekly Off	18:45	Absent	Absent	Absent	Absent
	Hours	6.08	9.62	Weekly Off	Weekly Off	9.7	Absent	Absent	Absent	Absent
abcabcabc	Entry Time	12:55	09:17	Weekly Off	Weekly Off	09:03	No data found	No data found	No data found	No data found
	Exit Time	19:00	18:54	Weekly Off	Weekly Off	18:45	No data found	No data found	No data found	No data found
	Hours	6.08	9.62	Weekly Off	Weekly Off	9.7	No data found	No data found	No data found	No data found

Employee Attendance Table

In this table, all of the employees with their attendance can be seen accordingly. All of this data is to be stored in the database through the attendance portal every day when the employee arrives at work.

Chapter 7 – Employee Checklists



Employee Checklist is essentially a list of things that the company needs to attend to for every employee. For instance, providing the employee with a laptop, a notebook, a pen, adding him to the skype group, etcetera. This is also kept track of by the HR Manager through the HPC Sphere HR Panel. First, each and every employee's checklist is automatically accounted for every time an employee is added to the database. His checklist needs to be completed to change the overall checklist status to 'Complete' from 'Pending'. This is done using MSQL Events. If the checklist has all of the statuses completed, the overall status of the checklist is set to 'Complete'. This overall status can be seen in the Checklists menu > View Checklist's Status.

The following depicts the same:

A screenshot of a web application showing a table titled 'Employee Checklist'. The table has four columns: 'S No.', 'Employee ID', 'Employee Name', and 'Checklist Status'. There are two rows of data. The first row has '5' in the first column, 'HPCS17001' in the second, 'Yash' in the third, and 'Pending' in the fourth. The second row has '7' in the first column, 'HPCS17002' in the second, 'abcbabc' in the third, and 'Pending' in the fourth. Above the table, there is a 'Show 10 entries' dropdown and a 'Search:' input field. Below the table, there is a pagination bar showing 'Showing 1 to 2 of 2 entries' and 'Previous 1 Next' buttons.

S No.	Employee ID	Employee Name	Checklist Status
5	HPCS17001	Yash	Pending
7	HPCS17002	abcbabc	Pending

View Employee Checklist's Status

Finally, the checklists will be updated through the update checklists page. This can be reached from the Checklists Menu > Update Checklists option.

The following is a sample from the same page:

Update Checklist

1	Create HPCS Email id	<input checked="" type="checkbox"/>
2	Prepare Laptop (Use Checklist NSSC)	<input type="checkbox"/>
3	Send email for joining hpcsphere on social media	<input type="checkbox"/>
4	Send email for general instructions	<input type="checkbox"/>
5	Send email mql4 book (chm and links) to docs/book on the mql4 & mql5 and slides	<input type="checkbox"/>
6	Send email for team's skype id and email id	<input type="checkbox"/>
7	Send email for Joining process (Docs+Details)	<input type="checkbox"/>
8	Create google drive account using hpcs email id and email	<input type="checkbox"/>
9	Fill new joinee credentials details sheet	<input type="checkbox"/>
10	Collect documents (using JDC) (10,12, Marks sheet + pass certificate)(8 sem mark sheet) (Btech Provisional)(PAN,permanent address proof)	<input type="checkbox"/>
11	Initial verification by Anand. If All docs are not available then Send employee back home	<input type="checkbox"/>
12	Give Original docs to satyam	<input type="checkbox"/>
13	Give him laptop, laptop id and pwd, outlook, webmail access	<input type="checkbox"/>
14	Give Note Book and Pen to new employee	<input type="checkbox"/>
15	Welcome greeting card to new employee, get signed by team	<input type="checkbox"/>
16	Prepare training schedule and email	<input type="checkbox"/>
17	Welcome meeting	<input type="checkbox"/>
18	Send welcome email	<input type="checkbox"/>
19	Create Skype id	<input type="checkbox"/>
20	Ping his skype id and email in hpcs skype group	<input type="checkbox"/>
21	Add him in hpcs skype group	<input type="checkbox"/>
22	Give all the joining docs to employee (From Google Drive folder)	<input type="checkbox"/>
23	Sign on each and every page of every docs	<input type="checkbox"/>
24	Check entry in performa sheet	<input type="checkbox"/>
25	Verify personal contact no	<input type="checkbox"/>
26	Create a new file for employee	<input type="checkbox"/>
27	Keep signed docs in the document file	<input type="checkbox"/>
28	Add bank account details in kotak	<input type="checkbox"/>
29	Add employee attendance sheet	<input type="checkbox"/>
30	Fill up employee details sheet	<input type="checkbox"/>
31	Add in employee salary sheet	<input type="checkbox"/>
32	Add Birthday in Gmail Calander	<input type="checkbox"/>
33	Add Marriage anniversary in gmail calander	<input type="checkbox"/>
34	Add year completion in gmail calendar	<input type="checkbox"/>
35	Add 1.5 Year completion in gmail calendar	<input type="checkbox"/>
36	Add probation completion in gmail calendar	<input type="checkbox"/>
37	Add in hpcsphere whatsapp group	<input type="checkbox"/>
38	Verify original docs by Satyam	<input type="checkbox"/>
39	Return Docs to employee on same day	<input type="checkbox"/>
40	Update google map with new team member's address	<input type="checkbox"/>
41	Create wordpress account and email to employee	<input type="checkbox"/>
42	Create OCL sheet and share OCL sheet with employee	<input type="checkbox"/>
43	Salary review after one month add in gmail calendar	<input type="checkbox"/>

Chapter 8 – Employee Payroll



View Payroll

Finally, the HR Manager can view the Employees' payroll through this page. Again, the Employee ID can be put in using auto suggest, and the pertinent employee payroll details will show up using AJAX.



Auto Suggest



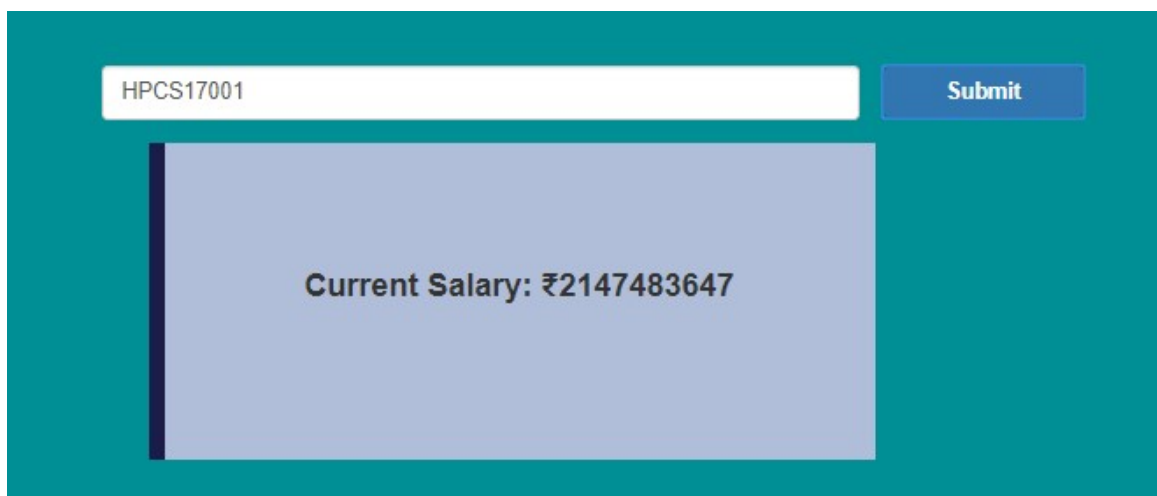
asd

Submit

User does not exist! Please enter a valid username.

A screenshot of a web application interface with a teal background. At the top, there is a white input field containing the text 'asd' and a blue button labeled 'Submit'. Below the input field, a red error message reads 'User does not exist! Please enter a valid username.'. Underneath the message is a large, empty light blue rectangular area.

If Employee doesn't exist



HPCS17001

Submit

Current Salary: ₹2147483647

A screenshot of a web application interface with a teal background. At the top, there is a white input field containing the text 'HPCS17001' and a blue button labeled 'Submit'. Below the input field, a large light blue rectangular area displays the text 'Current Salary: ₹2147483647'.

Payroll Details of Employee

Conclusion

To sum up, the HPC Sphere HR Panel can be an indispensable part of any company by helping out the HR Manager in uncountable ways. It helps the manager analyze the workers to a much better extent through which he can decide which employee has been the most valuable to the company, and on the contrary, which employee has been of negligible or derogatory influence to the company. Through these records, the HR Manager can also keep track of all the information that is to be kept about any employee rather than making notes or storing the same in a file processing structure. The HR Panel forms a very crucial part of any organisation and I believe, it can help boost the organisation's objectives as well as encourage the employees to work harder at the same time.

References/Bibliography

The following websites were referred during the study and development of this project:

- www.tutorialspoint.com
- www.stackoverflow.com
- www.w3schools.com