EPMS

Employee Management System

Dwayne Roark

Table of Contents

Table of Contents Cont.

Proposal

Problem statement:

Efficient employee management is an important goal for any company. Methods such as manual record-keeping or spreadsheets have their downfalls and are prone to input errors. They can also be time-consuming and hard to scale.

Objective:

This proposal aims to implement a solution that will streamline employee management with an easily scalable system that also implements a system of checks to help enhance data accuracy and provides a comprehensive solution for managing employee information.

System Requirements:

Tie together employee and employment attributes in a user-friendly interface. Employee attributes include things like name, sex, birth date, SSN, contact number, address, and email. Employment attributes include things like ID, hire date, location, and pay rate.

- This would allow HR to enter new employees quickly and correctly.
    - Database field constraints can be used to ensure data types and ranges.
- As well as allowing HR or managers to search for employees by different attributes.
    - Such as name or SSN.

Customer Base:

The customer base would be anyone performing HR/managerial functions in businesses, government, and educational institutions, ranging from small with around 10 employees to very large with 1000s or more.

Hardware Requirements:

A web server hosting a SQL database with network connectivity between end-user PCs and the web server.

Software:

The user interface (front end) will be a simple HTML/CSS web page with an Apache PHP back end communicating with a MariaDB database.

Network:

A typical company internal network of 100mbps or 1gbps is more than sufficient, with standard 99.99% SLA uptime.

Project/Development Plan:

Week 1-2: Server setup and installation, ensuring communication between front-end, back-end, and database. Database tables are established with attributes.

Week 3-4: General front-end design established and plan for communication through backend established.

Week 5-6: Authentication system established.

Week 7-8: Working test product and demo recorded for midterm.

Week 9-11: Implement improvements based on customer feedback.

Week 12-14: Writing test cases. Finalizing touches.

Week 15: Demo for final.

Customer Problem Statements & System Requirements

Customer Problem Statement:

Employee management is the act of logging employee personal information and company-specific information in a singular location. Employee attributes include things like name, sex, birth date, SSN, contact number, address, and personal email. Employment attributes include things like employee ID, hire date, location, and pay rate.

Efficient employee management is an important goal for any company. Methods such as manual record-keeping or spreadsheets have their downfalls and are prone to input errors. They can also be time-consuming and hard to scale. A proper employee management system (EMS) would include an easy-to-use interface that allows for data entry, employee lookup, entry modification, and record deletion.

Glossary of Terms:

EMS – Employee Management System

EID – Employee ID

SSN – Social Security Number

Pay Rate – List of predefined pay bands showing the current salary range of that employee.

Functional System Requirements:

Req Number	Priority Weight	Description
FR1	High	Data entry fields should be first name, last name, sex, birth date, SSN, contact number, address, email, EID, hire date, location, and pay rate.
FR2	High	First and last name fields should be limited to character-based input.
FR3	High	Sex input should be limited to M or F.
FR4	High	Birth date and hire date should be formatted DATE mm/dd/yyyy.
FR5	High	SSN should be formatted as 9-digit INT.
FR6	High	Contact number should be formatted as 10-digit INT.
FR7	High	Address and email should be formatted as VARCHAR.
FR8	High	EID should be formatted as 5-digit INT.
FR9	High	Location should be selected from a list of predefined company locations.

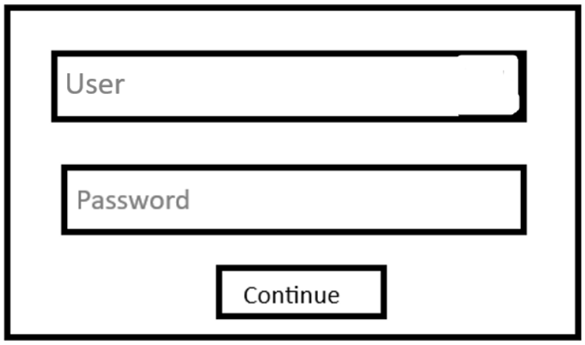
FR10	High	Pay rate should be selected from a list of predefined pay rates.
FR11	Med	The system should have 2 levels of authentication. Read and modify.
FR12	High	Search functionality that enables HR administrators to quickly locate and retrieve employee records based on any of the specified fields for efficient data access.

Non-Functional System Requirements:

Req Number	Priority Weight	Description
NR1	High	Scalability: The system should be scalable to accommodate an increasing number of employee records and adapt to the growing needs of the organization
NR2	Med	Interoperability: Ensure compatibility with existing HR systems, allowing seamless data exchange and integration with other enterprise applications.
NR3	High	User Interface Design: Design an intuitive and user-friendly interface for both HR administrators and employees, promoting ease of use and reducing the learning curve.
NR4	High	Data Integrity: Maintain high levels of data integrity, ensuring that employee information is accurate, consistent, and reliable.

User Interface Requirements:

Login (Med requirement): A simple username and password prompt referencing an internal database of users with access and their rights. In the real world, this would most likely be domain-based authentication or a much larger database of access roles, but that development is way outside of the scope of this simple example project.



Page layout (High requirement): I am looking to make a simple field of input style design that adds users to a table that is visible below the entry points. A search field will simply either skip to that table entry or reduce the size of the table to just the corresponding entries.

Search

EID	First Name	Last Name	Sex	Birth Date	SSN	Phone #	Address	Email	Hire date	Location|▼|	Pay Rate|▼|
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input

10254	Tom	Laff	M	1986/07/18	999999999	9371541234	123 Main St, Town, OH	blah@yahoo.com	2019/05/12	Lewisburg	E5
19482	Dave	Jones	M	1999/05/20	888888888	7653450194	567 Water St, Richmond , IN	blah@gmail.com	2020/04/15	Eaton	E9

Field Examples (Med Requirement): Each input field will have a grey text that will give an example of the expected input format.

11111	Name	Name	M Or F	yyyy/mm/dd	111111111	1111111111	123 Main Dayton, OH	blah@yahoo.com	yyyy/mm/dd

Messages (Med Requirement): Missing information or incorrect input information would show those fields as red after clicking submit if they do not match the correct format and a message to the user that says to check data fields. Or there will be a green success message for additions, edit, and deletions.

Error: Please verify format of attempted data entry. User was not added.

User added successfully.

User updated successfully.

User deleted successfully.

Functional Requirements Specification

Stakeholders:

- HR
- Payroll
- Managers
- Employees
- IT Administrators

Actors and Goals:

- Primary Actors
  - HR – The primary users of an employee management system would be the HR department. This would be a central database that can be used to store all the corresponding information for an employee. They will be responsible for add, deletions, and edits.
  - Payroll – The central database could be used by the payroll coordinator to track who works where, for how many hours, and in what pay band.
  - Managers – Could use this system to track who works in their departments and see their HR information.

- Secondary Actors
  - Employees – It is their data being tracked so ultimately; they have a hand in the system but it would be indirectly through HR.
  - IT– Could also add, delete, and edit if needed and troubleshoot issues with the system.
  - System – is responsible for holding the information entered by the HR department.

Use Cases:

HR (10)

-Add employee: To add a new employee to the system (2)

-Delete employee: Remove employee from the system (2)

-Edit employee: Change the information of an employee already in the database (2)

-Search for employee: Using attributes to search for an employee (2)

-Troubleshoot issues: Input or standardization issues can be looked at by HR (2)

Manager/payroll (2)

-Search for employee: Using one of the main attributes to search for an employee (2)

System (8)

-Authenticate login: Verify the user has access rights to information (2)

-Display search: If a search is done the system needs to return the correct information (2)

-Display login: Default landing page for username and password (2)

-Display information: Default page once logged into the system (2)

IT (14)

-Add a new location: If a new site were to open IT would be needed to add a new location to the database (2)

-Modify pay bands: If the scale were to change IT would be needed to modify the list of pay bands available (2)

-New user creation: If a new user needs access to the system IT would need to create this user (2)

-Troubleshooting: If any database issue were to occur IT would need to do this (2)

-Add employee: To add a new employee to the system if HR cannot or as part of troubleshooting (2)

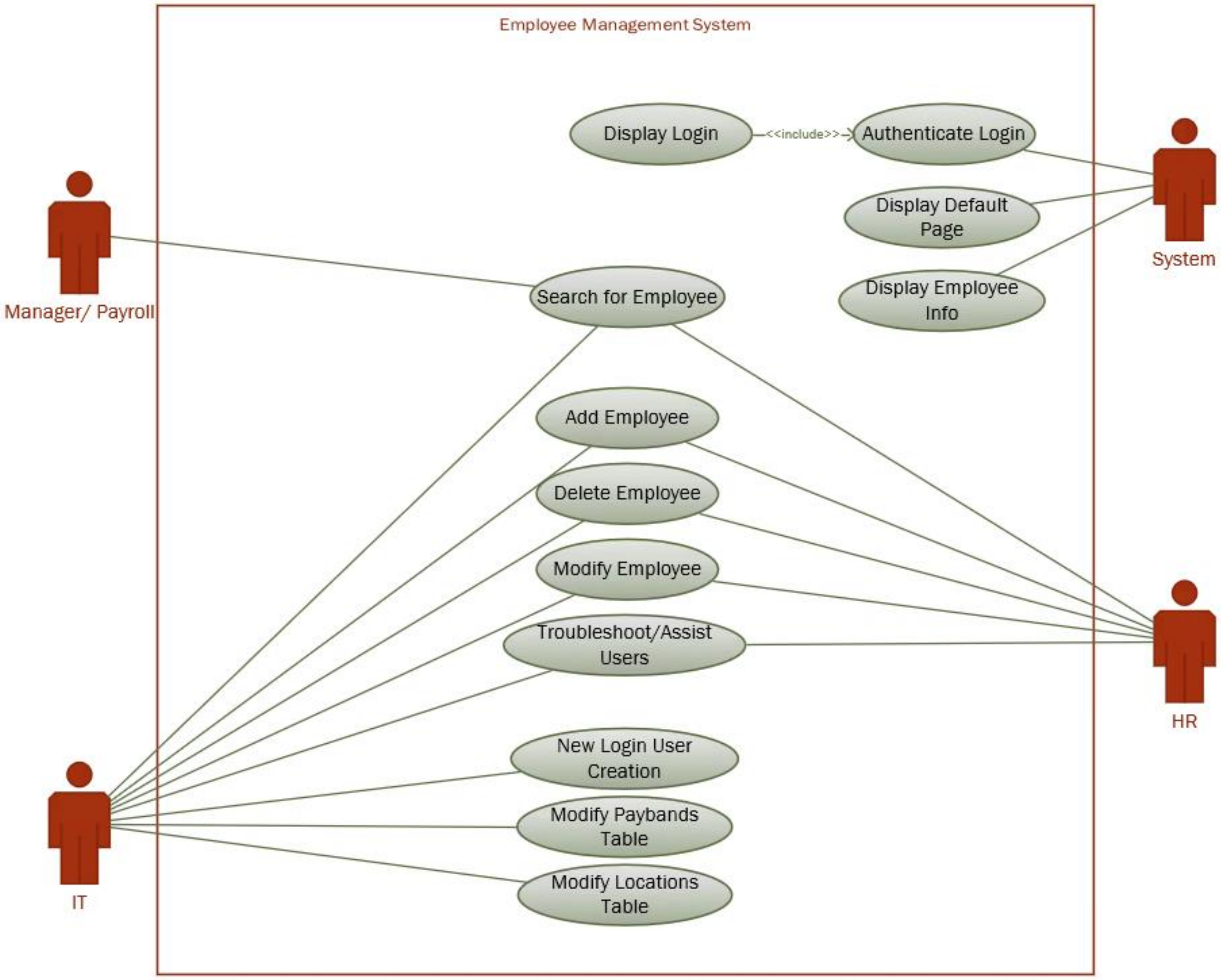
-Delete employee: Remove employee from the system if HR cannot or as part of troubleshooting (2)

-Edit employee: Change the information of an employee already in the database if HR cannot or as part of troubleshooting (2)

-Search for employee: Using attributes to search for an employee if HR cannot or as part of troubleshooting (2)

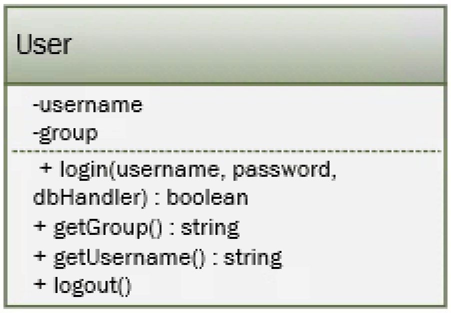
Use Case Diagram:

Display login information is included in the authentication.



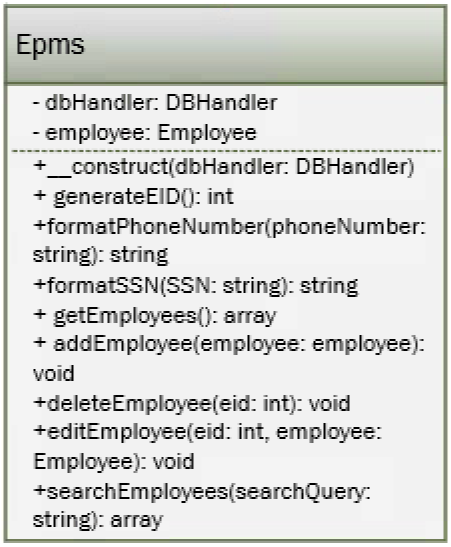
Class Diagram:

User - This class handles the authentication for login to the system



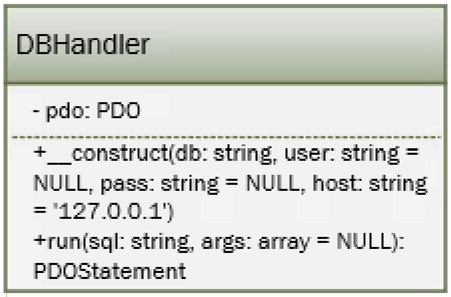
```
User
-username
-group
+ login(username, password,
dbHandler) : boolean
+ getGroup() : string
+ getUsername() : string
+ logout()
```

Epms - This is the primary class in the system. It contains the functions that will add, remove, edit, and search for employees in the database.



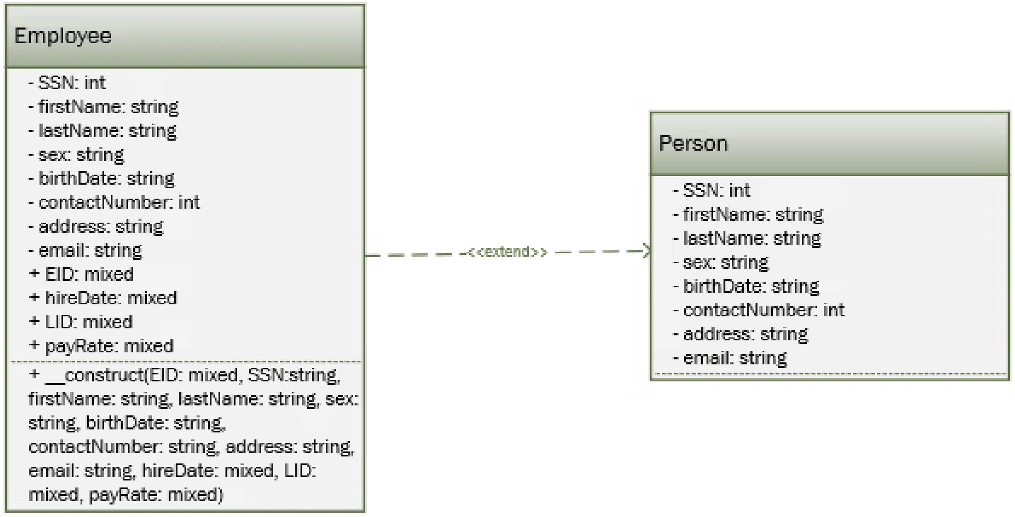
```
Epms
- dbHandler: DBHandler
- employee: Employee
+__construct(dbHandler: DBHandler)
+ generateEID(): int
+formatPhoneNumber(phoneNumber:
string): string
+formatSSN(SSN: string): string
+ getEmployees(): array
+ addEmployee(employee: employee):
void
+deleteEmployee(eid: int): void
+editEmployee(eid: int, employee:
Employee): void
+searchEmployees(searchQuery:
string): array
```

DBHandler - This class is responsible for taking user input from the Epms class and transferring it to the database as well as performing queries on the database.

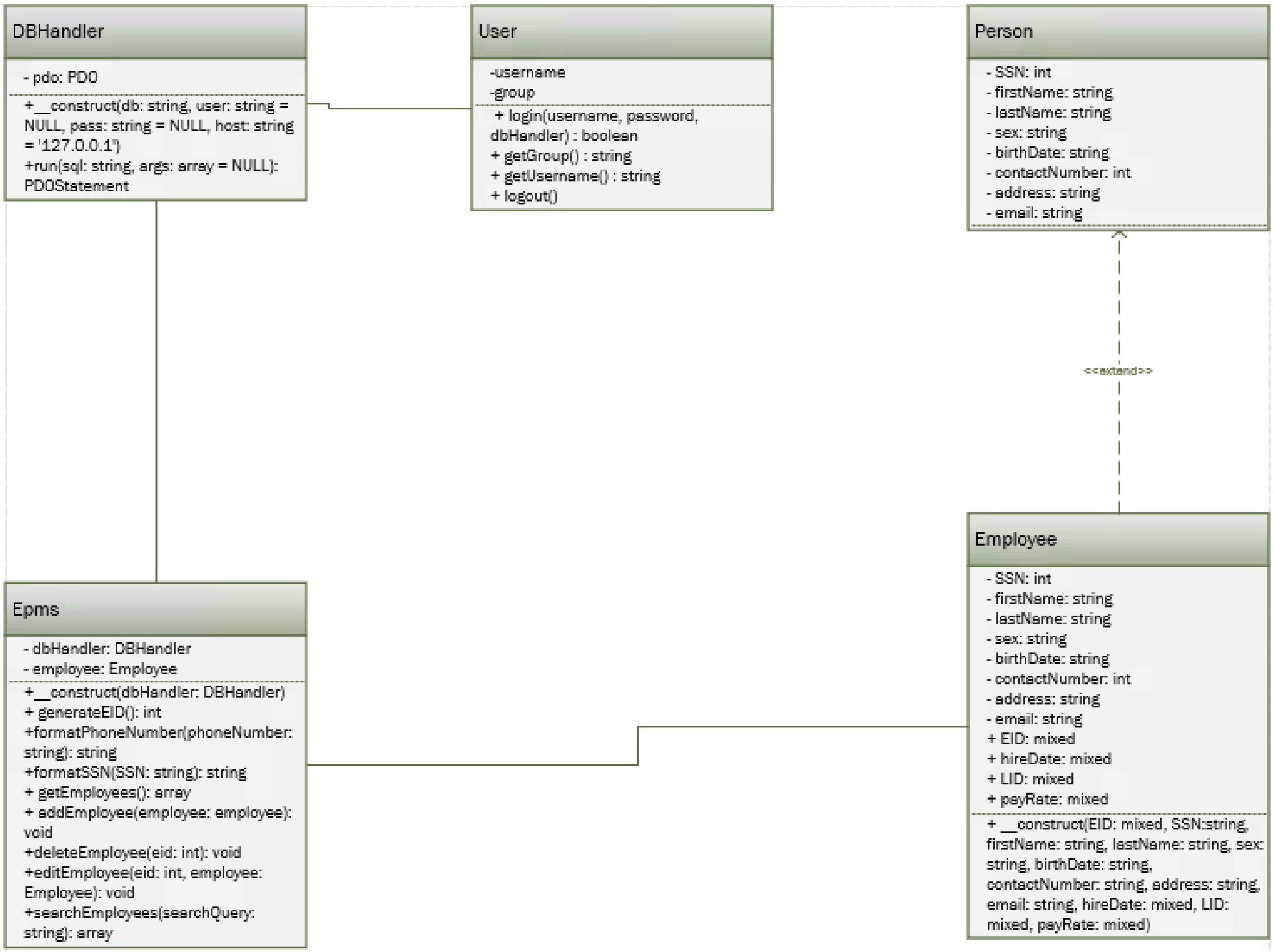


```
DBHandler
- pdo: PDO
+__construct(db: string, user: string =
NULL, pass: string = NULL, host: string
= '127.0.0.1')
+run(sql: string, args: array = NULL):
PDOStatement
```

Employee/Person - The Employee class is an extension of the Person class which is a general template for personal information. The Employee class is a more specific template that includes personal details plus additional information related to someone's job in the company.



Final


DBHandler
- pdo: PDO
+__construct(db: string, user: string = NULL, pass: string = NULL, host: string = '127.0.0.1')
+run(sql: string, args: array = NULL): PDOStatement
User
-username
-group
+ login(username, password, dbHandler) : boolean
+ getGroup() : string
+ getUsername() : string
+ logout()
Person
- SSN: int
- firstName: string
- lastName: string
- sex: string
- birthDate: string
- contactNumber: int
- address: string
- email: string
<<extend>>
Epms
- dbHandler: DBHandler
- employee: Employee
+__construct(dbHandler: DBHandler)
+ generateEID(): int
+formatPhoneNumber(phoneNumber: string): string
+formatSSN(SSN: string): string
+ getEmployees(): array
+ addEmployee(employee: employee): void
+deleteEmployee(eid: int): void
+editEmployee(eid: int, employee: Employee): void
+searchEmployees(searchQuery: string): array
Employee
- SSN: int
- firstName: string
- lastName: string
- sex: string
- birthDate: string
- contactNumber: int
- address: string
- email: string
+ EID: mixed
+ hireDate: mixed
+ LID: mixed
+ payRate: mixed
+ __construct(EID: mixed, SSN:string, firstName: string, lastName: string, sex: string, birthDate: string, contactNumber: string, address: string, email: string, hireDate: mixed, LID: mixed, payRate: mixed)

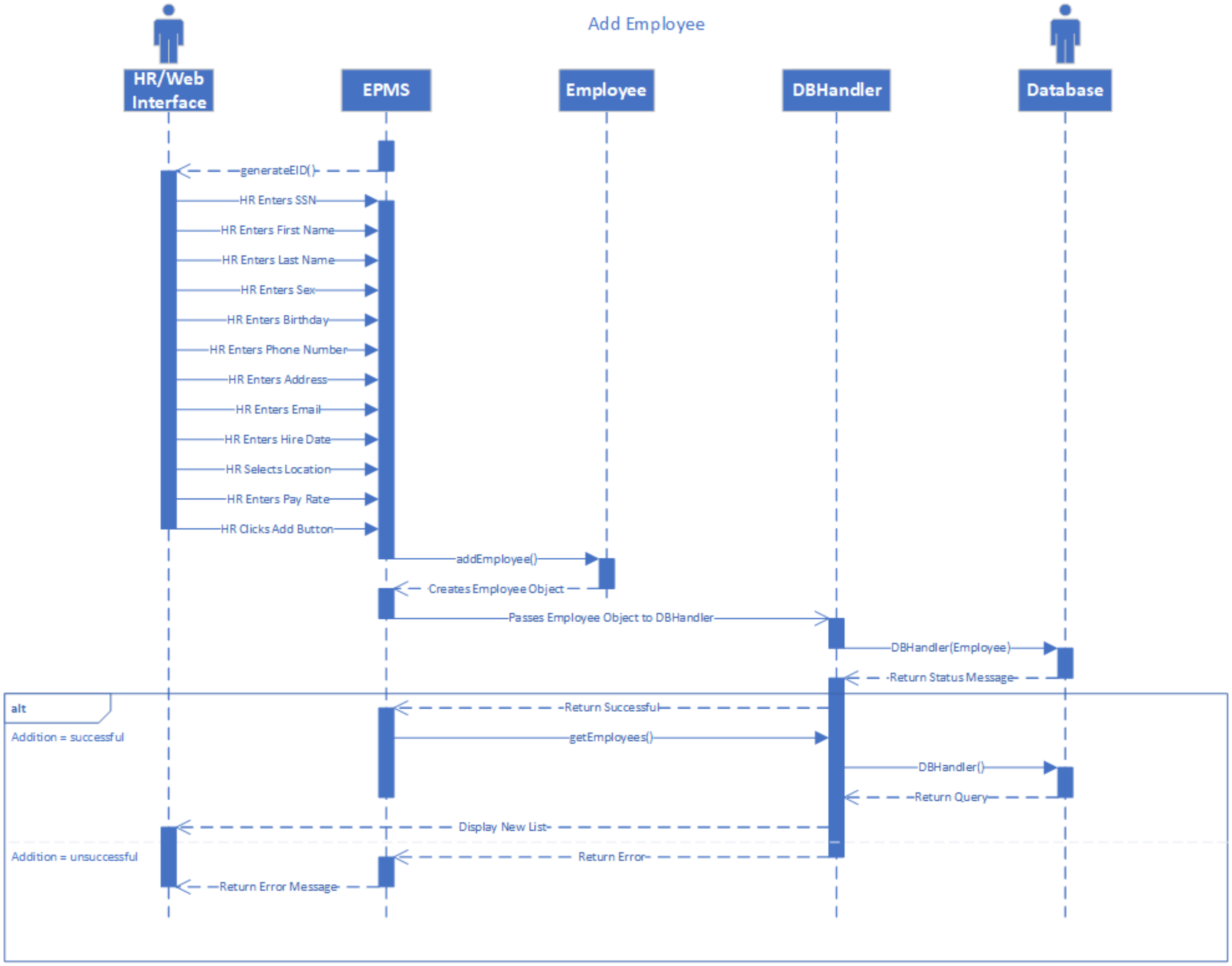
System Sequence Diagram and Activity Diagram

System Sequence Diagrams

Add Employee

Actor: HR
Objects: Interface, EPMS, Employee, DBHandler, Database

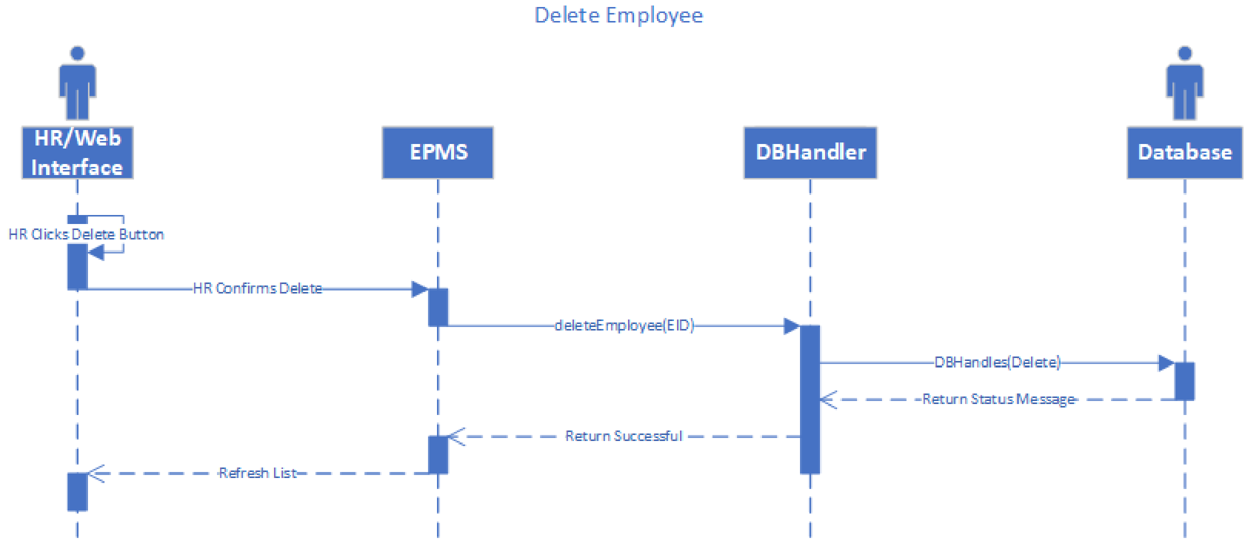
-HR enters employee information
-Employee object created
-Employee object passed to database using DBHandler
-If the employee is added the list refreshes and shows the employee
-If addition fails reason code is given



Delete Employee

Actor: HR
Objects: Interface, EPMS, Employee, DBHandler, Database

-HR clicks the delete button
-Page prompts confirmation
-EID sent for deletion from the database by DBHandler
-List refresh with employee missing from it



Activity Diagrams

Edit Employee

States:

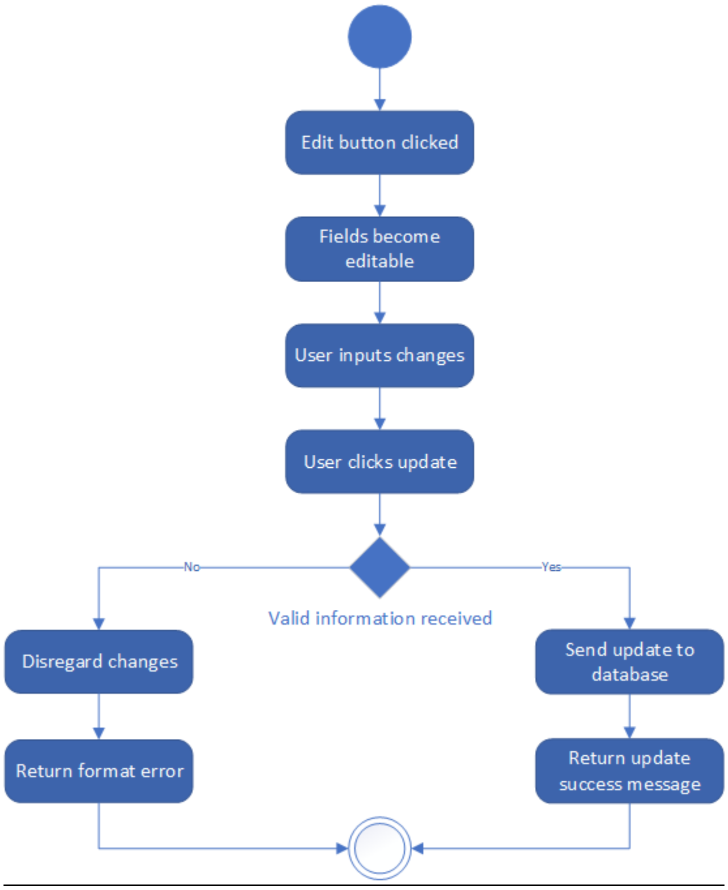
-Initial State: Original record exists in the database

-Final State: Existing entry is updated with new information

Actions:

HR clicks the edit button on an employee entry. The record is loaded in a modifiable state. Fields are updated by HR. The record is saved to the database in an updated fashion, or a format error is returned.

Edit Employee



Search Employee

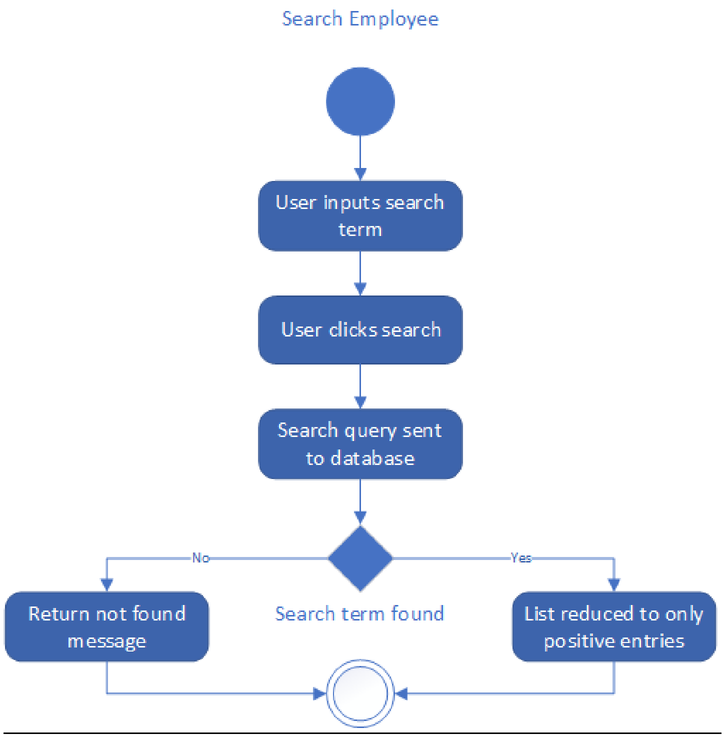
States:

-Initial State: A full list of employee records is shown

-Final State: Record with matching information is shown

Actions:

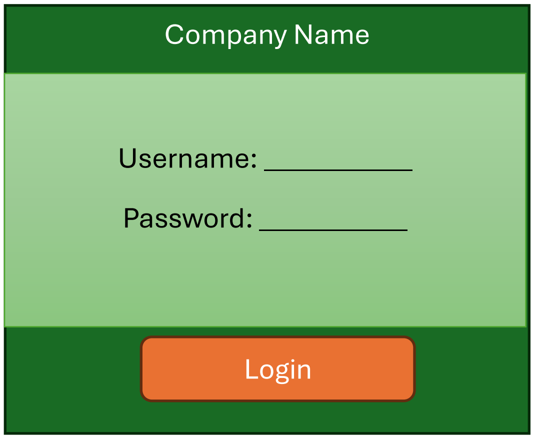
HR enters key information into the search bar. HR clicks the search button. The list is reduced to show just the entries matching the key results. If no results match the list disappears showing a message about no matching results.



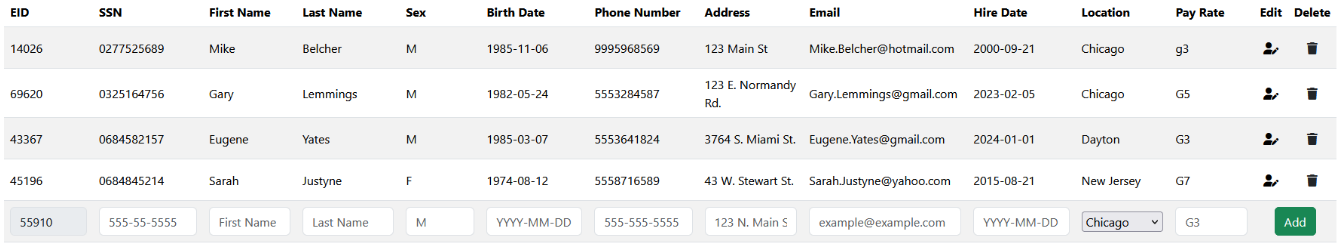
User Interface Specifications

Preliminary Design

Use Case: Login



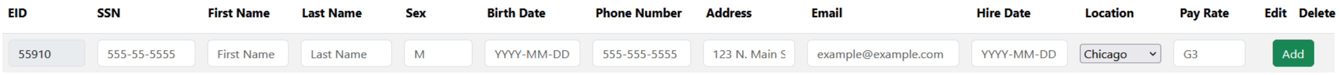
Initial login page. The user enters login information, clicks "Login", and is redirected to the main EPMS page. →



EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email	Hire Date	Location	Pay Rate	Edit	Delete
14026	0277525689	Mike	Belcher	M	1985-11-06	9995968569	123 Main St	Mike.Belcher@hotmail.com	2000-09-21	Chicago	g3	✎	🗑
69620	0325164756	Gary	Lemmings	M	1982-05-24	5553284587	123 E. Normandy Rd.	Gary.Lemmings@gmail.com	2023-02-05	Chicago	G5	✎	🗑
43367	0684582157	Eugene	Yates	M	1985-03-07	5553641824	3764 S. Miami St.	Eugene.Yates@gmail.com	2024-01-01	Dayton	G3	✎	🗑
45196	0684845214	Sarah	Justyne	F	1974-08-12	5558716589	43 W. Stewart St.	Sarah.Justyne@yahoo.com	2015-08-21	New Jersey	G7	✎	🗑
55910	555-55-5555	First Name	Last Name	M	YYYY-MM-DD	555-555-5555	123 N. Main S	example@example.com	YYYY-MM-DD	Chicago ⌄	G3	Add	

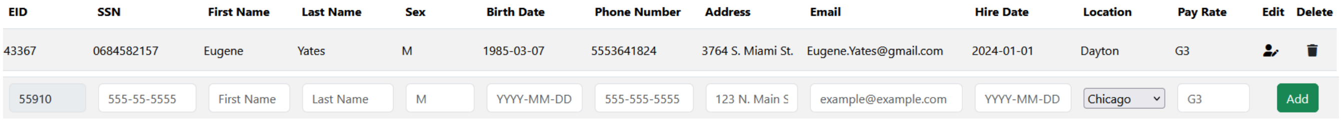
If that user has edit rights this would be a sample screen. If not, it will look similar but the icons for edit and delete will be greyed out.

Use Case: Add Employee



EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email	Hire Date	Location	Pay Rate	Edit	Delete
55910	555-55-5555	First Name	Last Name	M	YYYY-MM-DD	555-555-5555	123 N. Main S	example@example.com	YYYY-MM-DD	Chicago ⌄	G3	Add	

The user is presented with the above prompt. Entering format matching data and clicking add returns 2 options. →



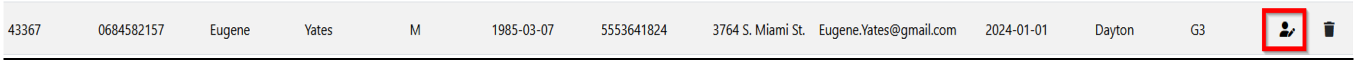
EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email	Hire Date	Location	Pay Rate	Edit	Delete
43367	0684582157	Eugene	Yates	M	1985-03-07	5553641824	3764 S. Miami St.	Eugene.Yates@gmail.com	2024-01-01	Dayton	G3	✎	🗑
55910	555-55-5555	First Name	Last Name	M	YYYY-MM-DD	555-555-5555	123 N. Main S	example@example.com	YYYY-MM-DD	Chicago ⌄	G3	Add	

Successful additions will populate the list with the information supplied.

Error: Please verify the format of the attempted data entry. The employee was not added.

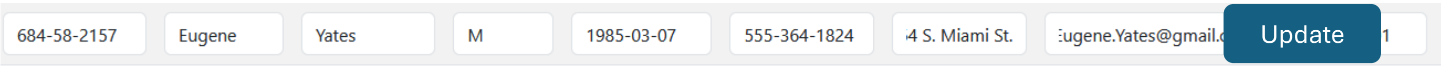
Failed additions will return an error message stating what was missing (format mismatch, empty prompt box, etc.)

Use Case: Edit Employee



43367	0684582157	Eugene	Yates	M	1985-03-07	5553641824	3764 S. Miami St.	Eugene.Yates@gmail.com	2024-01-01	Dayton	G3

Clicking the edit button turns the fields of an entry into populated text boxes →

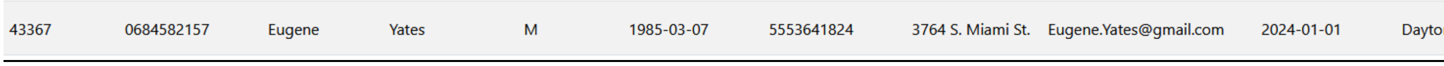


684-58-2157	Eugene	Yates	M	1985-03-07	555-364-1824	4 S. Miami St.	ugene.Yates@gmail.c	1

Error: Please verify the format of the attempted data entry.

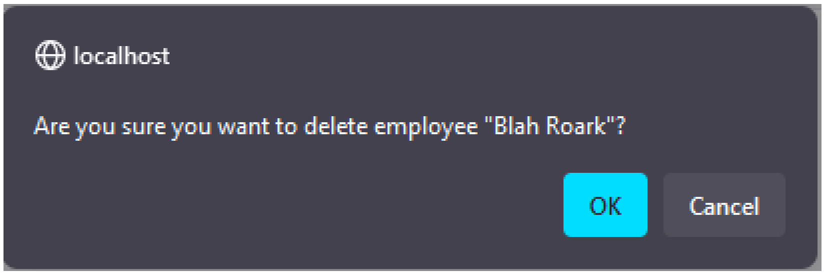
Clicking update updates the employee in the database or rejects the update if the format does not match.

Use Case: Delete Employee



43367	0684582157	Eugene	Yates	M	1985-03-07	5553641824	3764 S. Miami St.	Eugene.Yates@gmail.com	2024-01-01	Dayto

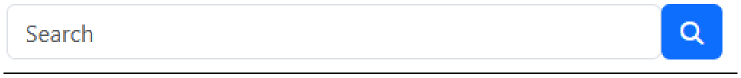
Clicking the delete button prompts the user for confirmation →



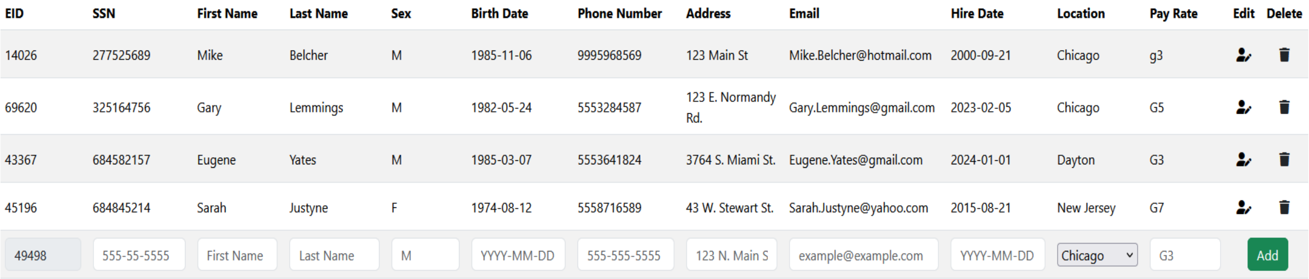
Are you sure you want to delete employee "Blah Roark"?

Clicking "Yes" removes the employee, and clicking No cancels the action.

Use Case: Search for Employee

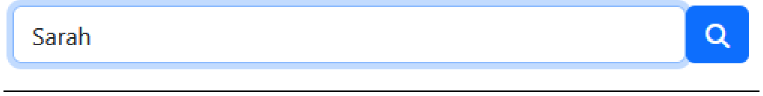


Search

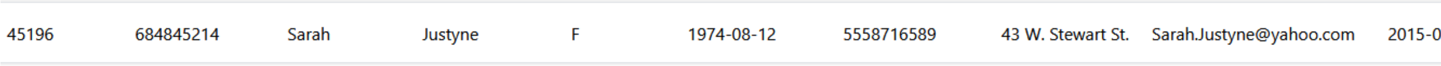


EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email	Hire Date	Location	Pay Rate	Edit	Delete
14026	277525689	Mike	Belcher	M	1985-11-06	9995968569	123 Main St	Mike.Belcher@hotmail.com	2000-09-21	Chicago	g3	✎	🗑
69620	325164756	Gary	Lemmings	M	1982-05-24	5553284587	123 E. Normandy Rd.	Gary.Lemmings@gmail.com	2023-02-05	Chicago	G5	✎	🗑
43367	684582157	Eugene	Yates	M	1985-03-07	5553641824	3764 S. Miami St.	Eugene.Yates@gmail.com	2024-01-01	Dayton	G3	✎	🗑
45196	684845214	Sarah	Justyne	F	1974-08-12	5558716589	43 W. Stewart St.	Sarah.Justyne@yahoo.com	2015-08-21	New Jersey	G7	✎	🗑
49498	555-55-5555	First Name	Last Name	M	YYYY-MM-DD	555-555-5555	123 N. Main S	example@example.com	YYYY-MM-DD	Chicago ⌄	G3	Add	

Typing a search term in the text box and clicking search reduces the list shown to just entries that match the search or list no matching entries →

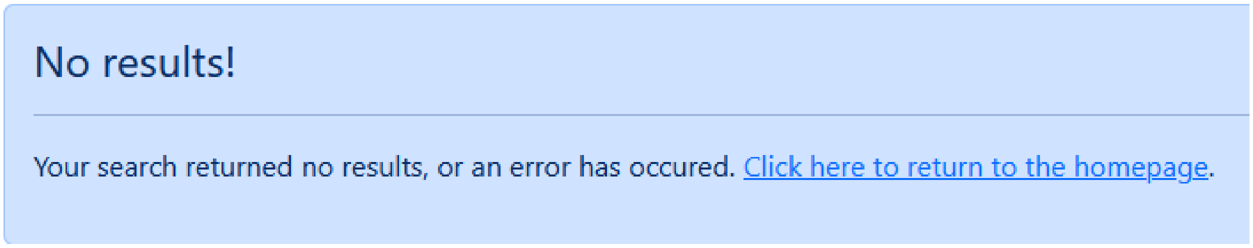


Sarah



45196	684845214	Sarah	Justyne	F	1974-08-12	5558716589	43 W. Stewart St.	Sarah.Justyne@yahoo.com	2015-0

-or-



No results!

Your search returned no results, or an error has occured. Click here to return to the homepage.

Clearing search returns the full list.

User Effort Estimation

Use Case	Clicks	Keystrokes
Use Case: Login	1	<50
Use Case: Add	1	<50
Use Case: Edit	2	<50
Use Case: Delete	2	0
Use Case: Search	1	<10

Traceability Matrix

System Requirements:

Number	Priority Weight	Description
R1	5	Must be able to store employee records
R2	2	Data entry fields should be first name, last name, sex, birth date, SSN, contact number, address, email, EID, hire date, location, and pay rate.
R3	3	Fields should have character-type restrictions
R4	2	Location should be selected from a list of predefined company locations.
R5	2	Pay rate should be selected from a list of predefined pay rates.
R6	4	Must be able to edit employee records
R7	5	Must be able to delete employee records
R8	3	Must be able to search employee records
R9	4	The system should have 2 levels of authentication. Read and modify.

Use Cases:

Number	Description
UC1	To add a new employee to the system
UC2	Remove employee from the system
UC3	Change the information of an employee already in the database
UC4	Using attributes to search for an employee
UC5	Verify the user has access rights to information
UC6	Add a Location
UC7	Add pay bands
UC8	Create a login user

Traceability Matrix:

Number	PW	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8
R1	5	X							
R2	2	X		X			X	X	
R3	3	X		X			X	X	
R4	2	X		X			X		
R5	2	X		X				X	
R6	4			X					
R7	5		X						
R8	3				X				
R9	4					X			X
Max PW		5	5	4	3	4	2	2	4
Total PW		14	5	13	3	4	7	7	4

System Architecture and System Design EPMS

Architectural Style

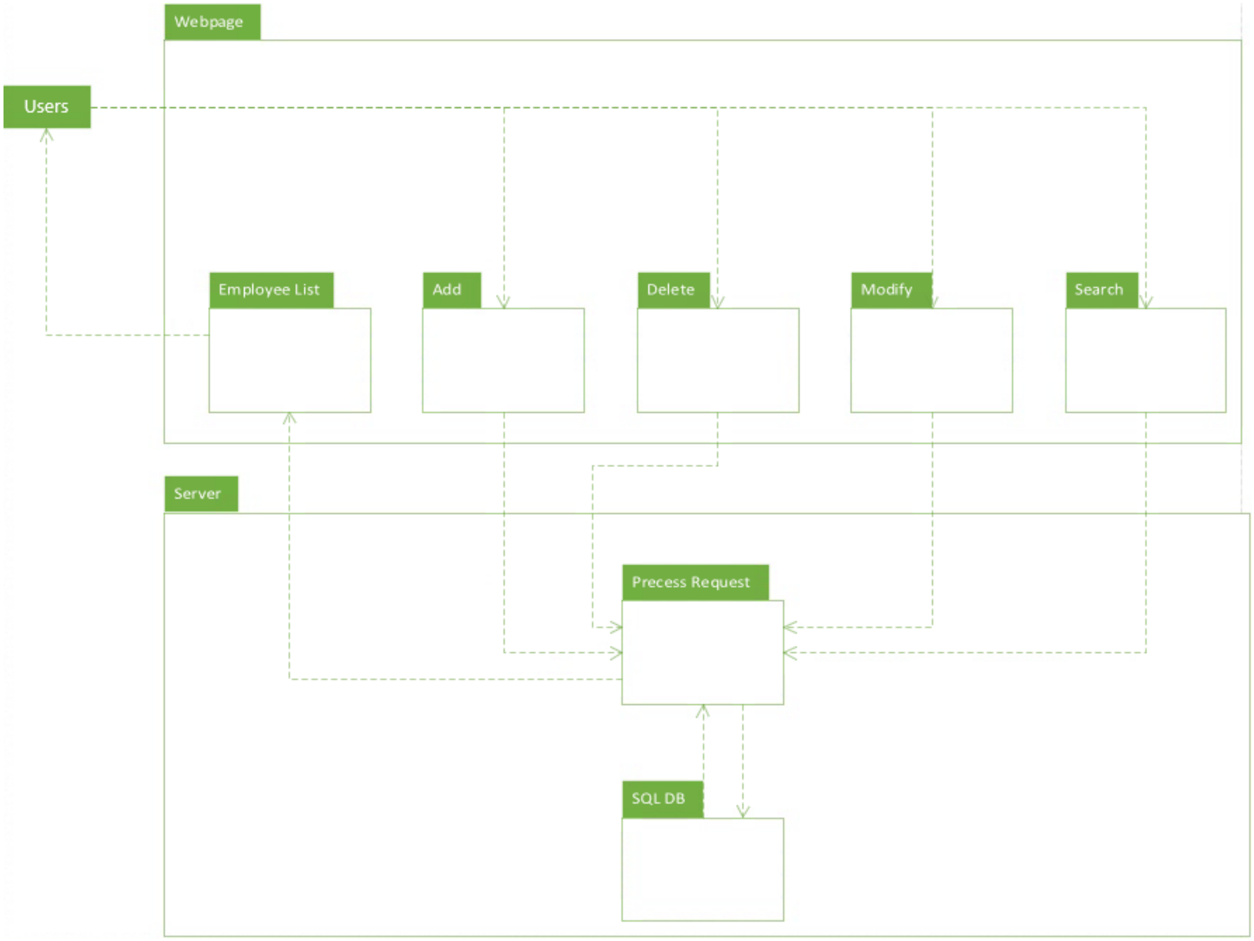
EPMS is a client-server design utilizing a web interface on the client side to interface with a locally hosted web and database server. The software is browser-agnostic so long as it is a modern browser that supports HTML5. The client is any computer on the company network using a browser that can interact with the software sending commands to the server to manipulate and add data stored on the server and display the results on the page.

The server(s) is one or two computers, depending on the business's SQL installation requirements. The web server can have SQL installed on it or an instance of SQL running on another server can be used. The server receives the input from the client, performs the requested method, and outputs the data back to the client.

I utilized XAMPP to build the software for testing on a single device that functions as the client and server. I utilize Chrome as the client browser, PHP as the coding language, Apache as the web server, and MariaDB as the SQL server.

Identifying Subsystems

The UML package diagram below shows the different functions of the EPMS system and how the system functions and returns the data to the user. The user interacts directly with the primary functions on the web page. Each of these are functions that must be processed by the web server. The server then takes the input it has received and passes this to the database. The database processes the command it is given and returns the result to the web server. The web server then returns this information to the Employee list to be displayed. And finally, the user can view that information.



Mapping Subsystems to Hardware

The software is highly configurable. It can be set to run on a single system like it is in the demo or can have its functions spread across several computers depending on the business need. If it is a very small operation a single computer can function as the client and server with the browser, web server, and SQL database residing on the same machine. Another configuration could be to have the client run the browser and the server run the web services as well as the SQL database. For large implementations, the server roles can be split to have the SQL instance reside on a server of its own.

Persistent Data Storage

The EPMS system requires a persistent data storage system. Authentication to the system requires users in the database with their assigned rights. Adding and modifying employees saves this data to a SQL database. Displaying the list of employees requires reading this database and displaying the information on the webpage.

Network Protocol

The back-end system is designed using PHP and communicates with the web server via HTTP. I chose this method because it helps make the system client-agnostic and allows for use in most environments with the software dependencies being on the server instead of the client.

Execution orders

The system is designed in an event-driven fashion. Users can execute any of the methods on the page and based on input a result is returned. These methods can be executed in any order.

Hardware Requirements

For the client side, the hardware requirements are that of any modern PC. Color display with a minimum of 640x480 pixels, modern browser supporting HTML5.

For the server side any Windows OS that is not end of support by Microsoft, with a large enough hard drive for software installation as well as the database, 80Gb minimum. At least 4GB memory.

Network between server and client should be no less than 10Mbps which is less than standard company networks.

Algorithms and Data Structures

I use arrays to pass data to and from the database. To be honest, this is the only way I knew "confidently" on how to pass the data, so I guess my decision process was based on ease of use.

I am nowhere near a professional web developer. So, I stuck with what I knew and could easily Google and find support.

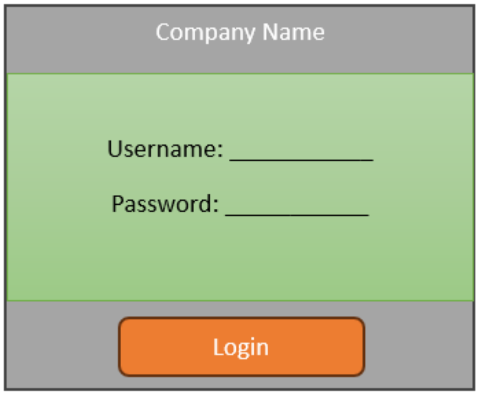
Arrays do offer a lot of flexibility for the type of data stored so this is most likely the reason they feel easy to use.

User Interface Design and Implementation

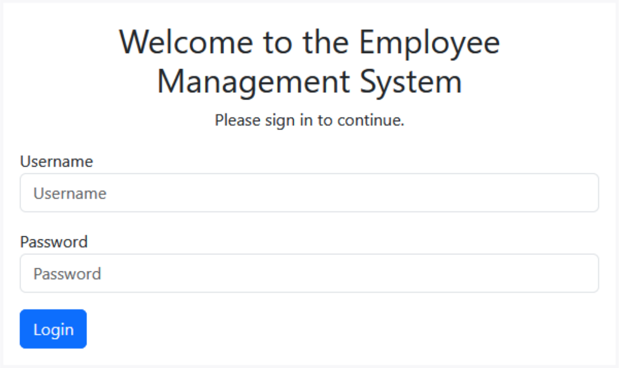
I had a lot of the system programmed by the time we did module 7. A lot of what I included in module 7 were actual screenshots of a working system. I will highlight the design changes between then and now as well as a few I remember needing to change during programming.

Login

Mockup



Actual



Welcome to the Employee Management System

Please sign in to continue.

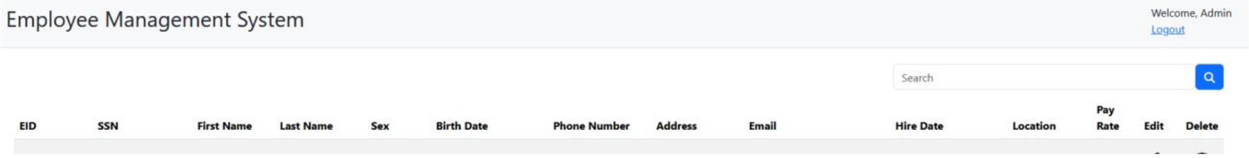
Username

Username

Password

Password

I did not have a functioning login that differentiated user rights before module 7. During a quick mockup, I didn't include specific details like the name of the system or on-screen guides. During actual programming to make it more clear that you were at the correct login page, I added the full system name with a greeting. To make the login simple I added titles above the fillable boxes with placeholder text describing what the field was looking for.



Employee Management System

Welcome, Admin
Logout

Search

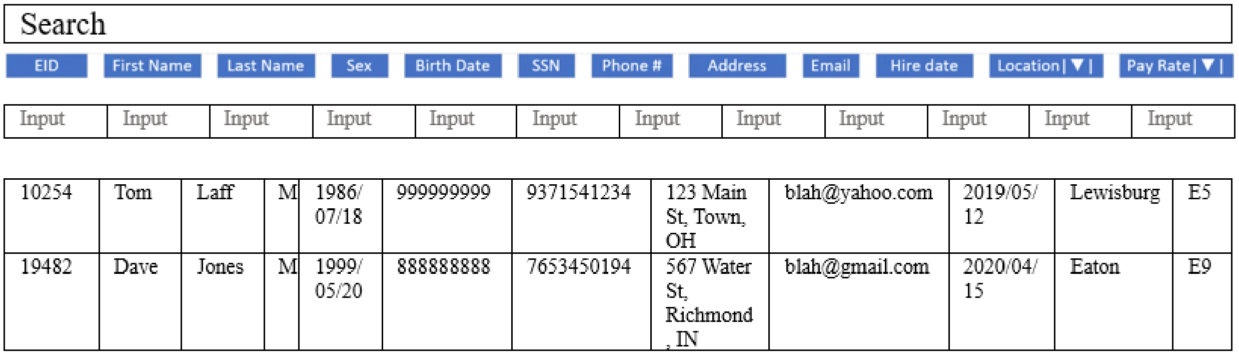
EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email	Hire Date	Location	Pay Rate	Edit	Delete

Along with the system name being displayed at the top left, I also added a status to the top right of the screen that showed the logged in user and the ability to logout.

Employee Entry Fields

During our initial planning, I drew the mockup below. During the initial programming I made all the fields plain text entry fields that simply took any input and copied it to the SQL database via an array.

Mockup

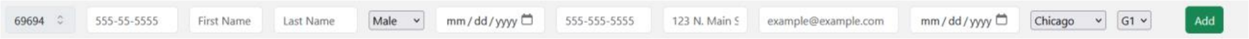


Search

EID	First Name	Last Name	Sex	Birth Date	SSN	Phone #	Address	Email	Hire date	Location | ▼ |	Pay Rate | ▼ |
Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input	Input
10254	Tom	Laff	M	1986/07/18	999999999	9371541234	123 Main St, Town, OH	blah@yahoo.com	2019/05/12	Lewisburg	E5
19482	Dave	Jones	M	1999/05/20	888888888	7653450194	567 Water St, Richmond , IN	blah@gmail.com	2020/04/15	Eaton	E9

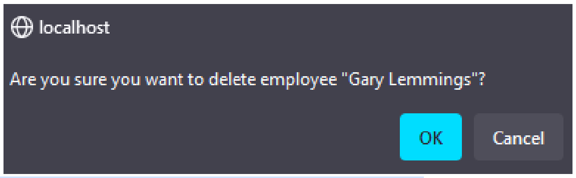
Actual

During programming, I made some of the fields data specific. Date entry is standardized via a calendar. Sex, location, and pay rate are all dropdowns. Employee ID is auto-generated. These all improve the way a user interacts with the system



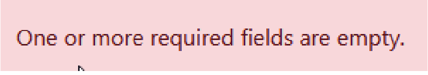
User Help Messages

Several user help messages were added to guide the user to their next step. Initially leaving fields empty would just add employees with missing information to the database. Deleting users executed with a single click without verifying the user meant to click the button. Searching for entries that didn't exist would result in a blank page that you couldn't navigate away from.

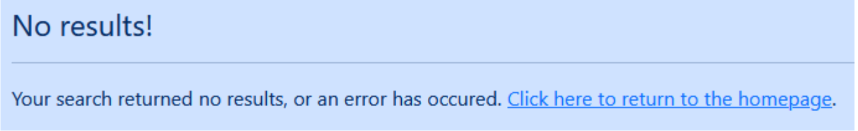


localhost

Are you sure you want to delete employee "Gary Lemmings"?



One or more required fields are empty.



No results!

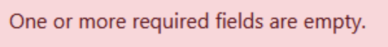
Your search returned no results, or an error has occured. Click here to return to the homepage.

Design of Tests

The primary functions of the EMPS are adding, editing, and deleting an employee.

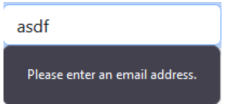
The individual unit test for adding an employee would be completed by attempting incorrect data entry or leaving one or more of the fields blank.

When one or more fields are blank you receive the error:



One or more required fields are empty.

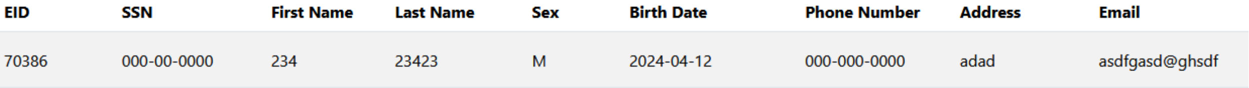
The email field checks for the @ symbol and errors out with this error when not received:



asdf

Please enter an email address.

The SSN or phone number attempt to match them to a format if entered incorrectly:

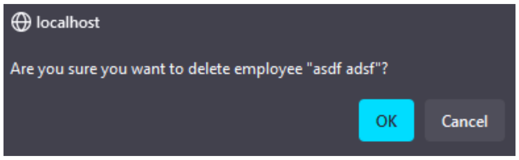


EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email
70386	000-00-0000	234	23423	M	2024-04-12	000-000-0000	adad	asdfgasd@ghsdf

All other fields take data as entered.

The test for editing an employee would be seeing if a correct field could be changed to an incorrect field or left blank. Since the system simply overwrites the current entry using the same processes as adding the results are the same as adding and employee.

Deleting and employee is only a button click so the only test is clicking the button to ensure the actions respond as intended. The user is prompted with the below message. If they select cancel nothing happens. If they click OK then the user is deleted:



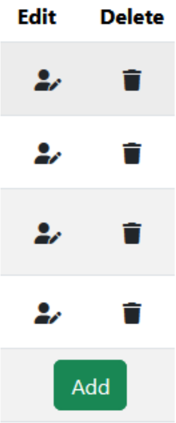
localhost

Are you sure you want to delete employee "asdf adsf"?

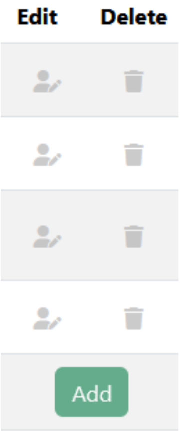
The only 2 systems that depend on one another that can be integration tested are user rights after authentication and searching for an employee.

Logging in with an admin user presents you with the employee list as well as clickable icons for edit, delete, and add. Loggin in with a user without edit rights these icons are greyed out and unclickable.

Admin

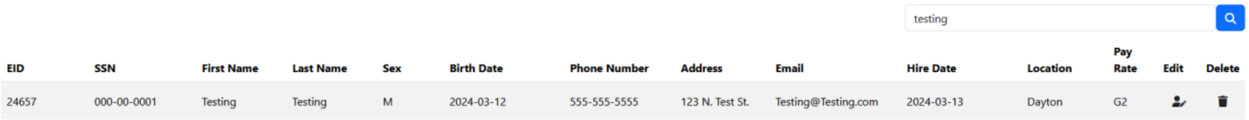


User



While performing the search function there must already be employees in the system. So, the search function depends on the system's ability to read the database and then return it to the screen. When a search is entered it must either find the entry(s) and display the results or display that no entries match the search terms.

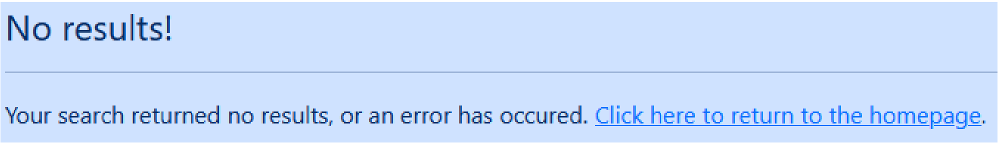
Matching search entry:



testing

EID	SSN	First Name	Last Name	Sex	Birth Date	Phone Number	Address	Email	Hire Date	Location	Pay Rate	Edit	Delete
24657	000-00-0001	Testing	Testing	M	2024-03-12	555-555-5555	123 N. Test St.	Testing@Testing.com	2024-03-13	Dayton	G2	✎	🗑

No matching entries:



No results!

Your search returned no results, or an error has occured. Click here to return to the homepage.