# Project Report: Pay Role Management Webpage

## Project Overview

The objective of this project was to create a Pay Role Management webpage using HTML, CSS, and JavaScript. The main functionality of the webpage is to take input for bill amount and paid amount, validate these inputs, and then calculate the minimum number of currency notes required to return the balance amount to the user.

## Technologies Used

- **HTML5: Used to design the structure of the webpage.**
- **CSS3: Used to style the calculator for a better user interface.**
- **JavaScript (Vanilla JS): Implemented the core logic for input validation, change calculation, and dynamic output display.**
- **Optional enhancements (if used): Google Fonts or Font Awesome for improved UI, Flexbox/Grid for layout, and Media Queries for responsive design.**

## Functional Requirements

1. **Input form to accept bill amount and paid amount from the user.**
2. **Validation to check for incorrect inputs such as negative values or empty inputs.**
3. **Ensure the paid amount is not less than the bill amount. If it is, show an appropriate error.**
4. **Logic to calculate the minimum number of notes needed to provide the correct change to the customer.**
5. **Display the results in a dynamic table format showing the count of each denomination.**
6. **Clear display of error and success messages to guide the user.**

## Implementation Details

- **Input validation:**
  - **Checked for negative values or zero in bill or paid amounts.**
  - **Verified that the paid amount is >= bill amount for valid transaction.**
- **Change calculation:**
  - **Used a list of available currency denominations (e.g., 2000, 500, 200, 100, 50, etc.).**
  - **Employed a logic loop in JavaScript to find out the minimum number of notes for each denomination starting from the highest to the lowest.**
- **Dynamic Output:**
  - **Created a dynamic table that updates to show the breakdown of notes returned as change.**
  - **Integrated error and success feedback visible to the user upon pressing the submit button.**

## Challenges Faced

- **Ensuring error states handled all invalid input cases.**
- **Implementing a clean, user-friendly UI that clearly presents results and errors.**
- **Managing dynamic DOM updates for output display without page reload.**

## Conclusion

The project successfully demonstrates a useful Pay Role Management calculator that validates input and calculates minimal note count change efficiently. The webpage uses fundamental web technologies and practices responsive design principles where applied (optional). It can be further enhanced with additional UI/UX improvements or more comprehensive currency handling if needed.