Developer Assignment

Purpose

This assignment aims to assess your technical skills and provide discussion points for your technical interview.

Please note that the assignment is entirely fictional and has no connection to our products or business. It will not be used commercially or in any other form.

Overview

Your company has grown rapidly, tripling in size over the past few years. However, the vacation management process has not kept up, relying on outdated methods such as handwritten applications, manual approvals, and physical records.

Your task is to design and build an online portal streamlining this process. The portal should:

- Allow employees to submit vacation requests online.
- Notify managers to approve or reject requests.

Scenarios

The following scenarios define how managers and employees interact with the portal. They cover tasks like signing in, managing accounts, and handling vacation requests.

Feature: Manager account

Background:

Given that I have a manager account in the system

Scenario: Signing into the portal as a manager

When I sign in using my username and password
Then I am taken to the manager's home page
And I can see a list of users currently registered in the system
And I can create a new user
And I can sign out of my account

Scenario: Viewing the list of users

When I view the list of users
Then I see all users registered
And for each user, I see their name
And I see their email
And I can update the user’s properties
And I can delete the user

Rule: User management

Scenario: Creating a user

When I go to create a user
Then I can enter the user’s name
And I can enter the user’s email address

And I can enter the user's "employee_code", a 7-digit employee number
And I can enter a password for the user

Scenario: Updating a user

When I go to update a user
Then I can change their name
And I can change their email address
And I can set a new password

Scenario: Deleting a user

When I delete a user
Then the user is deleted
And all of their associated data is also deleted

Rule: Request management

Scenario: Receiving a vacation request

When a vacation request is submitted
Then I can approve the request
And I can reject the request

Scenario: Approving a vacation request

When I approve the request
Then the request is marked as approved

Scenario: Rejecting a vacation request

When I reject the request
Then the request is marked as rejected

Feature: Employee account

Background:

Given that I have an employee account in the system

Scenario: Signing into the portal as an employee

When I sign in using my username and password
Then I am taken to the employee home page
And I can see a list of submitted vacation requests
And I can create a new request
And I can sign out of my account

Scenario: Viewing the list of requests

When I view the list of requests
Then I see all requests submitted
And for each request, I see the date it was submitted
And I see the dates requested
And I see the status of the request: approved, rejected, or pending
And I can delete the request if it is pending

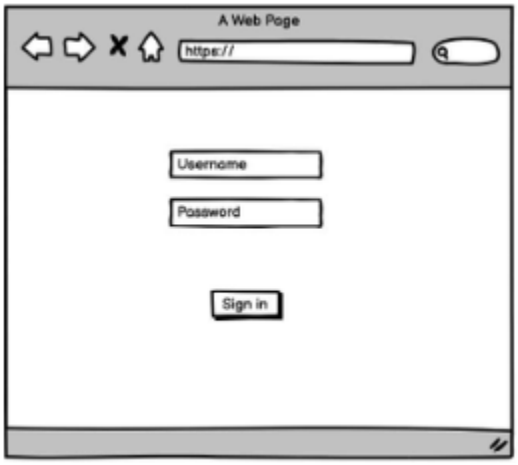
Scenario: Creating a new vacation request

When I go to create a new vacation request
Then I can select the date range of the requested vacation
And I can enter a reason for the request

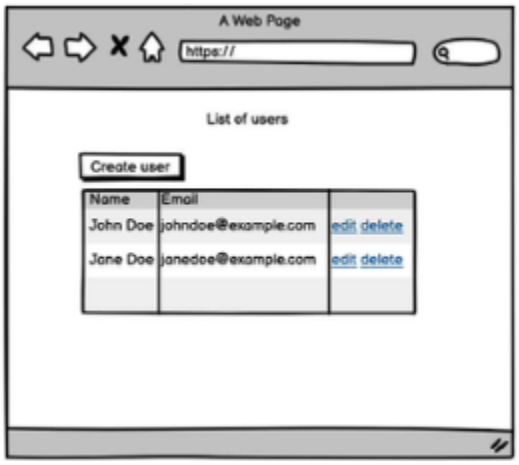
Wireframes

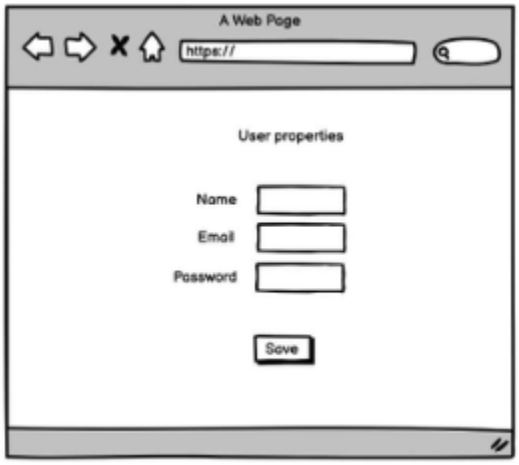
The following wireframes are a visual guide to the portal's layout, highlighting key pages like dashboards, forms, and lists. They serve as a starting point and can be adjusted to meet technical needs or improve usability.

Sign in

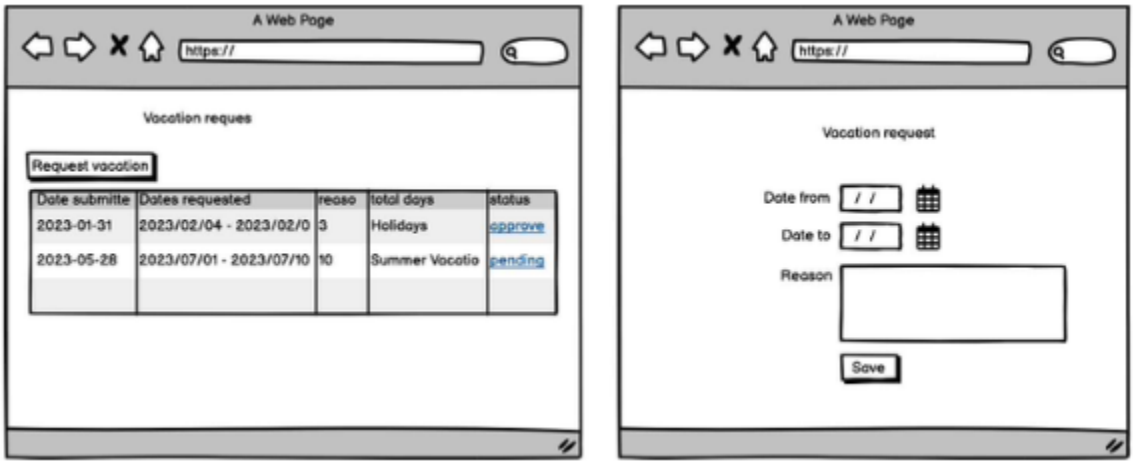


Manager journey





Employee journey



Requirements

- The backend should be implemented using PHP, Python, JavaScript, or TypeScript.
- Avoid frameworks like Laravel, Django, or Express. However, libraries for specific tasks, such as routing or data validation, are allowed.
- For the frontend, using a framework like React or VueJS to build the user interface is recommended but optional.
- A relational database must be used for data storage. Acceptable options include MySQL, MariaDB, PostgreSQL, or SQLite.

Deliverables

Your submission should include a GitHub repository containing:

1. Source code.
2. A database dump or seed files for easy setup.
3. Clear and thorough instructions on how to set up the development environment and run the project.

Ensure that your deliverables are comprehensive enough for another developer to set up, run, and evaluate your project with minimal effort.

Evaluation

Your work will be evaluated on:

- **Code Quality**: Readability, consistency, and adherence to best practices.
- **Database Design**: How effectively does your database structure support the application's functionality?
- **Development Practices**: Using tools such as unit tests, linters, or containerisation (e.g., Docker) will be viewed positively.
- **Security Practices**: Implementation of security measures, such as data validation, secure authentication, and proper handling of sensitive data.
- **Feature Completion**: The portal’s ability to handle the core requirements smoothly and reliably.

Some details in this assignment are intentionally left open-ended. You are encouraged to use your judgment and make independent decisions to address any ambiguities or expand the functionality as you see fit.

If you have any questions or need clarification about the assignment, please don’t hesitate to reach out. We encourage open communication and are happy to help you succeed in completing the assignment.