

Project: OnlyBytes

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Description

This project will model a **fast-food restaurant employee management system**.

OnlyBytes is an innovative fast-food restaurant management system designed to streamline and enhance the efficiency of employee management operations. This enterprise-level application aims to provide restaurant managers and employees with a centralized platform to handle various tasks, including employee scheduling, training, promotions, and communication. OnlyBytes ensures seamless coordination between staff members and management, improving productivity and operational transparency.

The system is built to address the challenges fast-food restaurants face in managing their workforce, such as scheduling conflicts, training inefficiencies, and communication gaps. With a user-friendly interface and robust backend architecture, OnlyBytes empowers managers to make data-driven decisions while providing employees easy access to their schedules, training modules, and other relevant information.

Digital Capabilities

Job Stories

#	When...	I want to...	So, I can...
1	Assigning an employee a workspace	Edit assigned position	Have it logged
2	Viewing Staff List	Email all staff	Notify staff of the schedule
3	Hiring	Add an employee	Register them within the database
4	Firing	Fire an employee	Remove them from the database
5	Promoting/Demoting	Promote/demote an employee	Modify their privileges and attributes within the database
6	Entering the webpage	View promotional content	Be informed on promotions
7	A manager needs to schedule staff	Assignments based on availability and schedule needs	Schedule staff for shifts
8	A manager wants to notify an employee of their schedule	Send an email notification to the selected employee	Inform the employee of their schedule for the upcoming week
9	A manager needs to schedule training for staff	Identify staff who require training and their availability	Plan training sessions without disrupting operations
10	An employee is done training	Mark training as complete	Remove it from the Todo list
11	An employee wants to view their schedule	Display their upcoming schedule for the week	Ensure they know when to show up
12	An employee wants to identify who they are	Authenticate and login	Looking at personal information is secure

Activities & Activity Steps

To kickstart the project, the team engaged in a series of collaborative activities to define the system's scope, functionality, and design. Below is a detailed breakdown of the steps taken:

1. Brainstorming and Idea Generation

- Conducted multiple team meetings to brainstorm potential project ideas.
- Shared and discussed project concepts in the team's Microsoft Teams group chat.
- Voted on the most feasible and impactful idea, ultimately selecting the fast-food restaurant management system.

2. Preliminary Project Ideas Considered

During the brainstorming phase, the team explored several potential project ideas, including:

- **College Management Tool:** A centralized platform designed for program coordinators, students, and teachers, featuring AI-generated course descriptions to streamline academic planning and communication.
- **Comic Boom Store:** A full-stack system with a backend for employees and a frontend for users, incorporating role-based access control (RBAC) and separate client interfaces for enhanced usability and security.
- **Supply Chain Management:** A robust system for managing inventory, stock, locations, and distribution across multiple clients, ensuring efficient tracking and optimization of supply chain operations.

- **OnlyBytes:** An innovative fast-food restaurant management system designed to streamline employee management operations, including scheduling, training, promotions, and communication, ensuring seamless coordination between staff and management.

3. Collaborative Design and Planning

- Leveraged Microsoft Teams for communication and file sharing.
- Used **Excalidraw**, a collaborative diagramming tool, to create the high-level architecture diagram and preliminary UI mockups.
- Set up a **GitHub** repository for version control and collaborative coding.
- Held discussions to align the system's core functionalities, including employee management, scheduling, training, and promotions.

API Boundaries Identified

Fiefdom #1 – Employee Management

- Employees
- Roles
- Scheduled Training
- Scheduled Shifts

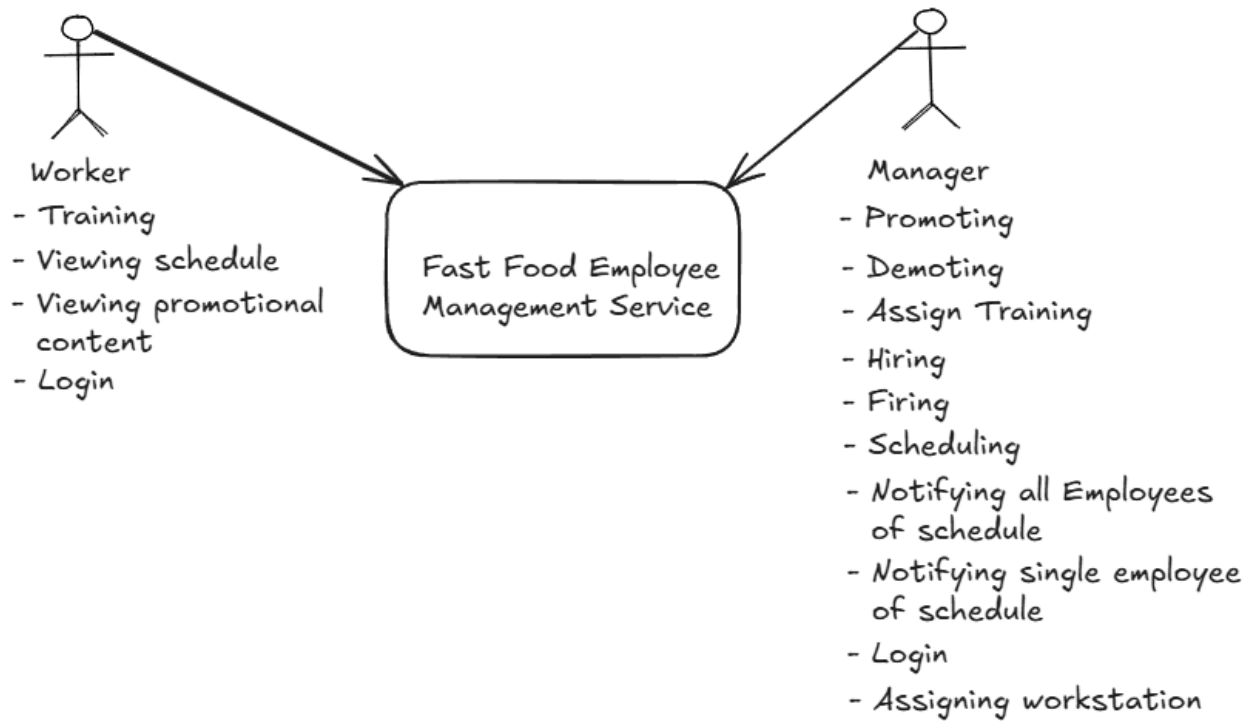
Fiefdom #2 – Training and Promotions

- Training Modules
- Promotional Content
- Assigning Workspaces (stations)
- User Authentication

Emissary – Action related

- Hiring
- Firing
- Promoting
- Demoting
- Emailing schedules
- Relaying promotional content
- Assigning shifts
- Assigning training
- Confirming training is complete

High-level Architecture diagram(s)



Preliminary UI Sketches/Mock-ups

Login
/login

OnlyBytes

Home

Username

Password

[Login](#) [Register](#)

Homepage - unauth'd
/

OnlyBytes

Home Login

Welcome

Promotional content

scroll for more content

Employee View
/employees/{employeeID}

OnlyBytes

Home John Smith

Employee ID 27604380

Shifts [Notify schedule](#)

Start	End
2025-11-08 10:00	2025-11-08 18:00
2025-11-09 12:00	2025-11-09 17:00
2025-11-10 11:00	2025-11-10 16:00
2025-11-11 11:00	2025-11-11 16:00
2025-11-13 14:00	2025-11-13 18:00
2025-11-14 12:00	2025-11-14 17:00
2025-11-15 12:00	2025-11-15 17:00

Training

Course	Complete
WHMIS	Complete
Kitchen Safety	Complete
Customer Service	Complete

Manage Employees - Manager
/employees

OnlyBytes

Home Sarah Wultz

Manage Employees

First	Last	Role	Position	Hire
John	Smith	Worker	#1354	Fire Manage
Jim	Bob	Worker	#1355	Fire Manage
Sarah	Wultz	Manager	#1356	Fire Manage

[Notify staff of schedule](#)

Homepage - auth'd
/

OnlyBytes

Home John Smith

Welcome John Smith

Promotional content

scroll for more content

Schedule Notification EMail
mailto:john.smith99@gmail.com

Subject: John Smith's schedule

2025-11-07 17:36

John Smith's Schedule

Start	End
2025-11-08 10:00	2025-11-08 18:00
2025-11-09 12:00	2025-11-09 17:00
2025-11-10 11:00	2025-11-10 16:00
2025-11-11 11:00	2025-11-11 16:00
2025-11-13 14:00	2025-11-13 18:00
2025-11-14 12:00	2025-11-14 17:00
2025-11-15 12:00	2025-11-15 17:00

Hire Employee - Manager
/employees/hire

OnlyBytes

Home Sarah Wultz

Hire Employee

First

Last

Role

Password

[Hire](#)

Edit Employee - Manager
/employees/{employeeID}/manage

OnlyBytes

Home Sarah Wultz

Manage Employee

Employee ID 27604380

Promote/Demote

Role

[Update](#)

Schedule Employee

Start End

[Schedule](#) [Notify schedule](#)

Relocate

Position

[Update](#)

Train Employees

Training

[Assign](#)

Work Items for Milestone II by Group Member

Emissary – Action Related (Salah Salame)

1. Develop API Endpoints for Employee Actions:

- Create API endpoints for hiring, firing, promoting, and demoting employees.
- Ensure proper validation and error handling for each action.

2. Implement Email Notification System:

- Develop functionality to send email notifications for schedules and promotional content.
- Integrate with an email service (SMTP).

3. Shift Assignment Logic:

- Implement logic for assigning shifts to employees' availability.
- Ensure shifts are logged and updated in the database.

4. Training Confirmation System:

- Develop functionality to mark training as complete and update the employee's training status.
- Ensure training completion triggers removal from the employee's to-do list.

5. Testing and Debugging:

- Write unit tests for all Emissary-related functionalities.
- Debug and resolve any issues identified during testing.

Fiefdom #1 – Employee Management (Andrew Gordon)

1. Employee Database Design:

- Design and implement the database schema for employee profiles, roles, and schedules.
- Ensure proper relationships between tables (e.g., employees, roles, shifts).

2. Employee CRUD Operations:

- Implement Create, Read, Update, and Delete (CRUD) operations for employee management.
- Ensure data integrity and validation for all operations.

3. Role Management System:

- Develop functionality to assign and update employee roles and permissions.
- Ensure role changes are reflected in the database and system behaviour.

4. Scheduled Training Integration:

- Integrate with Fiefdom #2 to fetch and display employee training modules.
- Ensure training schedules are linked to employee profiles.

5. Testing and Documentation:

- Write unit tests for all Fiefdom #1 functionalities.
- Document the database schema and API endpoints for future reference.

Fiefdom #2 – Training and Promotions (Isaiah Andrews)

1. Training Module CRUD Operations:

- Implement CRUD operations for training modules.
- Ensure modules can be assigned to employees and tracked for completion.

2. Promotional Content Management:

- Develop functionality to upload, update, and display promotional content on the webpage.
- Ensure promotional content is accessible to employees and managers.

3. Workspace Assignment System:

- Implement functionality to assign workspaces (stations) to employees.
- Ensure workspace assignments are logged and updated in the database.

4. **Testing and Integration:**

- Write unit tests for all Fiefdom #2 functionalities.
- Integrate with Fiefdom #1 and Emissary to ensure seamless data flow.

5. **Server-side Authentication**

- Develop an authentication scheme for back-end API access
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Client – Frontend Development (Jonathan Taylor)

1. **Employee Dashboard Development:**

- Develop the employee dashboard to display schedules, training progress, and promotional content.
- Ensure the dashboard is responsive and accessible on multiple devices.

2. **Manager Admin Panel Development:**

- Develop the admin panel for managers to perform actions like hiring, firing, and scheduling.
- Ensure the panel is intuitive and provides all necessary functionalities.

3. **Authentication and Security:**

- Implement a secure login system for employees and managers.
- Ensure personal information is only accessible to authorized users.

4. **Testing and User Feedback:**

- Conduct usability testing with potential users to gather feedback.
- Debug and refine the UI based on feedback and testing results.

Collaborative Work Items

1. API Integration:

- Ensure all fiefdoms and the Emissary are integrated seamlessly via well-defined APIs.
- Conduct integration testing to identify and resolve any issues.

2. Documentation:

- Document the system architecture, API endpoints, and database schema.
- Full commenting for Doxygen documentation generation
- Create a user manual for managers and employees.

3. Project Management:

- Use tools like Jira or Trello to track progress and assign tasks.
- Hold regular team meetings to discuss progress and address challenges.