

VIETNAM GENERAL CONFEDERATION OF LABOUR
TON DUC THANG UNIVERSITY
FACULTY OF INFORMATION TECHNOLOGY



Bui Huu Loc - 521H0504

FOSTERING CORPORATE CULTURE
& ENGAGEMENT WITH SHOUT OUT

INDUSTRIAL EXPERIENCE
REQUIREMENT

COMPUTER SCIENCE

Staff Guidance Nguyen Sy Dang

Ho Chi Minh City, 2024.

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Despite my efforts to complete the Industrial Internship Report with all my enthusiasm and capabilities, due to my limited knowledge and time constraints, there are unavoidable shortcomings in this report. I earnestly hope to receive valuable feedback from the esteemed teachers to improve the report and gain a deeper understanding of this subject area.

Finally, I wish good health to the teachers and success to the school's training programs. I also wish the company continued growth and numerous achievements.

ESSAY COMPLETED

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I declare that this product report is mine alone. The research content and results in this topic are honest and have not been published in any form. The data in the tables for analysis, comments, and evaluation were collected by the author from different sources and clearly stated in the reference section.

In addition, the topic also uses a number of comments, assessments as well as data from other authors and other organizations, all with clear and specific citations and annotations of the origin.

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Ton Duc Thang University,

15 June 2024.

Students perform,

(Sign and write full name)

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Fostering Corporate Culture & Engagement with Shout Out Summary

The Shout Out App is designed to enhance corporate culture and increase employee engagement within organizations. Integrated with Slack, the app allows employees to send appreciation "bread" to colleagues, fostering a positive work environment. Key features include sending breads with personalized tags, custom rewards through a "Shout Out Shop," leaderboards to promote friendly competition, and Shout Out TV for real-time recognition displays. The app also includes Pulse surveys to gauge employee well-being and customizable stickers to personalize messages. Administrators can manage rewards, create custom tags, design surveys, and access detailed reporting and analytics. Through these features, the Shout Out App aims to build a strong corporate culture, recognize employee contributions, and improve overall communication within the company.

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Chapter 1

Overview of Linnoedge Joint Stock Company

1.1 Company Background

Linnoedge Joint Stock Company, abbreviated as Linnoedge JSC, was established on January 19, 2024, with its headquarters located at Room No. 3.40, The Prince Residence Commercial Area, 17-19-21 Nguyen Van Troi Street, Ward 11, Phu Nhuan District, Ho Chi Minh City, Vietnam. The company operates under the leadership of Mr. Shogo Harada as its representative.

Linnoedge JSC is registered under several business sectors, reflecting its comprehensive expertise in the technology industry:

1. Computer Programming
2. Computer Consultancy and Computer Systems Management
3. Information Technology Services and Other Related Services
4. Data Processing, Leasing, and Related Activities
5. Information Portals
6. Management Consultancy Activities

1.2 Company Mission and Vision

Linnoedge JSC prides itself on being an industry-leading outsourcing software development company committed to innovation and growth. The company's mission is to deliver cutting-edge solutions that address the unique business challenges of its clients, ensuring maximum value and cost-efficiency.

1.3 Core Business Offerings

1.3.1 Offshore Development Team (LABO)

Linnoedge JSC offers a specialized service known as LABO, providing clients with dedicated and professional development teams. These teams are tailored to meet specific business needs, offering flexibility in team size to accommodate varying project requirements. This service ensures reliable support and expertise for clients seeking to outsource their software development needs.

1.3.2 Web Development

The company excels in crafting intelligent and connected web solutions that are both effective and cost-efficient. Linnoedge JSC's web development services aim to enhance client visibility and engagement through innovative designs and seamless user experiences.

1.3.3 Mobile Development

Linnoedge JSC is proficient in developing robust and scalable native mobile applications for iOS and Android platforms. These applications are built to meet enterprise-grade standards, emphasizing security and performance while catering to diverse client needs across various industries.

Chapter 2

Topic Overview

2.1 Introduction

In today's dynamic corporate landscape, fostering a strong company culture and enhancing employee engagement are paramount to organizational success. The Shout Out App emerges as a transformative tool designed to meet these critical objectives. By leveraging the ubiquitous Slack platform, this innovative application enables seamless communication of appreciation and recognition among team members. Through its unique features such as customizable "breads," personalized tags, and real-time recognition displays via Shout Out TV, the app not only facilitates a culture of gratitude but also promotes transparency and camaraderie within the workplace. This introduction sets the stage for exploring how the Shout Out App addresses the fundamental challenges of modern organizational dynamics, aiming to elevate employee morale, productivity, and overall company cohesion.

2.2 System Description

The "Shout Out App" is a dynamic and innovative platform designed to enhance corporate culture and boost employee engagement within organizations. Leveraging the power of Slack integration, the app enables seamless communication, recognition, and appreciation among team members. By introducing fun and interactive features such as sending breads with thank you notes, custom rewards, leaderboards, Shout Out TV, pulse surveys, and stickers, the Shout Out App transforms the traditional ways of showing gratitude and acknowledging contributions into a more engaging and meaningful experience.

The primary objectives of the Shout Out App are to foster a strong corporate culture, uncover and promote good company practices, provide insights into the company's real-time situation through behavioral data, enable comprehensive recognition, and significantly increase staff engagement. By incorporating elements of gamification and visual communication, the app ensures that expressions of appreciation are frequent, genuine, and impactful.

For users, the app offers a variety of functions such as sending breads with personalized messages and tags, redeeming custom rewards from the Shout Out Shop, tracking contributions through leaderboards, and displaying appreciation activities via Shout Out TV. Admins have the ability to create and manage custom rewards, define

meaningful tags, design unique stickers, conduct pulse surveys, and access insightful analytics to monitor engagement trends and recognize top contributors.

Overall, the Shout Out App not only simplifies the act of saying "thank you" but also makes it a fun and integral part of the workplace culture. By encouraging regular recognition and fostering a positive environment, the app aims to build a cohesive and motivated workforce, ultimately contributing to the overall success and well-being of the organization.

2.3 Purpose and Scope

2.3.1 Limitations on object and function

Limitations on objects:

- + The platform is exclusively integrated with Slack and does not support integration with other communication platforms.
- + The system is designed for internal corporate use and does not extend to external customer interactions.
- + The app focuses solely on recognition and communication functionalities and does not include broader HR management features.
- + The app is limited to text-based communication and does not support multimedia messaging or file sharing.
- + The app is currently only available in English and does not support multiple languages.
- + The app requires an active internet connection and does not offer offline functionality.

Limitations on functions:

- + The app does not provide real-time analytics or detailed reporting beyond basic usage metrics.
- + The app does not offer integration with third-party productivity tools or project management platforms.
- + The app does not support custom branding or white-labeling options for organizations.
- + The app does not include automated scheduling or reminder features for recognition activities.

- + The app does not provide integration with external APIs or custom development options for additional features.

2.3.2 Limitations on technology

- + The project relies solely on the Slack API and Bolt.js framework for bot functionalities, limiting integration with other chat platforms unless additional development efforts are undertaken.
 - + The web application is built using Express.js, which is suitable for lightweight applications but may encounter scalability challenges with extensive user interactions or high traffic volumes.
 - + Deployment is managed through Apache and PM2, which provides basic server management and process monitoring capabilities but lacks advanced orchestration features found in cloud-native deployment solutions like Kubernetes.
 - + The current architecture does not include built-in support for containerization or microservices, potentially limiting scalability and resource management efficiencies in complex deployment environments.
 - + Integration with third-party services or APIs beyond Slack may require additional development efforts and maintenance, potentially increasing project complexity and dependency management.
 - + Security features and compliance with industry standards (such as GDPR) may require additional configurations or custom implementations beyond the out-of-the-box capabilities provided by Slack API/Bolt.js and Express.js.

2.4 Practical Significance

The Shout Out App represents a transformative approach to enhancing corporate culture and employee engagement through innovative use of technology, specifically leveraging Slack API/Bolt.js for bot functionalities and Express.js for web application development. This platform not only facilitates seamless communication but also integrates unique features like custom rewards, leaderboards, and pulse surveys to foster a positive workplace environment. The practical significance of the Shout Out App can be explored through several key dimensions:

2.4.1 Enhanced Communication and Collaboration

The primary goal of the Shout Out App is to improve communication within organizations by providing a structured platform for expressing appreciation and recognition. By integrating with Slack, a widely adopted communication tool, the app streamlines the process of sending and receiving acknowledgments ("breads") among team members. This not only boosts morale but also strengthens team cohesion and collaboration across different departments and remote locations.

2.4.2 Cultural Transformation and Employee Engagement

A strong corporate culture is pivotal to organizational success, influencing employee satisfaction, retention rates, and overall productivity. The Shout Out App plays a crucial role in cultivating a positive work environment where employees feel valued and recognized for their contributions. By encouraging frequent and meaningful interactions through features like custom rewards and leaderboards, the app promotes a culture of appreciation and motivates individuals to go above and beyond in their roles.

2.4.3 Data-Driven Insights for Strategic Decision-Making

Beyond fostering engagement, the Shout Out App provides valuable insights into organizational dynamics through pulse surveys and analytics. These tools enable HR and management teams to gauge employee sentiment, identify areas of improvement, and make data-driven decisions to enhance workplace satisfaction and performance. By leveraging behavioral data captured within the app, organizations can implement targeted initiatives that resonate with their workforce and align with strategic goals.

2.4.4 Employee Well-being and Retention

Employee well-being is increasingly recognized as a cornerstone of organizational success. The Shout Out App contributes to employee well-being by fostering a supportive and inclusive workplace culture where recognition and appreciation are integral components. Studies have shown that employees who feel valued and appreciated are more likely to exhibit higher job satisfaction, lower turnover rates, and greater commitment to organizational goals.

2.4.5 Strategic Alignment with Organizational Goals

Ultimately, the practical significance of the Shout Out App lies in its ability to align with and support broader organizational objectives. Whether enhancing employee engagement, improving communication channels, or driving cultural transformation, the app serves as a strategic tool that empowers organizations to cultivate a positive work environment and achieve sustainable growth.

Chapter 3

Objectives of the Shout Out App

3.1 Creating a Strong Corporate Culture

Creating a strong corporate culture is one of the central objectives of the Shout Out App, serving as a foundation for a thriving and cohesive organization. The app aims to embed the organization's core values into everyday interactions, ensuring that these values are not just abstract concepts but are actively lived and experienced by employees.



Figure 3.1: Strong Corporate Culture

The Shout Out App promotes core values by providing a platform where employees can recognize and reward each other for behaviors that align with these values. This daily reinforcement of core principles helps to internalize and institutionalize them across the organization. For instance, if teamwork is a core value, employees can use the app to acknowledge and reward acts of collaboration, thereby promoting a culture where teamwork is consistently valued and practiced.

Encouraging positive behavior is another critical aspect of building a strong cor-

porate culture. The Shout Out App makes it easy to recognize and reward positive actions, creating a feedback loop that encourages more of the same behavior. When employees see their colleagues being acknowledged for specific actions that contribute to the company's success, they are more likely to emulate those behaviors. This not only promotes individual excellence but also drives collective success by aligning everyone's efforts towards common goals.



Figure 3.2: Strong Corporate Culture

Building team spirit is facilitated through mutual appreciation and support, which the Shout Out App makes effortless. By allowing employees to send recognition notes, known as “breads,” the app fosters a sense of camaraderie and unity. Team members feel valued not just by their superiors but also by their peers, creating an environment where everyone feels part of a supportive community. This mutual recognition helps to break down silos and encourages a more collaborative and cohesive work environment.

The Shout Out App also plays a pivotal role in showcasing and spreading good company practices. By highlighting effective and innovative practices through the recognition system, the app facilitates knowledge sharing and continuous learning within the

organization. Employees can see what strategies and methods are being recognized and can adopt these practices in their own work. This dissemination of best practices contributes to a culture of continuous improvement and innovation.

In addition to fostering a culture of excellence, the Shout Out App supports the development of mentorship within the organization. Recognizing and rewarding experienced employees who take the time to guide and support newer team members encourages a culture of mentorship. This not only helps in the professional development of employees but also ensures that valuable knowledge and skills are passed down, contributing to the overall growth and resilience of the organization.



Figure 3.3: Strong Corporate Culture

The Shout Out App is a powerful tool for creating a strong corporate culture. By embedding core values into daily interactions, encouraging positive behavior, building team spirit, showcasing good practices, and fostering mentorship, the app helps to cultivate a workplace where employees are motivated, engaged, and aligned with the organization's mission and values. This strong corporate culture ultimately drives higher levels of performance, innovation, and employee satisfaction, contributing to

the long-term success of the organization

3.2 Discovering and Spreading Good Company Practices

Discovering and spreading good company practices is a fundamental objective of the Shout Out App, aimed at enhancing overall organizational efficiency and fostering a culture of continuous improvement. This objective is realized through the app's ability to identify, highlight, and disseminate effective practices that contribute to the company's success.

The Shout Out App serves as a platform for employees to share their achievements and innovative approaches to work. When an employee implements a successful strategy or completes a project with exceptional results, their colleagues can recognize these accomplishments by sending breads.” This public acknowledgment not only boosts the morale of the individual being recognized but also brings attention to the practices that led to their success. By making these practices visible to the entire organization, the app encourages others to adopt similar approaches.



Figure 3.4: Discovering and Spreading Good Company Practices

This process of highlighting good practices creates a ripple effect throughout the company. As employees see their peers being recognized for certain actions, they are motivated to learn more about what made those actions successful. This curiosity drives informal learning and knowledge sharing. Employees start to ask questions, seek advice, and implement the newly discovered practices in their own work. Over time, this leads to a more knowledgeable and capable workforce, as best practices become standard practices.

The Shout Out App also promotes transparency and openness in the workplace. By publicly recognizing good practices, the app breaks down barriers and silos that often exist in organizations. Employees from different departments can see what others are doing and how they are being recognized, fostering a sense of unity and shared purpose. This transparency helps to create a more collaborative environment where information flows freely, and employees feel encouraged to share their successes and learn from each other.



Figure 3.5: Discovering and Spreading Good Company Practices

Moreover, the Shout Out App's tagging feature allows for the categorization of recognized behaviors and practices. When sending a bread, employees can attach tags such as `#innovation`, `#teamwork`, or `#customerService`. These tags help to organize and highlight specific areas of excellence within the company. Over time, the collection of tagged recognitions creates a repository of best practices that can be analyzed and referenced. Management can use this data to identify trends, understand what practices are contributing most to the company's success, and replicate these practices across the organization.

The app also facilitates the formal sharing of good practices through its various features. For example, the Shout Out TV function can be used to broadcast stories of exceptional practices and the employees behind them. This not only serves as a recognition tool but also as an educational one, providing a platform for employees to showcase their work and explain the strategies and methods they used. This storytelling approach makes the learning process more engaging and relatable, as employees can see real-world examples of successful practices in action.



Figure 3.6: Discovering and Spreading Good Company Practices

Additionally, the app supports the development of mentorship programs by highlighting employees who consistently demonstrate good practices. These employees can be identified as mentors who can guide others in adopting similar approaches. By connecting employees with mentors who have been recognized for their effective practices, the app fosters a culture of learning and professional growth.

The Shout Out App is instrumental in discovering and spreading good company practices by creating a platform for recognition and knowledge sharing. It highlights successful strategies, promotes transparency and collaboration, categorizes and organizes best practices, and supports mentorship programs. Through these mechanisms, the app helps to embed a culture of continuous improvement and innovation, driving the organization towards higher levels of performance and success.

3.3 Increasing Staff Engagement

Increasing staff engagement is a crucial objective of the Shout Out App, and it plays a significant role in enhancing overall organizational performance and employee satisfaction. The Shout Out App achieves this by fostering a workplace environment where recognition, appreciation, and communication are integral parts of daily operations, thereby motivating employees to be more engaged and committed to their work.

At its core, the Shout Out App transforms the traditional dynamics of employee recognition by making it a frequent, accessible, and enjoyable activity. The ability to send "breads" as tokens of appreciation for colleagues' efforts creates a positive feedback loop that boosts morale and reinforces desirable behaviors. This regular recognition makes employees feel valued and appreciated, which is a key driver of engagement. When employees know that their hard work and contributions are acknowledged and celebrated, they are more likely to feel a sense of belonging and loyalty to the organization.

The app also facilitates peer-to-peer recognition, which is often more impactful than recognition from management alone. When employees recognize each other's achievements, it fosters a sense of camaraderie and mutual respect. This peer recognition creates a supportive and collaborative environment where everyone feels encouraged to contribute their best. The positive interactions facilitated by the app help build stronger relationships among team members, leading to a more cohesive and motivated workforce.

In addition to fostering a culture of recognition, the Shout Out App enhances engagement by incorporating elements of gamification. Features like leaderboards and Shout Out TV introduce a fun and competitive aspect to the workplace. Leaderboards track and display the frequency and reasons for recognition, creating a friendly competition that motivates employees to participate more actively. Shout Out TV, which showcases live feeds of appreciation activities, adds a celebratory element to recognition, making it visible and exciting for everyone in the organization. These gamified elements not only make recognition more engaging but also create a vibrant and dynamic work environment.

The Shout Out App also addresses the need for continuous feedback and communication, which are essential components of employee engagement. The Pulse feature

allows organizations to conduct quick surveys to gauge employee sentiment and gather feedback on various aspects of the workplace. This real-time feedback mechanism enables management to understand the concerns and needs of their employees better and to take proactive measures to address any issues. By providing a platform for employees to voice their opinions and feel heard, the app fosters a more inclusive and responsive workplace culture.



Figure 3.7: Increasing Staff Engagement

Custom rewards in the Shout Out Shop further enhance engagement by allowing employees to redeem their accumulated breads for meaningful rewards. These rewards can range from tangible items like company merchandise to experiences like extra time off or lunch with the CEO. The ability to earn and choose rewards adds a personalized touch to the recognition process, making it more motivating and relevant to individual employees. This personalized approach ensures that recognition is not just a one-time event but an ongoing incentive for sustained engagement and performance.

The Shout Out App helps in building a transparent and fair recognition system. By making recognition activities visible to all, the app ensures that recognition is based

on merit and contributions rather than favoritism. This transparency builds trust in the recognition process and encourages employees to strive for excellence, knowing that their efforts will be fairly acknowledged. A fair and transparent recognition system is crucial for maintaining high levels of engagement and morale within the organization.

3.4 Facilitating Communication with Emojis

Facilitating communication with emojis is a central feature of the Shout Out App, aimed at enhancing interpersonal interactions within the workplace. This innovative approach leverages the expressive power of emojis to make communication more engaging, relatable, and less formal, thus improving the overall workplace atmosphere and fostering a sense of community among employees.

Emojis are a universal language that transcends traditional barriers, such as language differences and hierarchical distinctions. By incorporating emojis into the Shout Out App, employees can express gratitude, appreciation, and other positive sentiments in a way that feels natural and immediate. For instance, sending a “thank you” with a bread emoji or a “great job” with a thumbs-up emoji can convey warmth and sincerity that might be lost in plain text. This helps to humanize digital interactions, making them more personal and impactful.

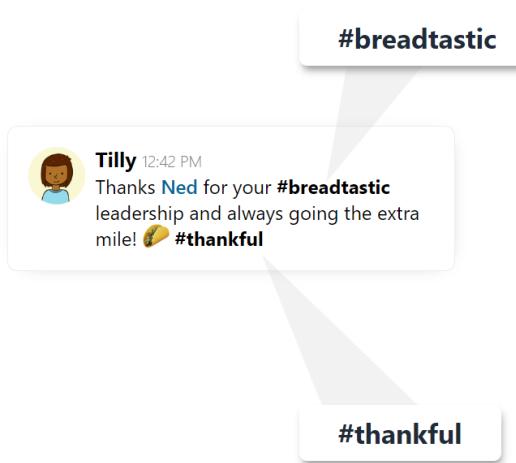


Figure 3.8: Facilitating Communication with Emojis

The use of emojis also reduces the formality that often characterizes workplace communication. Traditional corporate environments can sometimes discourage open and spontaneous expressions of appreciation due to their formal nature. However, emojis inject a sense of playfulness and informality into interactions, encouraging employees to express themselves more freely. This can lead to a more relaxed and open communication culture, where employees feel comfortable sharing their thoughts and recognizing their peers without the constraints of formal language.

Furthermore, emojis can enhance the clarity of communication. Text-based messages can sometimes be ambiguous or misinterpreted, especially in a fast-paced work environment where messages are often brief. Emojis add an additional layer of meaning, providing visual context that helps to clarify the sender's intent. For example, a simple "Great work!" can be reinforced with a celebratory emoji, making the praise more emphatic and clear. This can reduce misunderstandings and ensure that positive messages are received as intended.

The Shout Out App's integration of emojis also supports cultural inclusivity. Emojis are widely recognized and used across different cultures, making them an effective tool for bridging cultural gaps in a diverse workforce. By using emojis, employees from various cultural backgrounds can communicate appreciation and recognition in a universally understood manner. This inclusivity helps to build a more cohesive and harmonious work environment, where everyone feels understood and valued.

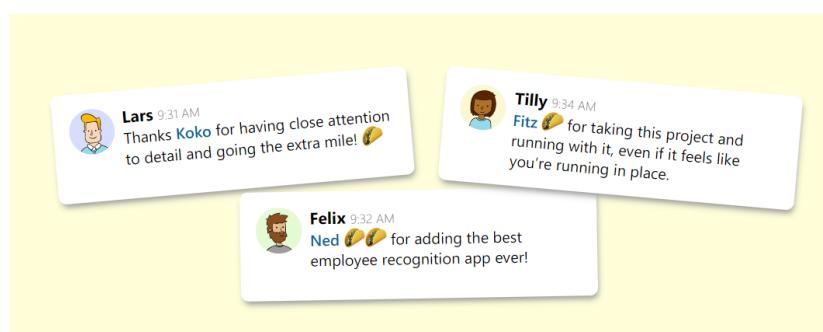


Figure 3.9: Facilitating Communication with Emojis

In addition to enhancing day-to-day communication, emojis can play a significant role in formal recognition activities within the Shout Out App. For example, when sending a bread to recognize a colleague's achievement, employees can choose from a variety of emojis to personalize their message. This customization adds a layer of cre-

ativity and personal touch to the recognition process, making it more meaningful for both the sender and the recipient. Employees can use emojis to tailor their messages to reflect the specific nature of the accomplishment, making the recognition more relevant and impactful.

Emojis also contribute to the visual appeal and user-friendliness of the Shout Out App. The app's interface, enriched with colorful and expressive emojis, creates a vibrant and engaging user experience. This visual appeal encourages more frequent use of the app, as employees are drawn to its dynamic and interactive design. A user-friendly interface that incorporates familiar and fun elements like emojis can significantly increase employee engagement with the app, ensuring that the recognition and appreciation mechanisms are actively utilized.

The use of emojis can foster a positive and uplifting workplace culture. Emojis are often associated with positive emotions and can help to create an atmosphere of joy and celebration. When employees see a stream of emoji-filled recognitions and messages in the app, it contributes to a sense of collective positivity and enthusiasm. This can have a ripple effect, enhancing overall workplace morale and creating a more enjoyable and supportive work environment.

Facilitating communication with emojis through the Shout Out App enhances interpersonal interactions, reduces formality, clarifies messages, supports cultural inclusivity, and fosters a positive workplace culture. By making communication more engaging and expressive, emojis help to create a more connected and motivated workforce, where recognition and appreciation are seamlessly integrated into daily interactions.

3.5 Providing Customizable Recognition and Rewards

Providing customizable recognition and rewards is a pivotal feature of the Shout Out App, designed to tailor the recognition experience to fit the unique culture and preferences of each organization. This customization ensures that the recognition and reward systems are not only meaningful and motivating for employees but also aligned with the specific values and goals of the company.

At the heart of customizable recognition is the ability to personalize the way employees are acknowledged for their contributions. The Shout Out App allows organizations to create custom tags that represent specific values, achievements, or behaviors they want to highlight. For instance, tags like #innovation, #teamwork, or #customerService can be created to align with the company's strategic priorities. When employees send a "bread" to recognize a colleague, they can choose from these custom tags, making the recognition more specific and relevant. This targeted approach ensures that the recognition is not only appreciated but also reinforces the desired behaviors and values within the organization.

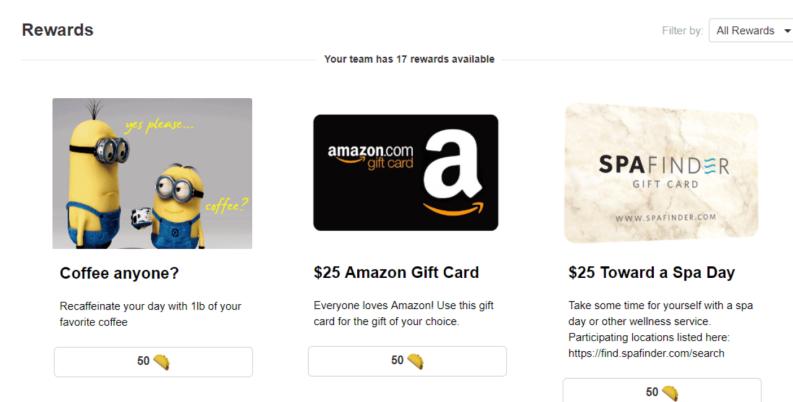


Figure 3.10: Providing Customizable Recognition and Rewards

The customizable nature of the Shout Out App extends to the rewards system as well. The Shout Out Shop feature allows organizations to design and manage a variety of rewards that employees can redeem using their accumulated breads. These rewards can range from tangible items like company-branded merchandise to experiential rewards such as extra vacation days, lunch with the CEO, or priority parking spots. The flexibility to define these rewards means that organizations can offer incentives that truly resonate with their employees, enhancing the motivational impact of the recognition program. This tailored approach ensures that the rewards are meaningful and desirable, encouraging employees to engage more actively in the recognition process.

Moreover, the ability to customize rewards allows organizations to periodically update and refresh the offerings in the Shout Out Shop. This dynamic approach keeps the rewards system exciting and relevant, preventing it from becoming stale or predictable. By regularly introducing new and varied rewards, companies can maintain

high levels of employee interest and participation in the recognition program. This ongoing engagement is crucial for sustaining the effectiveness of the recognition and rewards system over the long term.

Customization also extends to the visual and interactive elements of the Shout Out App. Organizations can personalize the app's interface with their branding, including logos, colors, and other design elements that reflect their corporate identity. This branding integration makes the app feel like a seamless part of the company's ecosystem, reinforcing a sense of belonging and unity among employees. Additionally, the app allows for the creation of custom stickers that can be used to enhance recognition messages. These stickers can be designed to align with company themes, events, or cultural milestones, adding a fun and personal touch to the recognition experience.

The Shout Out App's customization capabilities also include the ability to create and manage recognition campaigns. These campaigns can be tailored to specific initiatives or time periods, such as quarterly performance reviews, project completions, or annual awards. By organizing recognition efforts around these campaigns, organizations can focus their recognition activities on key objectives and milestones, driving greater alignment and impact. Customizable campaigns ensure that recognition is timely and relevant, celebrating achievements as they happen and keeping employees motivated and engaged.

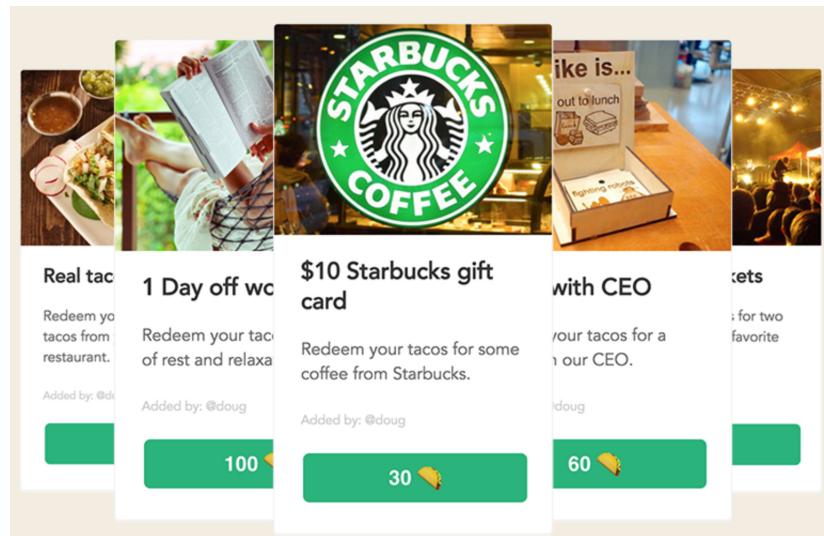


Figure 3.11: Providing Customizable Recognition and Rewards

Chapter 4

Platform

4.1 Why Slack?

Slack is a premier team collaboration platform, renowned for its intuitive design and extensive functionalities that streamline communication and boost productivity. As a widely adopted tool in corporate environments, Slack provides an ideal ecosystem for the Shout Out App to thrive.

One of the main reasons Slack is a suitable choice for the Shout Out App is its user-friendly interface. Employees are generally familiar with Slack, reducing the learning curve and ensuring that they can start using the Shout Out App almost immediately. This ease of use is critical for fostering a culture of frequent recognition and appreciation without the need for extensive training sessions.



Figure 4.1: Why Slack?

Slack's real-time messaging capabilities are another significant advantage. The Shout Out App can leverage these capabilities to allow instant recognition and feedback. When an employee receives a 'bread' for their efforts, they are notified immediately, which helps in maintaining a high level of engagement and motivation. This immediacy is crucial for keeping the spirit of appreciation alive and encouraging continuous positive interactions among team members.

Centralized communication is a hallmark of Slack, making it easier to track and celebrate achievements. With dedicated channels, threads, and direct messages, all bread-related interactions can be organized and easily accessible. This centralization not only helps in maintaining a record of recognition activities but also ensures that

the entire team can witness and participate in the appreciation culture.

Customization is another key feature of Slack that makes it an excellent platform for the Shout Out App. Slack's extensive customization options allow the app to be tailored to the specific needs and culture of the company. From custom emojis to personalized commands and integrations, the Shout Out App can be adapted to reflect the unique identity and values of the organization.



Figure 4.2: Why Slack?

Moreover, Slack's robust API support enables seamless integration with the Shout Out App. This integration facilitates the creation of custom functionalities, such as sending breads, managing rewards, and conducting surveys, directly within the Slack interface. The API support ensures that the app can provide a smooth and cohesive user experience, blending naturally with other tools and workflows that employees are already using.



Figure 4.3: Slack API

In summary, Slack's user-friendly interface, real-time messaging, centralized communication, customization options, and robust API support make it an ideal platform for the Shout Out App. These features collectively ensure that the app can effectively enhance employee engagement, foster a culture of appreciation, and ultimately contribute to a stronger and more cohesive corporate culture.

4.2 Technical Requirements

To integrate the Shout Out App effectively with Slack, several technical requirements must be met to ensure smooth operation and seamless user experience. This project leverages multiple technologies and frameworks to achieve its goals, including Slack's Bolt framework for the bot, Express.js for website management and the dashboard, and Apache2 and PM2 for deployment.

The first step involves creating a Slack app through the Slack Developer Portal. This app needs to be configured with the appropriate OAuth scopes to allow the bot to perform necessary actions within the Slack workspace. These scopes might include permissions to read user data, send messages, and interact with channels and direct messages. Additionally, setting up a bot user and enabling event subscriptions is crucial. Event subscriptions allow the app to listen to specific events in the Slack workspace, such as when a message is posted or a reaction is added, enabling real-time interactions and responses.

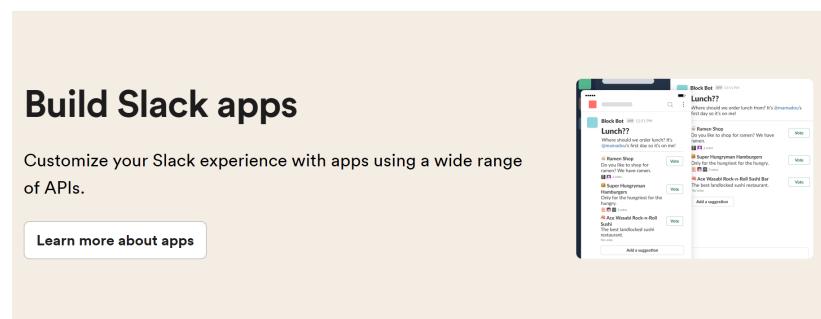


Figure 4.4: Slack Developer Portal

The core of the Slack integration is built using Slack's Bolt framework for JavaScript. Bolt simplifies the process of developing Slack apps by providing a robust and intuitive

framework for handling interactions and events. This framework handles the complexities of the Slack API, allowing developers to focus on building the unique features of the Shout Out App. Using Bolt, the app can manage tasks such as sending breads, processing commands, and handling user interactions efficiently.

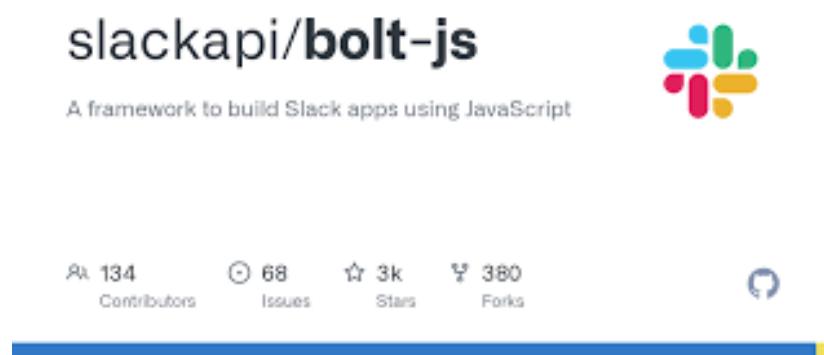


Figure 4.5: Slack's Bolt framework for JavaScript

For managing the website and the dashboard, the project employs Express.js, a popular web application framework for Node.js. Express.js provides a flexible and minimalistic structure for building web applications and APIs. It allows the creation of routes to handle various HTTP requests, manage sessions, and serve static files. The dashboard, built using Express.js, provides admins with an intuitive interface to manage rewards, track engagement metrics, and configure app settings.



Figure 4.6: Express JS

To ensure reliable and scalable deployment, the project uses Apache2 and PM2. Apache2, a widely-used web server software, serves as the gateway for handling incoming HTTP requests and directing them to the appropriate backend services. PM2,

a production process manager for Node.js applications, manages the Express.js application. PM2 ensures that the application runs smoothly by handling process management, monitoring, and automatic restarts in case of failures. This combination of Apache2 and PM2 provides a robust and scalable deployment solution, ensuring high availability and performance for the Shout Out App.



Figure 4.7: Apache2



Figure 4.8: PM2

A reliable database system is also essential for storing user information, bread transactions, tags, rewards, and survey data. MongoDB, a popular NoSQL database, is well-suited for this purpose due to its flexibility and scalability. MongoDB allows for efficient storage and retrieval of the structured and semi-structured data that the Shout Out App generates and manages.



Figure 4.9: MongoDB

Finally, secure authentication using OAuth is implemented to protect user data and interactions. OAuth ensures that only authorized users can access and perform actions within the app, maintaining the integrity and security of the system.

In summary, the technical requirements for the Shout Out App involve a combination of creating and configuring a Slack app, using the Bolt framework for the bot, leveraging Express.js for web management, deploying with Apache2 and PM2, and ensuring secure data storage with MongoDB. This comprehensive technical stack ensures a seamless, efficient, and secure integration with Slack, providing a robust foundation for the Shout Out App to enhance workplace recognition and engagement.

4.3 Implementation Process

4.3.1 Initial Setup and Configuration

Slack App Creation: Begin by creating a new Slack app through the Slack Developer Portal. Configure the app's basic information, such as its name, icon, and description.

OAuth Scopes and Permissions: Define the OAuth scopes required for the app to perform its functions, such as reading user information, sending messages, and managing

reactions.

Bot User and Event Subscriptions: Set up a bot user for the app and subscribe to relevant events (e.g., message events, reaction events) to enable real-time interactions and responses within Slack.

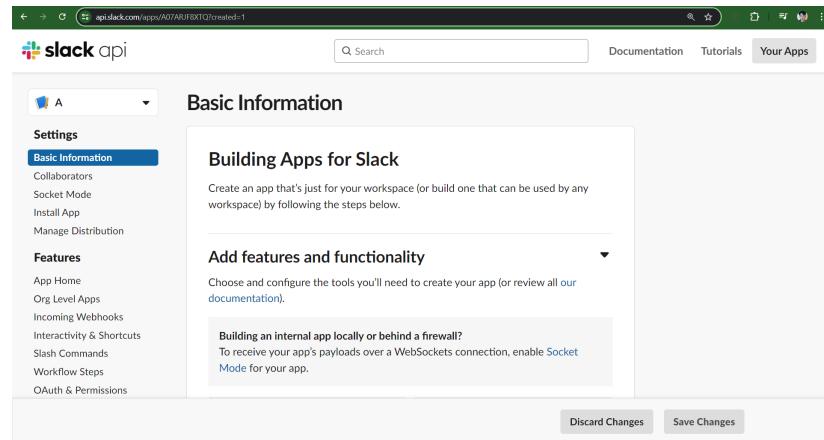


Figure 4.10: Create Slack App

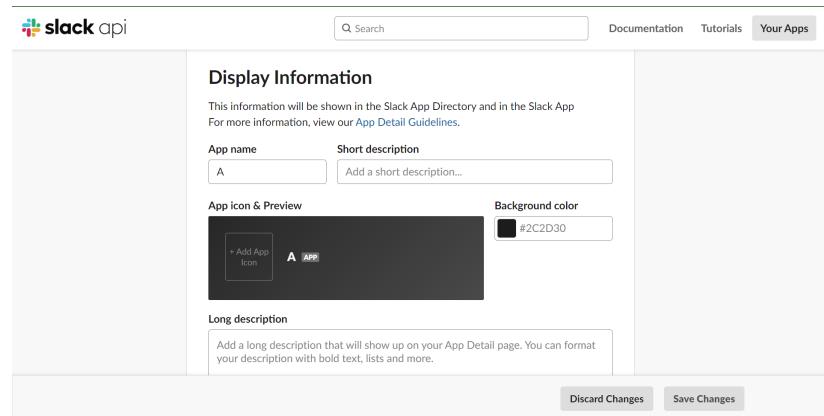


Figure 4.11: Create Slack App

4.3.2 Backend Development with Slack's Bolt Framework

Bolt Framework Integration: Utilize Slack's Bolt framework for JavaScript to streamline the development of the Slack app. Bolt handles incoming events and actions, simplifying interactions with Slack's API.

Handling Interactions: Implement logic to handle interactions initiated by users,

such as sending tacos, managing rewards, and processing commands. Use Bolt's middleware and listeners to manage complex workflows and interactions efficiently.

Authentication and Security: Implement OAuth authentication to secure user interactions and ensure that only authorized users can access the app's functionalities. Manage tokens securely and handle refresh mechanisms to maintain session integrity.

The screenshot shows a web browser displaying the Bolt Framework documentation. The left sidebar contains a navigation menu with links like 'Getting started', 'Reference', 'Basic concepts', 'Listening to messages', 'Sending messages', etc. The main content area has a heading 'Listening to messages'. It includes a code snippet for listening to messages containing 'wave':

```
// This will match any message that contains "wave"
app.message('wave', async ({ message, say }) => {
  // Handle only newly posted messages here
  if (message.subtype === undefined) {
    // message subtype === "bot_message"
    // message subtype === "file_share"
    // message subtype === "thread_broadcast"
    await say(`Hello, ${message.user}`);
  }
});
```

Below this, there's a section titled 'Using a RegExp pattern' and another section titled 'Sending messages'.

Figure 4.12: Bolt Framework

4.3.3 Dashboard and Admin Interface Development with Express.js

Express.js Integration: Develop a web-based dashboard using Express.js to provide administrators with tools to manage app settings, view analytics, and configure custom rewards.

Database Integration: Integrate MongoDB or another suitable database to store and retrieve data related to user profiles, taco transactions, rewards, and survey responses. Ensure database schemas align with app functionalities and support efficient data management and querying.

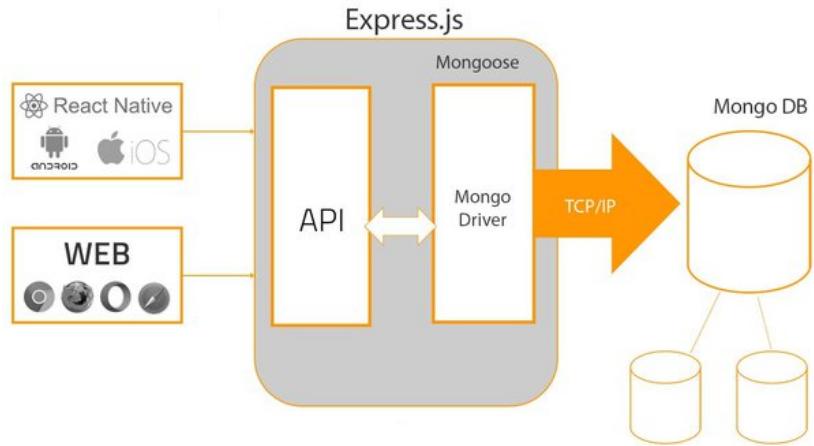


Figure 4.13: ExpressJS and MongoDB

4.3.4 Deployment

Deployment Strategy: Deploy the Slack app and Express.js dashboard using Apache2 and PM2 for production-grade deployment. Configure Apache2 as the web server to handle incoming requests and proxy requests to the Express.js application managed by PM2.

Testing and Quality Assurance: Conduct thorough testing, including unit testing, integration testing, and user acceptance testing (UAT), to validate app functionality, performance, and user experience. Gather feedback from stakeholders and make iterative improvements based on testing results.

4.3.5 Training and Onboarding

User Training: Provide comprehensive training sessions and documentation for users to familiarize themselves with using the Shout Out App within Slack. Highlight key features, best practices, and tips for maximizing engagement and participation.

Administrator Training: Offer specialized training for administrators responsible for managing app settings, configuring rewards, and analyzing engagement metrics through the Express.js dashboard.

Support and Maintenance: Establish protocols for ongoing support and maintenance, including handling user inquiries, monitoring app performance, and implementing updates and enhancements based on user feedback and changing organizational needs.

Chapter 5

Project Planning and Development

5.1 Initial Concept and Ideation

Brainstorming and Requirements Gathering: Begin with a thorough analysis of project requirements, including stakeholder expectations, user needs, and technical specifications. Conduct brainstorming sessions to generate ideas and define the scope of the Shout Out App.

Feature Prioritization: Use Jira to create user stories, epics, and tasks based on the gathered requirements. Prioritize features and functionalities according to their importance and potential impact on achieving project objectives, such as enhancing employee engagement and fostering a positive company culture.

5.2 Project Timeline and Scheduling

Creating a Project Roadmap: Develop a detailed project roadmap in Jira, outlining key milestones, deliverables, and deadlines. Break down the project into manageable phases or sprints, each focusing on specific aspects of development, integration, testing, and deployment.

Resource Allocation: Assign tasks and responsibilities to team members within Jira, ensuring clear accountability and efficient resource utilization. Define roles and responsibilities, considering skills and expertise required for each project phase.

The screenshot shows a Jira project titled "BanHMi Software project". The left sidebar includes sections for PLANNING (Timeline, Board, Calendar), DEVELOPMENT (Goals, Issues, Code), and Project pages. The main area displays a "List" view of tasks under the "BanHMi" project. The tasks are listed in rows with the following details:

Type	Key	Summary	Status	Assignee	Due date	Labels
☐	BAN-5	Create name for this project	TO DO	shogo.harada		
☐	BAN-18	Private error message in sending banhmi	DONE	loc.bui		
☐	BAN-6	Deploy Document	DONE	loc.bui		
☐	BAN-12	Sent banhmi-s to other one	DONE	loc.bui		
☐	BAN-13	Deploy website to server	DONE	loc.bui		
☐	BAN-14	Send notification to sender and receiver when sent banhmi	DONE	loc.bui		
☐	BAN-1	Create requirement document	DONE	Hoang.LQ		
☐	BAN-9	Revise the method of receiving bread daily	DONE	loc.bui		
☐	BAN-17	Remove config banhmi in a message	DONE	loc.bui		
☐	BAN-2	Set up and Setting Document	IN PROGRESS	loc.bui		
☐	BAN-3	User Guide	IN PROGRESS	loc.bui		

Figure 5.1: Project Roadmap

5.3 Development Methodology

Adopting Agile Practices: Implement Agile methodologies, such as Scrum or Kanban, to facilitate iterative development and continuous improvement. Use Jira boards to manage Agile workflows, track progress, and adapt to changing requirements through sprint planning, daily stand-ups, and sprint retrospectives.

Iterative Development: Break down development tasks into smaller, manageable units (user stories) that can be completed within each sprint. Use Jira's sprint planning features to prioritize and assign user stories, monitor progress, and adjust priorities based on team velocity and feedback.

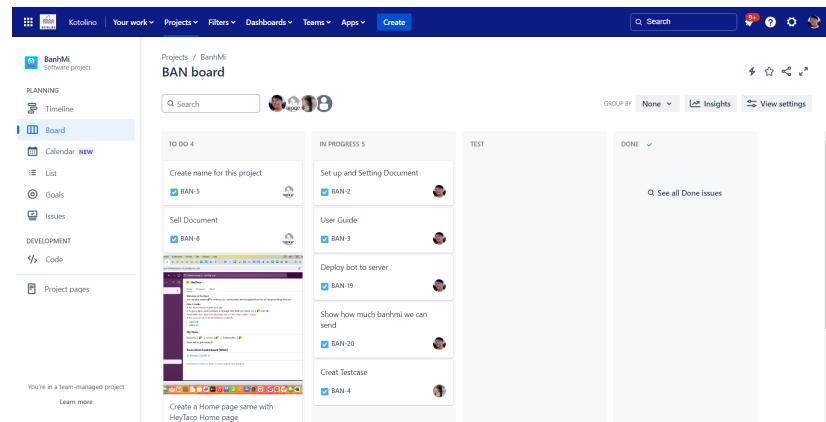


Figure 5.2: Kanban board

5.4 Team Roles and Responsibilities

Defining Team Structure: Establish a clear team structure within Jira, identifying roles such as product owner, Scrum master, developers, testers, and UX/UI designers. Clarify communication channels and collaboration tools to ensure effective teamwork and alignment throughout the project lifecycle.

Collaboration and Communication: Utilize Jira's built-in communication features, such as comments, mentions, and notifications, to foster collaboration among team members. Ensure transparency by documenting decisions, updates, and discussions within Jira for future reference and accountability.

5.5 Continuous Improvement and Feedback

Sprint Retrospectives: Conduct regular sprint retrospectives within Jira to reflect on team performance, identify areas for improvement, and implement actionable feedback. Use retrospective insights to refine development processes, enhance collaboration, and optimize project outcomes.

User Feedback Incorporation: Integrate user feedback loops into the development cycle through Jira's feedback collection and analysis tools. Gather insights from stakeholders and end-users to validate assumptions, prioritize feature enhancements, and ensure the Shout Out App meets user expectations and business goals.

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