



DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING

DESIGN THINKING LAB - AI237DL

DOMAIN : DIGITAL HUMANITIES

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STP ANALYSIS

S Segmentation

- Students who wait during lunch break
- Faculty members find time to eat during between classes

T Targeting

- Primary targets-Students
- Secondary targets-Faculty members

P Positioning

- Positioning the advanced booking as a quick, reliable to streamline the dining experience and to provide hassle free lunch hour

Thinks

- Typical Thoughts: Users worry. "Will I have enough time for lunch today?"
- Impact: This reveals concerns about time constraints, pointing to the need for a solution that ensures timely service, such as a pre-booking system.

Feels

- Emotional Responses: Users feel frustrated by long waits and worried about missing other commitments.
- Impact: Understanding these emotions highlighted the importance of predictability and efficiency in the dining experience, supporting the need for a solution like a pre-booking system.

Says

- Common Comments: Users frequently mention, "The lines are too long" and "It's hard to find a seat."
- Impact: These direct statements highlight a need for faster service and improved seating options, showing users' desire for a more efficient dining experience.

Does

- Observed Behaviors: Students and faculty often arrive early or skip lunch to avoid crowds.
- Impact: These adjustments indicate that users would value a system to reduce wait times, helping them maintain their schedules without altering routines.

Long Wait Times

Overcrowding

Missed Meals

Inefficient Queue Management

Staff Workload Pressure

Need for a Streamlined Solution

4. Do you usually wait in line for tickets, or do you prefer to eat at a different time to avoid the rush?

205 responses

• always wait in line: 55.6%
• I sometimes wait but avoid peak times when possible: 36.3%
• I often eat at a different time to avoid the rush: 8.1%
• I never eat during the rush hours: 0.0%

Mingos, the college dining facility, faces challenges during peak lunch hours with long wait times, overcrowding, and inefficient service. These issues lead to dissatisfaction among students and faculty, impacting schedules and reducing meal accessibility.

EMPATHY PHASE

What is the average waiting time you experience during the lunch rush?

205 responses

• Less than 10 minutes: 50%
• 10-20 minutes: 32.3%
• 20-30 minutes: 13.2%
• More than 30 minutes: 4.5%

3. How do long waiting times impact your overall schedule and productivity?

205 responses

• Not at all: 42.9%
• Slightly impacts: 34.6%
• Moderately impacts: 10.2%
• Significantly impacts: 12.2%

1. How often do you eat at Mingos?

205 responses

Daily: 30 (14.6%)
3-4 times a week: 61 (29.8%)
Once or twice a week: 49 (33.7%)
Rarely: 49 (23.9%)

5. What frustrates you the most about the current system at Mingos during peak hours?

205 responses

Long waiting times: 122 (59.5%)
Lack of organization: 96 (46.8%)
Crowding and chaos: 177 (86.3%)
Limited food options available during rush times: 38 (18.5%)

5. What frustrates you the most about the current system at Mingos during peak hours?

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SWOT ANALYSIS

S STRENGTHS

- A pre-booking system can reduce wait times and improve service flow.

W WEAKNESSES

- Implementing the system may require upfront investment and training.

O OPPORTUNITIES

- Enhances student and faculty satisfaction, potentially increasing facility usage.

T THREATS

- Risks include potential technical issues and reliance on user adoption.

Primary: Students, Faculty

Secondary: Stake-Holder Mapping, Food Suppliers, Mingos Staff

Final PoV

Students want a queue-management and real-time update system at Mingos to reduce wait times, streamline pick-up, and improve their overall dining experience, making lunch hours more efficient and satisfying.

How Might We ?

- How might we ensure that students and staff can easily find available food options in real time?
- How might we design a system that notifies customers if their chosen food item becomes unavailable after pre-payment?
- How might we manage and reduce crowding by implementing better queue management and pre-booked time slots?
- How might we make the pre-booking process simple and accessible for students during classes or limited breaks?
- How might we improve the experience of collecting food to avoid confusion and long wait times?

Madlib

User needs to user's needs because insight .

Our users are Students who need a way to reduce wait times and improve the dining experience during peak hours because of limited time and overcrowding.

IDEATE PHASE

FEASIBILITY ANALYSIS

IDEA	TECHNICAL FEASIBILITY	FINANCIAL FEASIBILITY	OPERATIONAL FEASIBILITY	TIME FEASIBILITY
SLOT BOOKING SYSTEM	HIGH	HIGH	HIGH	HIGH
TIME-BASED SLOTS	HIGH	HIGH	HIGH	MEDIUM
MENU CUSTOMIZATION	HIGH	MEDIUM	MEDIUM	MEDIUM
ESTIMATED WAIT TIME	MEDIUM	MEDIUM	LOW	LOW
MULTI-ORDER MANAGEMENT	MEDIUM	MEDIUM	MEDIUM	MEDIUM
TOKEN-BASED ENTRY	MEDIUM	MEDIUM	LOW	LOW
DYNAMIC QUEUE ASSIGNMENT	LOW	MEDIUM	LOW	LOW
USER TRENDS ANALYSIS	LOW	LOW	LOW	LOW
PRIORITY SERVICE LINE	LOW	LOW	LOW	LOW
STAFF ALLOCATION	LOW	LOW	LOW	LOW
INVENTORY MANAGEMENT	LOW	LOW	LOW	LOW
SELF-SERVICE KIOSKS	LOW	LOW	LOW	LOW

MoSCoW Prioritization

- Must-Have**
 - Slot Booking System
 - Time-Based Slots
 - Menu Customization
 - Estimated Wait Time
- Should-Have**
 - Dynamic Queue Assignment
 - Token-Based Entry
 - Priority Service Line
 - Staff Allocation
 - Inventory Management
- Could-Have**
 - Multi-Order Management
 - Self-Service Kiosks
- Won't-Have**
 - User Trends Analysis
 - Automation Tool
 - Impact vs Effort Analysis

Impact vs Effort Analysis

Workflow Flowchart

```

    graph TD
        Start((USER INTERACTS WITH THE BOT)) --> Welcome{WELCOME TO THE FOOD ORDERING BOT!}
        Welcome --> CommandSelection{COMMAND SELECTION}
        CommandSelection --> ThankYou{THANK YOU FOR USING THE BOT!}
        
        CommandSelection -- /MENU --> DisplayMenu[DISPLAY MENU WITH FOOD ITEMS]
        CommandSelection -- /COUNTER --> ViewBasket[VIEW BASKET]
        CommandSelection -- /TIME --> TimeSlotBooking[TIME SLOT BOOKING]
        CommandSelection -- /CLEAR --> ResetBasket[RESET BASKET]
        
        DisplayMenu --> UserClicksFood[USER CLICKS ON FOOD ITEMS]
        UserClicksFood --> ItemAddedBasket[ITEM ADDED TO BASKET]
        
        ViewBasket --> IsBasketEmpty1{IS THE BASKET EMPTY?}
        IsBasketEmpty1 -- YES --> YourBasketIsEmpty[YOUR BASKET IS EMPTY.]
        IsBasketEmpty1 -- NO --> DisplaySelectedItems[DISPLAY SELECTED ITEMS AND TOTAL COST]
        
        TimeSlotBooking --> IsBasketEmpty2{IS THE BASKET EMPTY?}
        IsBasketEmpty2 -- YES --> CannotCheckout[CAN NOT CHECKOUT, BASKET IS EMPTY.]
        IsBasketEmpty2 -- NO --> ConfirmOrder[CONFIRM ORDER, DISPLAY TOTAL COST AND TOKEN NUMBER, CLEAR BASKET]
        
        ResetBasket --> ThankYou
    
```

1. Web App/Cloud-Based Service

- The bot operates over the internet and is accessible to users through the Telegram platform.
- It doesn't require installation as it leverages Telegram's existing infrastructure.

2. Cross-Platform Application

- Since the bot operates within Telegram, it is inherently cross-platform, working seamlessly on iOS, Android, desktop, and web versions of Telegram.

3. Automation Tool

- Automates tasks such as order tracking, time-slot scheduling, and checkout management, improving user efficiency and convenience.

PROTOTYPE PHASE

Mingos bot

Welcome Use the following commands: /start

Select items to add to your basket:

Basket:
Item: Biryani (4pc) : 1 x ₹30
Juices (Lemon/Watermelon/Muskmelon) : 1 x ₹25
Milk Shakes (Banana/Sapota/Apple) : ₹50
Special Shakes (Oreo/Bubblegum/Cotton Candy) : ₹60

Next

Available commands: /menu - Show food menu /counter - Show items in basket /time - Book a time slot /checkout - Place your order /clear - Reset all selections

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Click-Through Prototype

TESTING PHASE

USER FEEDBACK AND SUGGESTIONS :

- Integration of UPI for digital payments
- Menu customization
- Multi language support
- Display History

Positive feedback from users:

- Faster ordering
- Better Experience

Key Considerations:

Operational Challenges : Handling both app-based and walk-in orders can lead to confusion or delays if not managed properly.

User Reviews :

"Rough waiting timing can be showed on each time slot so that we can decide an optimised time slot based on our convenience"

"A notification could be provided when the order is ready"