

# QuickBite

Online Food Delivery Application

## HCI Design Report

Interactive Design Layout & Scheme

Mid-Semester Design Project

**Name:** Y.Niranjana

**Roll No:** CS23B1076

**Course:** Human-Computer Interaction (HCI)

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# 1. Introduction

**QuickBite** is a food delivery mobile application designed to provide a simple and intuitive food ordering experience. The design covers the complete user journey from onboarding to order tracking, with all decisions grounded in HCI principles.

- 12 core screens covering the full ordering flow
- Built as an interactive HTML/CSS/JS prototype
- Mobile-first layout (390 x 844px)
- Typography: Poppins (Google Fonts)
- Icons: Font Awesome 6

## 1.1 Screens Overview

#	Screen	Purpose
1	Splash Screen	Brand identity and loading indicator
2	Onboarding (3 slides)	Feature introduction (Browse, Order, Enjoy)
3	Login / Sign Up	Phone OTP authentication with social login options
4	Home Dashboard	Main hub with categories and restaurants
5	Search Screen	Discovery with filters, sort, trending
6	Restaurant Listing	Menu browsing, customization, add to cart
7	Cart Screen	Order review, coupon, bill breakdown, checkout
8	Order Confirmation	Success screen with order details
9	Order Tracking	Real-time status, map, delivery partner info
10	Order History	Past orders, reorder, rate and review
11	Profile / Account	Settings, addresses, payments
12	Help & Support	FAQ, live chat, issue reporting

Table 1: Complete list of designed screens

## 1.2 Color Palette

Color	Hex Code	Role	Usage
Orange	#FF6B35	Primary	Buttons, CTAs, branding
Red	#D63031	Secondary	Errors, offers, non-veg indicator
White	#FFFFFF	Background	Screen backgrounds, cards
Light Gray	#F5F5F5	Surface	Input fields, sections
Charcoal	#2D3436	Text (dark)	Headings
Gray	#636E72	Text (body)	Descriptions, meta info
Green	#00B894	Accent	Success states, ratings, veg indicator

Table 2: Color palette

## 2. 80-20 Rule (Pareto Principle)

The Pareto Principle states that roughly 80% of effects come from 20% of causes. In QuickBite, the critical 20% of features receive the most design attention.

### 2.1 Critical 20% (Primary Focus)

- **Browse Food (Home):** Categories, restaurant cards, and promotional banners placed front-and-center
- **Search:** Prominent search bar with filters, trending items, and recent searches
- **Menu & Add to Cart (Restaurant):** Clear menu items with one-tap add and customization popup
- **Cart & Checkout:** Price breakdown, coupon field, and prominent “Place Order” button
- **Order Tracking:** Step-by-step progress indicator, ETA, map, and delivery partner info

### 2.2 Supporting 80% (Secondary)

- Profile management, order history, help & support, notifications
- Accessed through bottom navigation or nested menus
- Organized but do not clutter the core ordering flow

The bottom navigation prioritizes core actions: Home, Search, Cart, Orders, Profile. The ordering flow (Browse → Select → Cart → Order → Track) is always within 1–2 taps.

### 3. Shneiderman's 8 Golden Rules

#### 3.1 Rule 1: Strive for Consistency

- Same button styles, card patterns, corner radius, and color scheme across all 12 screens
- Bottom navigation maintains identical positioning and styling everywhere
- Poppins font used consistently for all text

#### 3.2 Rule 2: Seek Universal Usability / Enable Shortcuts

- “Reorder” button on past orders for quick repeat ordering
- Saved addresses (Home, Work) for one-tap delivery selection
- Recent searches displayed for quick re-search
- Keyboard shortcuts (1–0 keys) in the prototype for direct screen access

#### 3.3 Rule 3: Offer Informative Feedback

- Coupon applied shows green confirmation message
- Order placement shows a confirmation screen with confetti animation
- Adding items updates the cart badge with a scale animation
- Order tracking provides step-by-step updates with timestamps
- OTP input auto-advances between fields

#### 3.4 Rule 4: Design Dialogs to Yield Closure

- Ordering flow concludes with a dedicated confirmation screen
- Shows Order ID, restaurant name, estimated time, and total paid
- Green checkmark with animation provides clear sense of completion

#### 3.5 Rule 5: Prevent Errors / Simple Error Handling

- Phone number input validates 10-digit format in real time
- Invalid input shows clear error messages
- OTP boxes auto-advance to prevent misentry
- Full bill breakdown shown before placing order

### **3.6 Rule 6: Permit Easy Reversal of Actions**

- Cart items have +/- quantity controls and remove option
- Delivery address changeable via “Change” button
- Orders cancellable from the tracking screen
- Back buttons on every sub-screen

### **3.7 Rule 7: Keep Users in Control**

- Veg/Non-Veg filter toggles on search and restaurant screens
- Sort options (Rating, Cost, Time)
- Menu category navigation pills
- Customizable order options (size, toppings, special instructions)
- Notification preferences toggle in profile

### **3.8 Rule 8: Reduce Short-term Memory Load**

- Cart badge on bottom nav always shows item count
- Floating cart summary bar on restaurant page shows items and total
- Progress indicator on tracking screen shows current status at a glance
- Price breakdown in cart eliminates the need to mentally calculate totals
- Food categories use emoji icons for instant recognition

## 4. Nielsen's 10 Usability Heuristics

### 4.1 H1: Visibility of System Status

- Order tracking shows a 4-step progress indicator (Order Placed → Preparing → Out for Delivery → Delivered) with timestamps and ETA
- Splash screen has loading animation
- Banner carousel shows progress dots
- Cart badge updates in real time

### 4.2 H2: Match Between System and Real World

- Food emoji for categories (pizza, biryani, burger, etc.)
- Star ratings for restaurants
- Map visualization for delivery tracking
- Natural language prompts (“What’s on your mind?”)
- Standard Veg (green dot) / Non-Veg (red triangle) symbols

### 4.3 H3: User Control and Freedom

- Back button on every screen
- Skip button on onboarding
- Cancel order from tracking screen
- Edit cart items and change address
- Close button on all popups

### 4.4 H4: Consistency and Standards

- Bottom tab navigation (standard mobile pattern)
- Search bar at top of relevant screens
- Card-based layouts throughout
- Industry-standard Font Awesome icons

### 4.5 H5: Error Prevention

- Input validation prevents invalid phone numbers before submission
- Auto-advancing OTP boxes reduce entry errors
- Full bill summary shown before checkout



- Coupon field provides instant validity feedback

#### **4.6 H6: Recognition Rather Than Recall**

- Visual food categories with emoji icons
- Recent searches displayed on search screen
- Restaurant cards show key info (rating, time, distance) at a glance
- Order history shows past orders for easy reordering
- Saved addresses labeled (Home, Work)

#### **4.7 H7: Flexibility and Efficiency of Use**

- Multiple paths to find food: browse categories, search, explore recommendations, or reorder
- Filters and sort for advanced users
- Quick reorder bypasses the entire browse-to-cart flow

#### **4.8 H8: Aesthetic and Minimalist Design**

- Clean white backgrounds with generous whitespace
- Each screen focuses on its primary task
- Information hierarchy: large headings, supporting details, then actions
- Consistent 8px grid spacing

#### **4.9 H9: Help Users Recognize, Diagnose, and Recover from Errors**

- Phone validation error states “Please enter a valid 10-digit phone number”
- Specific error messages for all failure states
- Clear retry options for failed operations

#### **4.10 H10: Help and Documentation**

- Dedicated Help & Support screen with searchable FAQ accordion
- Live chat, call, and email support options
- Issue reporting form with order dropdown
- Onboarding slides introduce key features to new users

## 5. Tesler’s Law (Conservation of Complexity)

Tesler’s Law states that every application has inherent complexity that cannot be removed — it can only be moved. Good design moves complexity from the user to the system.

- **Smart Defaults:** Default delivery address auto-selected (Home). Regular size pre-selected in customization popup. Default payment method remembered.
- **Step-by-step Checkout:** The cart screen breaks checkout into distinct sections (items → coupon → address → bill → place order) instead of showing everything at once.
- **Auto-computation:** Bill summary auto-calculates item total, delivery fee, taxes, discounts, and grand total. Users never need to do math.
- **Customization in Modal:** Item customization (size, toppings, instructions) is contained in a popup instead of cluttering the menu list.
- **Filter/Sort Defaults:** Filtering and sorting are available but optional — the default view works well for casual users.

## 6. Serial Position Effect

People remember the first (primacy) and last (recency) items in a series best.

### 6.1 Primacy Effect

- “Home” placed first (leftmost) in bottom navigation — the most-used screen
- Promotional banners and offers appear first on the Home screen
- “Recommended” category appears first in the restaurant menu

### 6.2 Recency Effect

- “Profile” placed last (rightmost) in bottom navigation
- “Place Order” button fixed at the bottom of the Cart screen — the last visible element is the key action
- Floating cart bar stays at the bottom of the Restaurant page

### 6.3 Bottom Navigation Layout

Home | Search | **Cart** | Orders | **Profile**

Home (primacy) and Profile (recency) bookend the navigation. Cart holds the center position with a badge for visual anchoring.

## 7. Learnability (Law of Learning)

The time to complete a task decreases with practice. QuickBite is designed to be instantly learnable.

- **Familiar Patterns:** Tab navigation, card-based content, search with filters, cart with quantity controls, map-based tracking — all patterns users already know.
- **Onboarding:** Three slides introduce core features: Browse → Order → Enjoy. Skip button available for returning users.
- **Consistent Interactions:** Once a user learns one pattern (e.g., tapping a card), it applies everywhere. All back buttons, toggles, and action buttons behave identically across screens.

## 8. Mental Models

Mental models are internal representations of how users expect systems to work.

- **Restaurant Menu Model:** The restaurant page is organized by categories (Starters, Main Course, Desserts, Beverages) with item name, description, and price — mimicking a real menu.
- **E-Commerce Cart Model:** Standard flow: add items → view cart → review → apply coupon → see total → place order. Matches the universal online shopping mental model.
- **Delivery Tracking Model:** Map-based tracking with a moving rider icon, ETA, delivery partner details, and contact options — mirrors Uber/Google Maps experience.

## 9. Closure

Closure refers to the user's need to experience a clear sense of completion after an action.

- **Order Confirmation Screen:** After placing an order, users see a large green checkmark, “Order Placed!” heading, confetti animation, order details (ID, restaurant, ETA, total), and “Track Your Order” / “Back to Home” buttons.
- **Tracking Steps:** Each step transitions from gray (upcoming) to green checkmark (completed). The progress line fills as steps complete.
- **Micro-closure:** Coupon applied → green success message. Item added → badge animation. OTP sent → timer revealed. Login complete → transitions to Home.

## 10. Inverted Pyramid

The most important information appears first, with details in decreasing order of importance.

### 10.1 Home Screen Hierarchy

1. Location and search bar (critical context and most-used action)
2. Promotional banners (time-sensitive, high impact)
3. Food categories (primary browsing method)
4. Restaurant cards (exploration content)
5. Popular picks (supporting discovery)

### 10.2 Restaurant Card Hierarchy

1. Restaurant name (identification)
2. Rating + delivery time (decision factors)
3. Cuisine type (categorization)
4. Location + price (supporting detail)

Users can make a go/no-go decision without reading past the second line.

## 11. Flexibility and Robustness

### 11.1 Multiple Paths to the Same Goal

- Browse: Home → Categories → Restaurant → Menu
- Search: Direct text search for dishes or restaurants
- Discover: Trending searches, popular near you, recommendations
- Reorder: One-tap reorder from order history

### 11.2 Robustness

- Multiple login methods (Phone OTP, Google, Apple)
- Saved addresses and payment methods reduce friction
- Veg/Non-Veg filter for dietary preferences
- Multiple sort and filter options
- Contact options for both restaurant and delivery partner

## 12. Screen-by-Screen Design with Screenshots

Each screen is shown with its screenshot and the key HCI concepts applied.

### 12.1 Screen 1: Splash Screen



#### HCI Concepts:

- Visibility of System Status (Nielsen H1): Loading animation provides feedback
- Aesthetic and Minimalist Design (Nielsen H8): Clean gradient with logo
- Auto-transitions to onboarding after 2.5 seconds

Figure 1: Splash Screen

## 12.2 Screen 2: Onboarding (3 Slides)

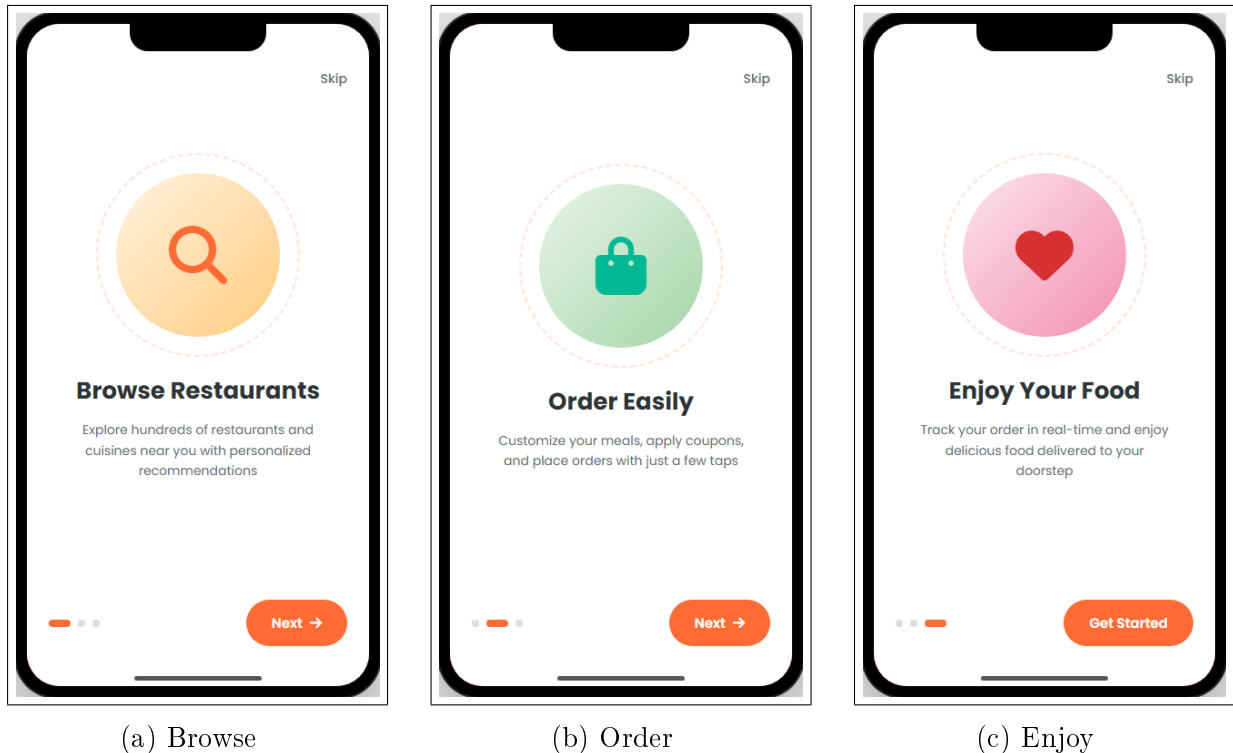


Figure 2: Onboarding Screens

- Learnability: Introduces app in 3 simple steps
- User Control (Nielsen H3): Skip button for returning users
- System Status (Nielsen H1): Progress dots show current position
- Closure: “Get Started” on final slide
- Serial Position: Most memorable content at start and end

## 12.3 Screen 3: Login / Sign Up

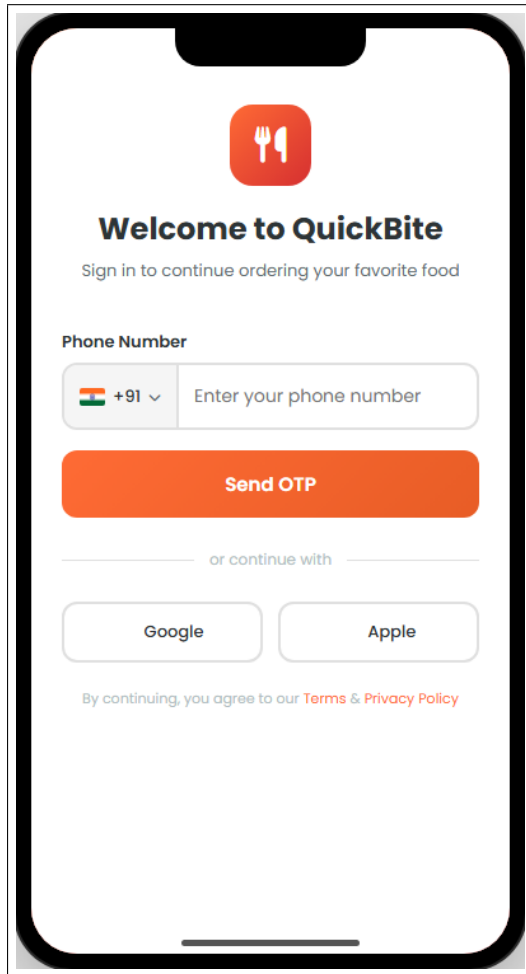


Figure 3: Login Screen

### HCI Concepts:

- Error Prevention (Nielsen H5): Real-time phone validation
- Error Recovery (Nielsen H9): Specific error messages
- Flexibility (Nielsen H7): Phone OTP, Google, and Apple sign-in
- Feedback (Shneiderman R3): OTP auto-advance, focus states
- Consistency (Shneiderman R1): Same button/form patterns

## 12.4 Screen 4: Home Dashboard

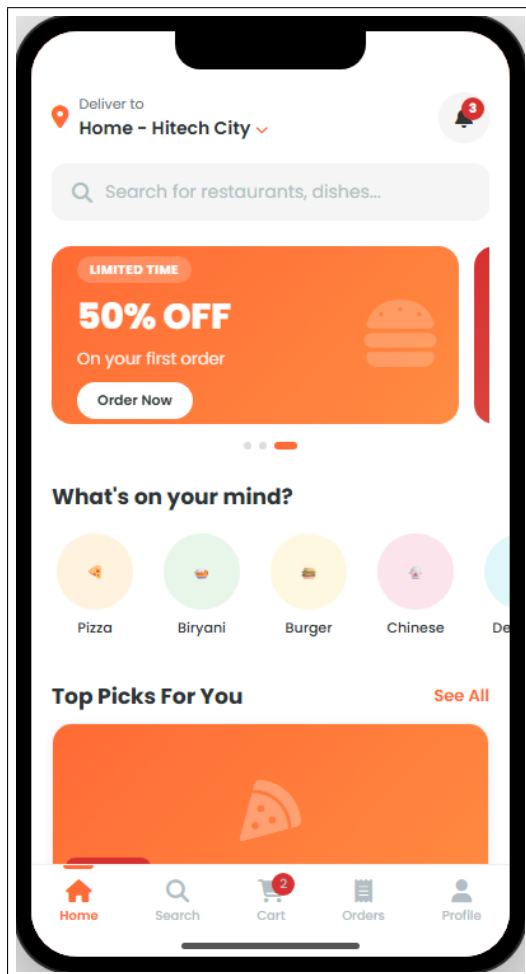


Figure 4: Home Screen

### HCI Concepts:

- Inverted Pyramid: Location + search at top, then banners, categories, restaurants
- 80-20 Rule: Browse and search dominate the screen
- Recognition over Recall (Nielsen H6): Emoji categories, visual cards
- Real-world Match (Nielsen H2): Natural language, food imagery
- Memory Load (Shneiderman R8): Cart badge, notification badge
- Serial Position: Home is first in bottom nav



## 12.5 Screen 5: Search Screen

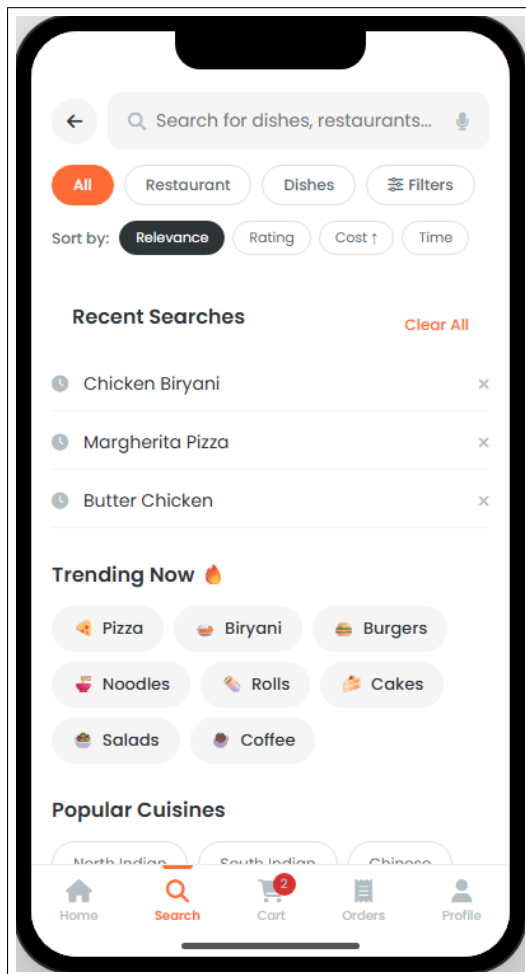


Figure 5: Search Screen

### HCI Concepts:

- Recognition over Recall (Nielsen H6): Recent searches, trending items
- Flexibility (Nielsen H7): Filter pills, sort options, cuisine filters
- User Control (Shneiderman R7): Multiple filter/sort combinations
- Reversal (Shneiderman R6): Clear recent searches
- Consistency: Same pill/chip styling across app

## 12.6 Screen 6: Restaurant Listing and Menu

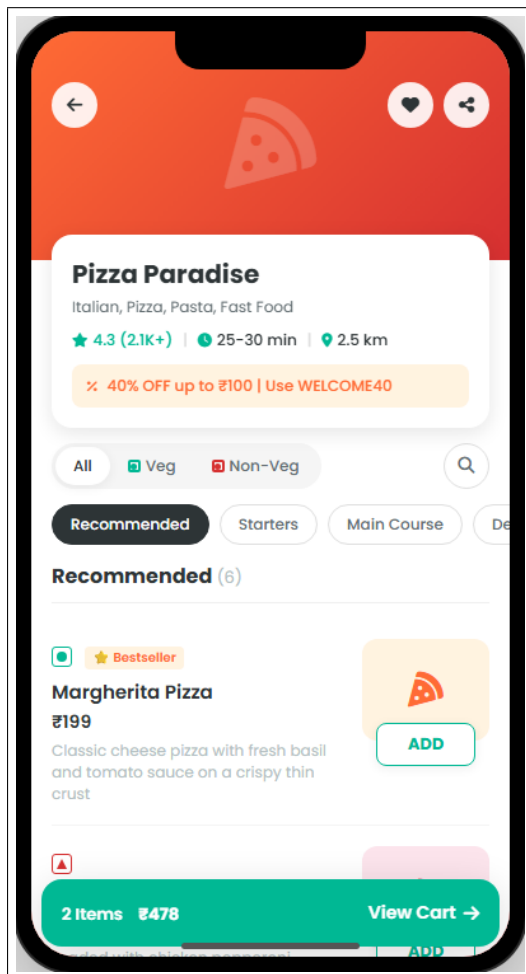


Figure 6: Restaurant Screen

### HCI Concepts:

- Mental Model: Menu organized like a real restaurant
- Real-world Match (Nielsen H2): Veg/Non-Veg standard symbols
- Memory Load (Shneiderman R8): Floating cart bar shows count + total
- Tesler's Law: Customization in popup, not in-line
- User Control: Veg/Non-Veg toggle, category pills, Add buttons
- Inverted Pyramid: Restaurant info first, then menu

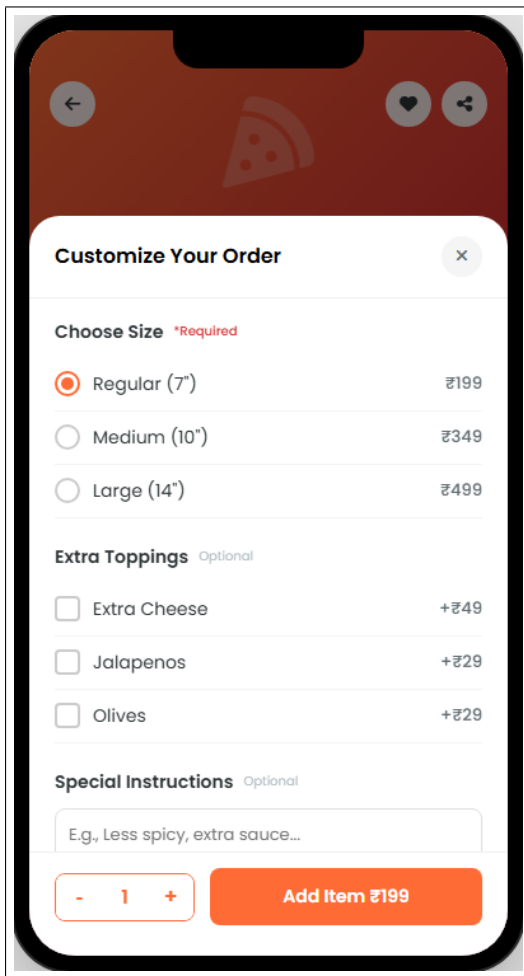


Figure 7: Item Customization Popup

**HCI Concepts:**

- Tesler's Law: Complex customization contained in bottom sheet
- Smart Defaults: Regular size pre-selected
- User Control: Size (radio), toppings (checkboxes), special instructions
- Freedom (Nielsen H3): Close button, quantity controls
- Closure: "Add Item" button confirms the action

## 12.7 Screen 7: Cart and Checkout

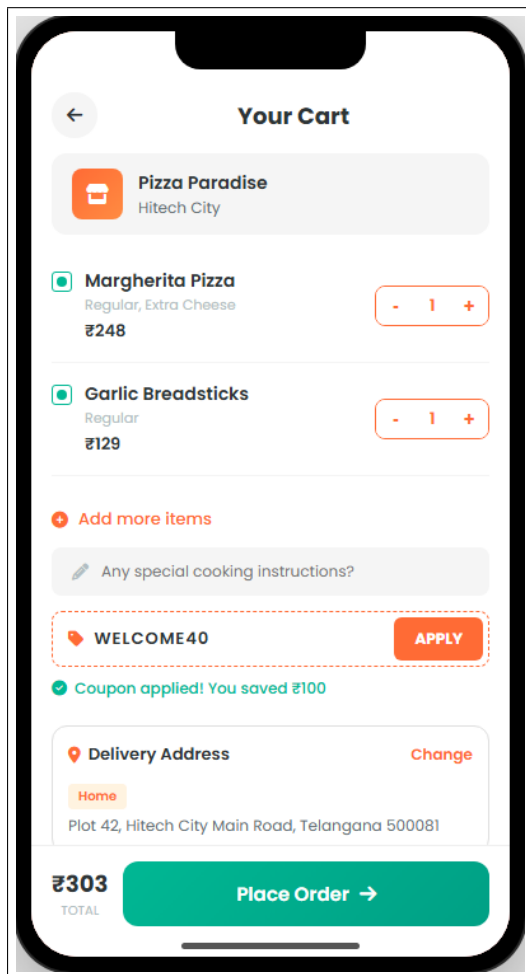
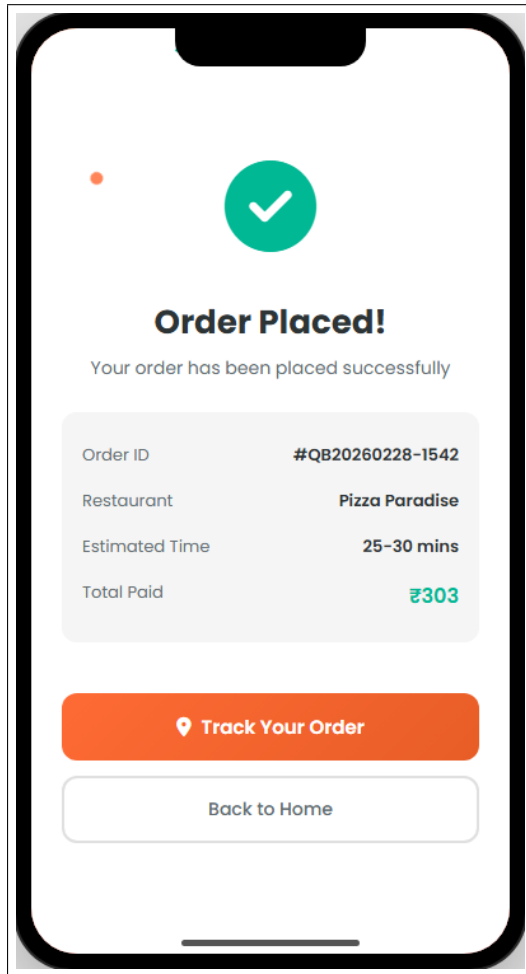


Figure 8: Cart Screen

### HCI Concepts:

- Tesler's Law: Bill auto-calculated by the system
- Reversal (Shneiderman R6): Quantity +/- controls, change address
- Feedback (Shneiderman R3): Coupon success message
- Error Prevention (Nielsen H5): Full breakdown before checkout
- Closure (Shneiderman R4): Prominent "Place Order" button
- Inverted Pyramid: Items, then billing, then action

## 12.8 Screen 8: Order Confirmation



### HCI Concepts:

- Closure: Green checkmark, confetti animation, “Order Placed!”
- Feedback (Shneiderman R3): Order ID, restaurant, ETA, total
- Dialog Yield Closure (Shneiderman R4): Clear end of ordering sequence
- Next steps: “Track Your Order” and “Back to Home” buttons

Figure 9: Order Confirmation

## 12.9 Screen 9: Order Tracking

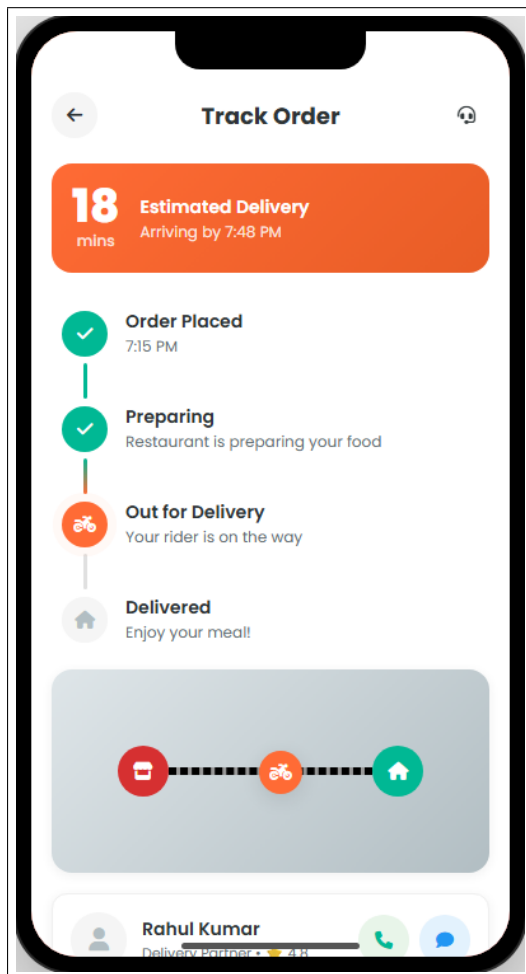


Figure 10: Order Tracking

### HCI Concepts:

- System Status (Nielsen H1): 4-step progress with ETA countdown
- Mental Model: Map tracking mirrors Uber/Google Maps
- Real-world Match (Nielsen H2): Rider icon, restaurant and home markers
- User Control (Shneiderman R7): Contact delivery partner, cancel order
- Closure: Steps complete with green checkmarks

## 12.10 Screen 10: Order History

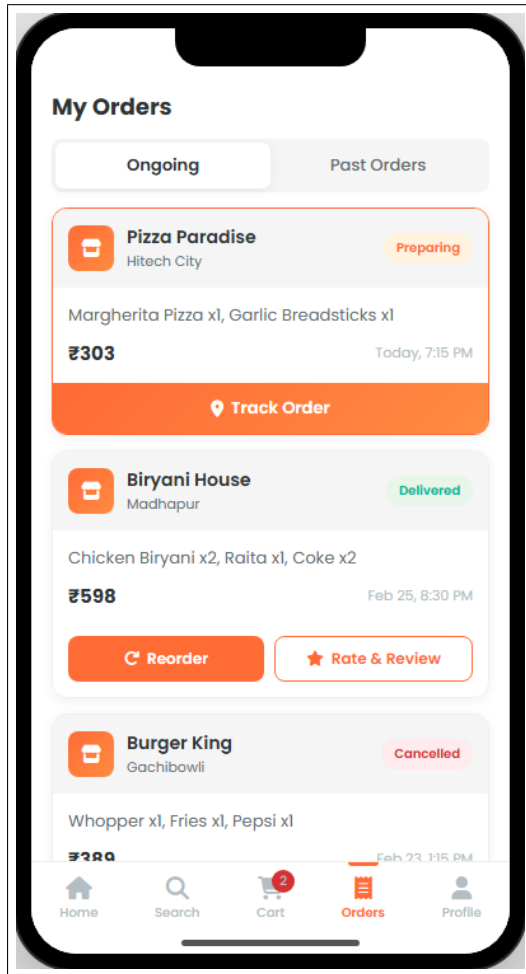


Figure 11: Order History

### HCI Concepts:

- Shortcuts (Shneiderman R2): “Reorder” button for repeat ordering
- Recognition (Nielsen H6): Order cards show restaurant, items, status, date
- Closure: Status badges (Delivered, Cancelled, Preparing)
- Consistency: Same card pattern as rest of app
- Flexibility: Tabs for Ongoing/Past orders; rate and review option

## 12.11 Screen 11: Profile / Account

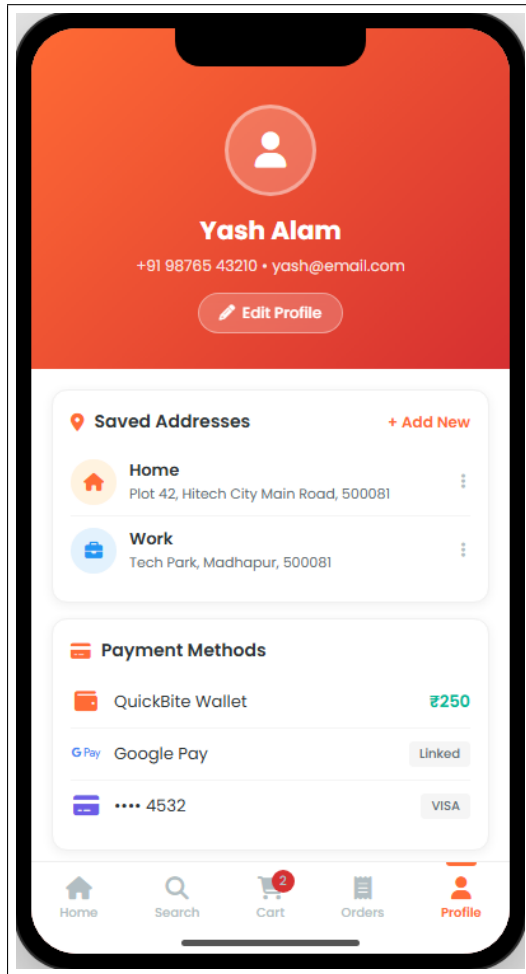


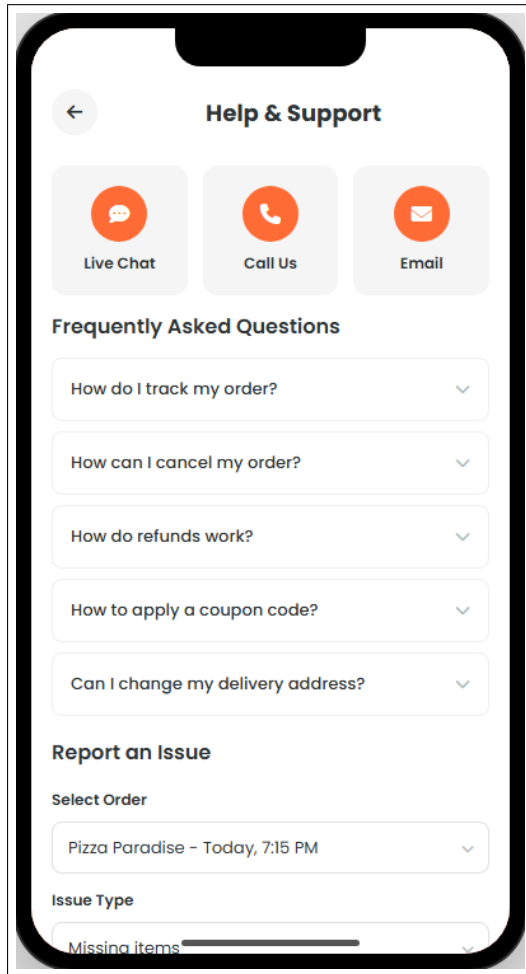
Figure 12: Profile Screen

### HCI Concepts:

- 80-20 Rule: Secondary features in a clear menu hierarchy
- Shortcuts: Saved addresses, linked payments, wallet balance
- User Control: Notification toggle, edit profile, manage payments
- Consistency: Card-based sections, same icon styling
- Serial Position (Recency): Profile at last position in bottom nav



## 12.12 Screen 12: Help and Support

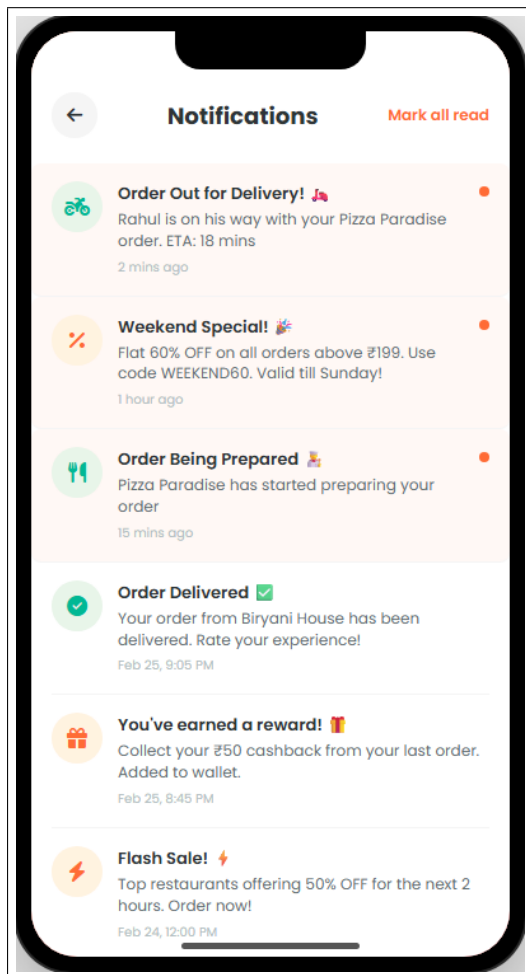


### HCI Concepts:

- Help and Documentation (Nielsen H10): FAQ accordion, live chat, call, email
- Error Recovery: Issue reporting form with order dropdown
- Flexibility: Three contact methods for different preferences
- Recognition: Visual icons for quick actions
- 80-20: Help is accessible but secondary

Figure 13: Help and Support

## 12.13 Screen 13: Notifications



### HCI Concepts:

- System Status (Nielsen H1): Order updates with timestamps
- Recognition: Visual distinction between read and unread
- Categorization: Distinct icons for order vs promotional notifications
- User Control: “Mark all read” button
- Consistency: Same list pattern and styling as rest of app

Figure 14: Notifications

## 13. User Flow

### 13.1 Primary Flow

Splash → Onboarding → Login → **Home** → **Restaurant** → **Cart** → **Confirmation**  
→ **Tracking**

### 13.2 Alternative Flows

- **Search Flow:** Home → Search → Restaurant → Cart → Confirmation
- **Reorder Flow:** Orders → Reorder → Cart → Confirmation
- **Category Flow:** Home → Category → Restaurant → Cart → Confirmation

## 14. Conclusion

The QuickBite food delivery app demonstrates a comprehensive application of HCI principles:

- **80-20 Rule:** Core ordering flow receives primary design attention
- **Shneiderman's 8 Rules:** Consistency, feedback, closure, error handling, reversal, memory load reduction
- **Nielsen's 10 Heuristics:** System visibility, real-world match, user control, aesthetics, help
- **Tesler's Law:** Computation and decisions offloaded to the system
- **Serial Position:** Critical actions at start/end of navigation
- **Mental Models:** Design matches restaurant, e-commerce, and delivery tracking expectations
- **Closure:** Confirmation screens and success messages at every critical point
- **Inverted Pyramid:** Most important content first on every screen
- **Learnability:** Familiar patterns, consistent interactions, onboarding
- **Flexibility and Robustness:** Multiple paths, auth methods, filters, contact options

The interactive prototype (HTML/CSS/JS) provides a hands-on demonstration of all 12 screens with working navigation, animations, and interactive elements.