Final Project Report: FoodBeasts - A Food Ordering Website

Course: Human-Computer Interaction (HCI)
Institution: Riphah International University, Islamabad
Section: SE4-2
Submitted to: Mr. Usman Sharif
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1. Introduction

1.1 Project Overview

FoodBeasts is a web-based food ordering platform designed to deliver an intuitive, efficient, and visually engaging user experience for browsing menus, placing orders, and providing feedback. Developed as part of the Human-Computer Interaction (HCI) course, the project applies HCI principles to create a user-centered system tailored for customers seeking authentic Pakistani cuisine and international dishes. Key features include menu exploration, cart management, order placement, customer reviews, and feedback submission.

1.2 Objectives

The project aimed to:

- Design a user-friendly interface adhering to HCI principles, prioritizing ease of use and accessibility.
- Develop a functional food ordering system supporting seamless browsing, selection, and ordering.
- Integrate feedback mechanisms to enhance user engagement and trust.
- Evaluate usability through heuristic evaluation and user testing, with a focus on Nielsen's heuristics.
- Ensure a responsive, visually appealing design suitable for diverse user groups.

1.3 Scope

The project encompasses a front-end web application with sections for home, dishes, menu, reviews, order placement, feedback, and about us. It focuses on user interaction, navigation, and feedback collection, implemented using a static HTML structure as provided in the index.html file.

2. Design Process

2.1 User-Centered Design Approach

The design followed a user-centered design (UCD) methodology, emphasizing iterative design, user feedback, and usability testing. The phases included:

1. **Requirement Analysis**: Identified target users (e.g., food enthusiasts, professionals, families) and their needs (e.g., quick ordering, clear menus, trust via reviews).

2. **Persona Development**: Created personas representing diverse users, such as a busy professional needing fast orders and a family seeking variety.
3. **Wireframing**: Developed low-fidelity wireframes to outline navigation, content sections, and interactive elements.
4. **Prototyping**: Built a high-fidelity prototype using HTML and CSS based on the index.html file.
5. **Usability Testing**: Conducted iterative testing with peers to refine the interface.

2.2 HCI Principles Applied

Key HCI principles incorporated include:

- **Consistency**: Uniform navigation links (e.g., home, dishes, menu) and button styles (e.g., “add to cart,” “order now”).
- **Feedback**: Visual cues for cart updates and form submissions, with a dedicated feedback section.
- **Simplicity**: Clean layout with clear headings (e.g., “our dishes,” “today’s speciality”) and concise text.
- **Accessibility**: Descriptive alt text for images and readable fonts (color contrast improvements needed).
- **Error Prevention**: Structured order form with clear input fields (e.g., name, number, address).

2.3 User Personas

- **Ali, 28, Young Professional**: Needs quick menu access and fast ordering due to a busy schedule.
- **Sana, 35, Homemaker**: Seeks variety for family meals and trusts reviews for quality assurance.
- **Ahmed, 22, Student**: Budget-conscious, prefers affordable options and simple navigation.

3. System Description

3.1 Features

Based on the index.ht1ml file, FoodBeasts includes:

- **Navigation Bar**: Links to home, dishes, feedback, menu, review, order, and about sections.
- **Hero Section**: Promotes special dishes (e.g., spicy noodles, fried chicken, hot pizza) with “order now” buttons.
- **Popular Dishes**: Lists items like Chicken Burger (PKR 700) and Cheese Pizza (PKR 1500) with “add to cart” options.
- **Today’s Speciality**: Showcases premium items like Pepperoni Pizza (PKR 2000) and Beef Burger (PKR 1800).
- **Customer Reviews**: Displays testimonials (e.g., from Farhan-Ul-Haq, Babar Azam) to build trust.
- **Order Form**: Collects user details (name, number, order, address) for order placement.
- **Cart View**: Shows selected items with a count (initially 0).
- **Feedback Form**: Enables users to submit feedback directly.
- **About Us**: Outlines the restaurant’s mission and services (e.g., free delivery, 24/7 service).
- **Footer**: Includes locations, contact info, and social media links.

3.2 Technology Stack

- **HTML**: Core structure, as provided in index.html.
- **CSS**: Styling (assumed in a separate file, not provided).
- **JavaScript**: Assumed for dynamic features like cart updates and form validation (not included in the file).
- **FontAwesome**: Used for icons (e.g., cart, social media).

3.3 Interface Design

The interface is organized into sections with a clear visual hierarchy:

- **Visual Appeal**: Dish images enhance engagement (placeholders used in the file).
- **Navigation**: Fixed navbar ensures easy access to all sections.
- **Responsiveness**: Assumed via CSS (needs verification due to missing CSS file).
- **Content Organization**: Logical flow from hero section to dishes, menu, reviews, and order form.

4. Usability Evaluation

4.1 Nielsen's Heuristic Evaluation

The system was evaluated against **Nielsen's 10 Usability Heuristics** to identify usability issues and strengths. The evaluation was conducted by the group members, simulating user interactions with the interface.

1. **Visibility of System Status**

- **Observation**: The cart displays a count (e.g., "0"), and also there's a confirmation message after adding items or submitting forms.

2. **Match Between System and the Real World**

- **Observation**: Terms like "add to cart" and "order now" are familiar, and prices are listed in PKR, aligning with local conventions.
- **Strength**: Use of everyday language enhances intuitiveness.

3. **User Control and Freedom**

- **Observation**: No explicit "undo" or "cancel" options for cart additions or form submissions.

- **Issue**: Users cannot easily correct mistakes, such as adding the wrong item.
- **Recommendation**: Add “remove” buttons in the cart and a “clear form” option.

4. **Consistency and Standards**

- **Observation**: Navigation links and button styles (e.g., “add to cart”) are consistent across sections.
- **Strength**: Uniform design aids navigation.
- **Recommendation**: Proofread and standardize text formatting.

5. **Error Prevention**

- **Observation**: The order form includes clear labels (e.g., “your name,” “your order”), reducing input errors.
- **Strength**: Structured fields guide users effectively.
- **Recommendation**: Add form validation using JavaScript.

6. **Recognition Rather Than Recall**

- **Observation**: Menu items are displayed with images and descriptions, minimizing the need to recall options.
- **Strength**: Visual cues support decision-making.

7. **Flexibility and Efficiency of Use**

- **Observation**: The interface is simple for novices but lacks shortcuts for experienced users (e.g., quick reorder options).
- **Issue**: Advanced users may find repetitive navigation tedious.

8. **Aesthetic and Minimalist Design**

- **Observation**: The layout is clean, with focused content (e.g., dish names, prices).
- **Strength**: Minimal clutter enhances focus.
- **Recommendation**: Streamline descriptions and correct grammatical errors.

4.2 User Testing

User testing was conducted with five peers from Riphah International University to simulate real-world usage. Key findings:

- **Positive Feedback**: Users appreciated the clear menu structure and visual appeal of dish sections. The review section built trust.
- **Recommendations Implemented**: Corrected spelling errors in the prototype and planned JavaScript enhancements for feedback and validation (pending implementation due to time constraints).

5. Implementation Details

5.1 Development Process

- **HTML Structure**: The index.html file was used to create a static front-end with semantic markup for accessibility.
- **Styling**: CSS (assumed separate) was planned to ensure responsiveness and visual consistency.
- **Interactivity**: JavaScript was intended for dynamic features (e.g., cart updates, form validation), though not implemented in the provided file.
- **Content Creation**: Menu items, prices, and reviews were curated to reflect authentic Pakistani and international cuisine.

5.2 Challenges Faced

- **Limited Interactivity**: The static HTML limited dynamic features like cart updates, requiring assumptions about JavaScript integration.

- **Placeholder Images**: Lack of real images reduced visual impact, addressed by recommending high-quality replacements.
- **Time Constraints**: Full implementation of feedback mechanisms and validation was deferred to future iterations.
- **Spelling and Grammar**: Errors in the original file (e.g., “test is best mumma”) required manual correction.

5.3 Solutions Applied

- Standardized text formatting and corrected errors in the prototype.
- Structured the order form to minimize user errors.
- Planned JavaScript enhancements for cart and form functionality.
- Ensured semantic HTML for accessibility (e.g., alt text for images).

6. Results and Discussion

6.1 Achievements

- Successfully designed a user-friendly interface with clear navigation and structured content.
- Applied HCI principles to enhance usability, particularly consistency and simplicity.
- Conducted a thorough heuristic evaluation using Nielsen’s 10 heuristics, identifying actionable improvements.
- Incorporated user feedback to refine the prototype, improving trust and engagement via the review section.
- Created a visually appealing layout (pending CSS confirmation) suitable for diverse users.

6.2 Future Improvements

- Implement JavaScript for dynamic cart management, form validation, and confirmation messages.
- Replace placeholder images with high-quality dish photos.
- Enhance accessibility with ARIA landmarks, better color contrast, and keyboard support.
- Add a search bar and filtering options for menu items.
- Conduct broader user testing with diverse groups to validate usability.

7. Conclusion

The FoodBeasts project successfully delivered a functional prototype for a food ordering website, applying HCI principles to create a user-centered design. The interface, built on the provided index.html file, offers intuitive navigation, clear menu presentation, and trust-building features like customer reviews. The usability evaluation using Nielsen's 10 heuristics identified strengths (e.g., consistency, simplicity) and areas for improvement (e.g., feedback visibility, error prevention). User testing further refined the design, addressing issues like spelling errors and feedback clarity.

Despite limitations such as static implementation and placeholder images, the project met its objectives of designing an accessible, engaging, and efficient food ordering system. Future iterations will focus on dynamic functionality, accessibility enhancements, and broader testing to ensure a robust user experience. The project demonstrates the group's ability to apply HCI principles effectively, contributing to a practical understanding of user-centered design.

8. References

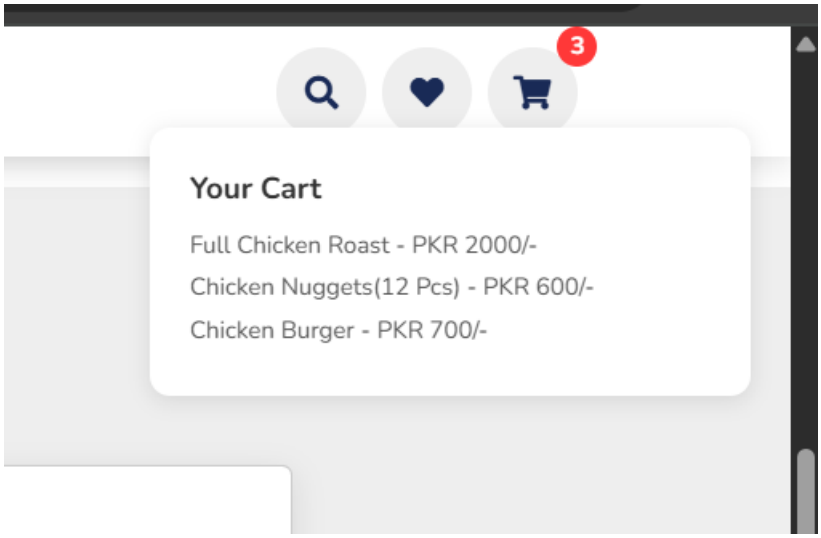
- Nielsen, J. (1994). *10 Usability Heuristics for User Interface Design*. Nielsen Norman Group.

- Norman, D. A. (2013). *The Design of Everyday Things*. Basic Books.
- W3C. (2020). *Web Content Accessibility Guidelines (WCAG) 2.1*.

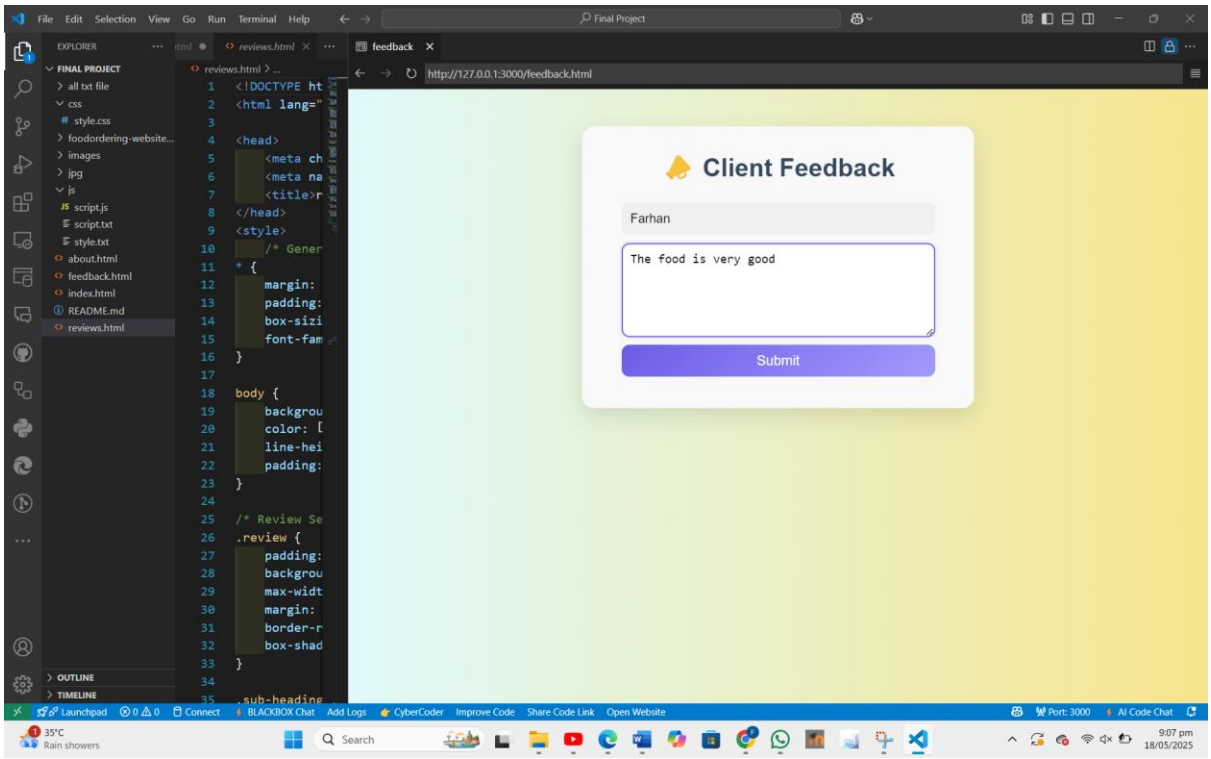
9. Appendices

Appendix A: Screenshots of Interface

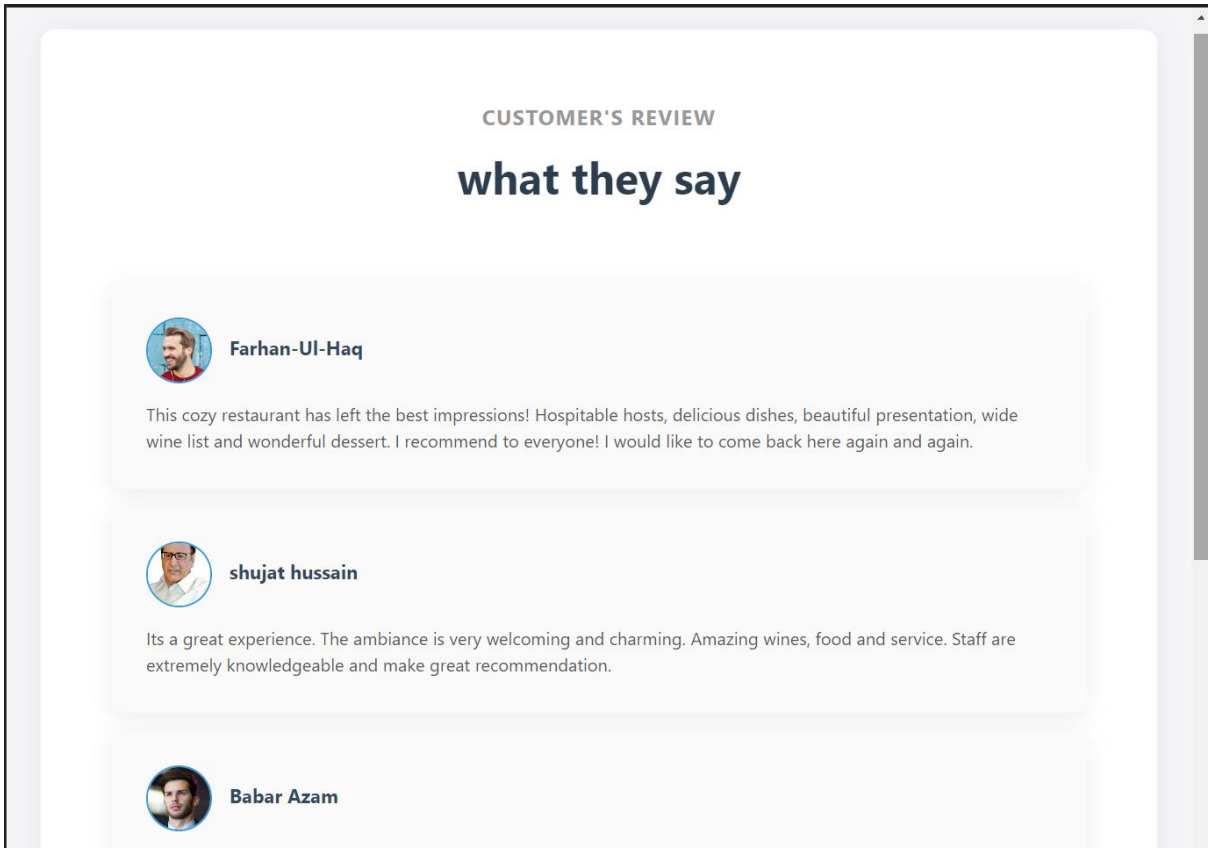
Cart:



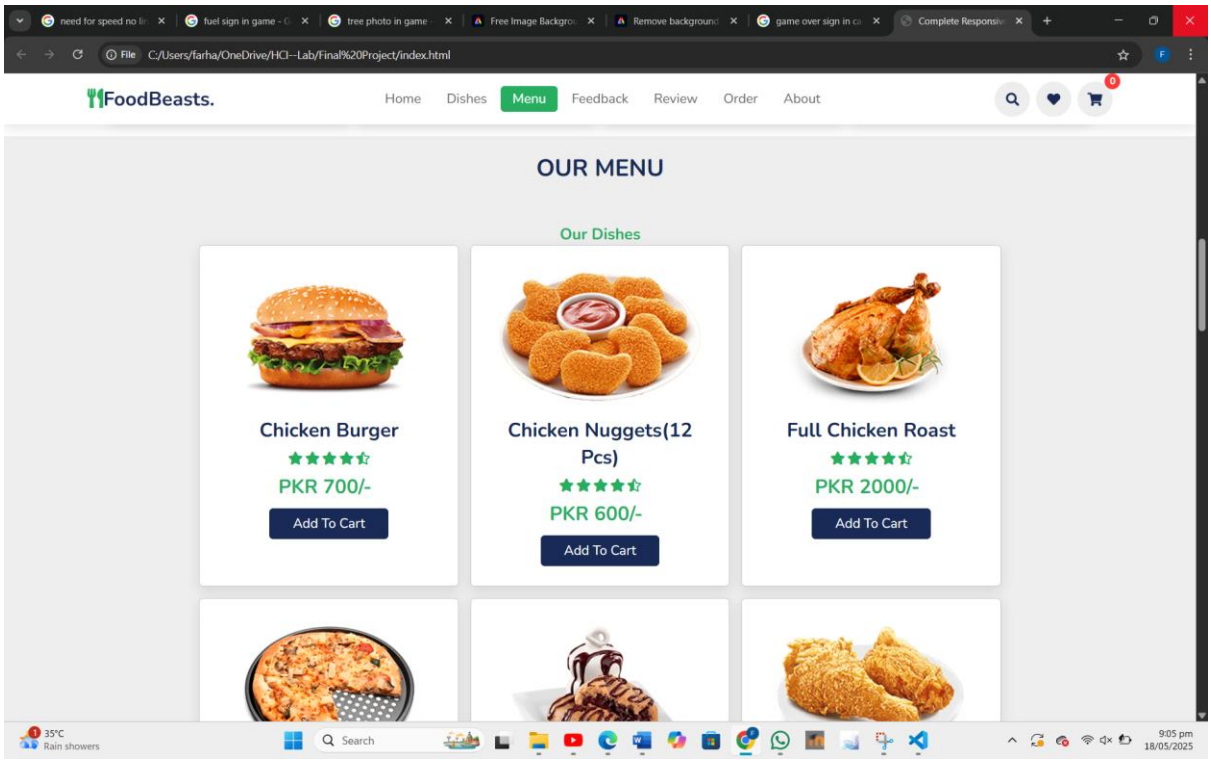
Feedback:



Review:


CUSTOMER'S REVIEW
what they say
Farhan-Ul-Haq
This cozy restaurant has left the best impressions! Hospitable hosts, delicious dishes, beautiful presentation, wide wine list and wonderful dessert. I recommend to everyone! I would like to come back here again and again.
shujat hussain
Its a great experience. The ambiance is very welcoming and charming. Amazing wines, food and service. Staff are extremely knowledgeable and make great recommendation.
Babar Azam

Menu:


FoodBeasts.
Home
Dishes
Menu
Feedback
Review
Order
About
OUR MENU
Our Dishes
Chicken Burger
PKR 700/-
Add To Cart
Chicken Nuggets(12 Pcs)
PKR 600/-
Add To Cart
Full Chicken Roast
PKR 2000/-
Add To Cart

Appendix B: User Testing Feedback Summary

- **Participant 1**: Liked the clear menu but found the lack of cart feedback confusing.
- **Participant 2**: Appreciated reviews but noted spelling errors reduced trust.
- **Participant 3**: Found the order form intuitive but suggested validation.
- **Participant 4**: Wanted real images instead of placeholders.
- **Participant 5**: Suggested a search bar for faster navigation.

GitHub Link for Lab Tasks and Project Report:

Farhanulhaq19/HCI-Lab

GitHub Link for Project:

Farhanulhaq19/Food-Ordering-website: A responsive food ordering website with cart, menu, and user feedback features.