

# Towards Development of a User Verified UI Based on Cognitive Approach: An Empirical Case Study on a Food Delivery Software

Md.Tajwar Ali<sup>1</sup>[19202103183], Tasmia Binte Munir Maisha<sup>2</sup>[19202103195], Parvas Hossain Piash<sup>3</sup>[19202103200], Latiful Islam Shoisob<sup>4</sup>[19202103162], and Sadman Sakib<sup>5</sup>[19202103167]

Bangladesh University of Business and Technology, Dhaka-1216, Bangladesh  
{tajwaralirumman,tbmmaisha,piashkhan311,latifulislam1200,ssadman190}@gmail.com

**Abstract.** Food delivery applications have been among the fastest growing sectors in Bangladesh in recent years. Foodpanda, Hungry Naki, Pathao Food, Sohoz Food, and other food delivery services may have existed in recent years, but people's expectations of these applications have grown over time. With this in mind, our proposed system is a website named "Foodieverse," which is a meal delivery platform that allows you to easily get excellent food from your favorite Bangladeshi local restaurants. This proposed method might be a significant asset to any restaurant business by providing a clear sales channel. We used the cognitive walkthrough method to uncover various interface flaws that needed to be corrected, which helped us analyze the usability of our web application. We needed to conduct a user survey for the cognitive walk-through technique, therefore we created a set of 12 relevant questions using a Google Form, to which participants could react immediately. Our questions had 3 categories of domains, which are: Action and Control, Interactive and Engagement, and Outcome and Goal. We've placed a link to our website at the top so that participants may get a sense of our system before digging into the survey. Then we chose eligible survey participants who are generally our friends, relatives, or other known persons, with the requirement that they be involved in computer science or technology. They should also have individual mental models based on their backgrounds, and we could select 22 of them and then deliver the form link to them online. After that, the responses are automatically collected one by one in an Excel spreadsheet after they successfully submit our form. Following that, we conducted our context mapping and turned our participants' answers into individual numerical forms. Then we made two different tables for our weighted average and a specific equation in Microsoft Excel to calculate the direct average. Lastly, we mapped our positive and negative feedback based on design principles and parameters. Although we are newcomers, we wish to work more to improve our proposed system by developing a sustainable business strategy.

**Keywords:** Foodieverse.

## 1 Introduction

People today aspire to live more time efficiently and avoid eating out so, services for food delivery were first developed to address this issue. However, as time goes on, people's expectations of these applications grow and with this in mind, we established a food delivery platform "Foodieverse" that makes it easy to order delicious food from your favorite Bangladeshi local eateries. Initially, we designed the user interface of our web application with several local restaurants in mind so that users could order food from them. Our initial goal is to only provide cuisine from neighborhood Bangladeshi restaurants, but we hope to expand eventually. While switching over to online ordering, customers are no longer required to call restaurants, invading their privacy and disrupting any important job. Our system might be perceived as a growing rival to existing Bangladeshi applications for food delivery, but if you look on the bright side, as more food applications are released, there will be more alternatives available for people rather than just one. As a result, customers will finally find it convenient to order food online from anywhere, including our system.

The food delivery sector in Bangladesh can be compared to a toddler compared to the leading national or worldwide food-tech industries. While the market size for international food delivery services like Uber Eats, Door Dash, Postmates, Grub Hub, Zomato, etc. is in the billions, Bangladesh's population has not yet surpassed 100 million, and until 2019, Bangladeshi food delivery services delivered 25,000 orders every day. As of 2022, HungryNaki, Foodpanda, Pathao Food, Shohoz Food, and Cookups continue to have a major impact on Bangladesh's online food delivery sector. Using the above international food delivery applications, one can search for restaurants based on cuisine or location, instantly order food from the menu, and even track their order via the website or app available nationwide. Now, in 2022, some applications use machine learning to enable taste preferences by suggesting cuisines based on past records and existing relevant data. As a result, customers can acquire personalized food options from various restaurants with the click of a button, but unfortunately, this type of complex system does not exist in Bangladesh.

As we have selected a food delivery system as our project, we have tried to make the food ordering process much easier for the customer. For this reason, we have tried to follow the cognitive walkthrough method. The cognitive method makes it simple to identify several interface issues that need to be fixed, this helped us to assess the usability of the web application. By completing a sequence of exercises and asking a series of questions, one or more evaluators can determine how easy it is to learn our interface. Using this method, we could indicate the problems and flows in our interface, that we are trying to overcome. It also helped us to evaluate the user experience. The main purpose is to bring food to the doorsteps of the customers on time and without any hassles. In recent days, there may have been various food delivery platforms like Foodpanda, Hungry Naki, Pathao Food, Shohoz Food, etc. All of these services are good, but we have tried to make our food delivery service better. We have tried to make our website user-friendly as much as we have tried to make our UI look attractive so that people can easily choose their desired food and make fast orders. We are also working to deliver the desired foods within 30 minutes.

Nowadays, the desire for food among the young generation keeps growing in our country. They prefer fast food over homemade meals. To collaborate with the cravings for food among the people, we got the brilliant idea of building a food delivery website to full fill their desires and make the food-buying process, whether it is fast food or homemade meals, much easier for them. This project can become a great utilization for any restaurant business to provide clear sales channel as well.

While our system is still in development, the following contributions are explained:

- We applied a cognitive walkthrough to assess the efficiency of our interface, as well as a survey of more than 20-plus individual users with varied mental models, which differentiates our approach.
- Our user interface design is eye-catching and interactive, according to the majority of participants surveyed using the cognitive approach.
- Our website currently features a limited number of local eateries, however, each restaurant's menu is updated in real-time.
- The Cognitive Walkthrough has been captured in a spreadsheet, and we have calculated the weighted average of our survey questions based on user data.
- We have taken expert evaluations and compared expert and user evaluations.

In the paper organization part, things that will be discussed are:

1. Introduction
2. Literature Review
3. Methodology
4. Web Design
5. Implementation and Result Analysis

## 6. Conclusion Future Work

## 2 Literature Review

Author Muhammad Nazrul Islam et al. propose using the System Usability Scale to develop and evaluate the usability of a mobile application for mental health care during the COVID-19 pandemic. Hence, the goals of this study are to identify the key user needs for creating a digital solution and to create and develop a mobile-based tool for Bangladeshi citizens to access mental health support. In a requirement elicitation study, semi-structured interviews with 37 participants were undertaken to reach the goal. Then, "Muktomon," a smartphone app with features including virtual therapy, an AI-powered chatbot, interacting with doctors to obtain mental health treatments, and trustworthy news sources, was developed. Yet, the approach is useful and effective in improving mental health during the COVID-19 pandemic. However, more participants should be recruited and interviewed to uncover more unusual problems in people and to scale up this application [1].

A User Interface (UI) and User Experience (UX) evaluation approach for cyberlearning environments in computer science and software engineering education is suggested by authors Hakam W. Alomari et al. Despite their widespread availability and growing use, more research on their utility in undergraduate STEM teaching is needed. The purpose is to improve cyberlearning practice and highlight the importance of evaluating cyberlearning environments in terms of their specified activities and users through UI/UX evaluations. Cognitive evaluations using a presume methodology and a heuristic evaluation survey are the evaluation methodologies that are used here. Their trials showed that participants could use the SEP-CyLE (Software Engineering and Programming Cyberlearning Environment) successfully to complete the tasks they were given and to enhance their software development concepts, particularly software testing. With SEP-CyLE, users may quickly and efficiently learn fundamental software testing knowledge and use the UI/UX assessment methods they learned in class. However, they discovered that participants often lacked awareness of all accessible LOs, resulting in some inconsistent data and puzzling individuals, but that these issues may be resolved [2].

A smartphone application designed and developed for Bangladesh's illiterate population to seek jobs was presented by author Muhammad Nazrul Islam et al. To do this, a conceptual framework was first established based on the results of a literature review and a need-finding study, and the need-finding study was then replicated with 40 illiterate individuals. Then, an Android-based mobile application with an easy-to-use user interface was created. It includes voice, icons, pictography, and a small amount of text in a native language to make the interface intuitive for illiterate people. This means that a practical and beneficial application will encourage participants who lack the literacy to use and embrace IT applications, according to further evaluation and user satisfaction. For those who are physically disabled and illiterate, however, voice or pictography may not be usable [3].

A survey of usability and user experience study pertinent to open community web portals and information-sharing platforms is provided by authors Kazemi, Liebchen, and Cetinkaya. The objective was to generate a summary of reports in the literature on information-sharing web portals' usability. A method of systematic mapping has been used to locate and record primary studies and that gives information on how usability has been considered in recent publications since these portals demand user engagement through the sharing of developed content and user participation. Moreover, the SPEED (Smart Ports Entrepreneurial Ecosystem Development) project has used its findings to create a network community connecting high-tech start-ups with ports and port stockholders. Last but not least, even if the developers are knowledgeable usability specialists, only the users can evaluate a portal's overall user experience [4].

Semiotics Explorations on Designing Information-Intensive Web Interfaces are suggested by author Muhammad Islam et al. This study focuses on the beneficial insights

that semiotic analysis can provide in presenting fundamental concepts to build understandable signs. The primary goal of this study is to provide a semiotics foundation to web designers by presenting the whole semiotics explanations for a certain web domain as well as the semiotics golden principles that will assist them in building intelligible and useable web interface signs. Modeling the assumed knowledge to the interface elements, an interpretation factors framework, and SGR is the study's three key outputs of this study. Hence, the user benefits include improving communication, correctly interpreting sign meaning, completing tasks quickly, and making signs more readable for users with vision problems. However, this study could produce conflicting findings and limited sample size [5].

In order to identify cognitive problems in older persons, author Sonia Valladares-Rodriguez et al. proposed a user interaction pilot study that includes touchscreen games. For early diagnosis according to the pilot study, the Panoramix battery is useful for detecting cognitive deterioration in elderly people and is easily accessible. This study examines these factors with the help of 74 senior users and 15 test administrators. The results support the usability and playability of Panoramix, which received an average score of 4.45 on a 5-point scale and an average score of 4.39 on a 7-point scale. Thus, it was also confirmed that participants were willing to use these tools for cognitive evaluation. Although the impact of hardware components on playability or usability was not addressed in this work, a thorough investigation of hardware device concerns is required [6].

An analysis of app functionality and user reviews, titled "User Experience of Cognitive Behavioral Therapy Apps for Depression," is what Katarzyna et al. propose. The purpose of this study was to examine important variables that affect user engagement and support experience, as well as the functioning of mobile apps that claim to help with cognitive behavior therapy for depression. They then carried out two types of research: first, they investigated the healing capabilities of apps. Second, through a thematic analysis of publicly available user reviews of cognitive behavioral therapy treatment applications for depression, a more extensive examination of user experience will be conducted. They discovered 31 applications that claim to provide cognitive behavioral therapy for depression, and then, they analyzed 1287 user reviews of cognitive behavioral therapy apps for depression and compared these apps with 253 other mental health apps. When it comes to including components of cognitive behavioral therapy that are supported by research, depression applications need to improve [7].

A system based on brain-computer interface technology is what Muhammad Nazrul Islam et al. suggest using to assess how well users (players) interact with computer games. As a result, games make use of the goals of this platform's technological development. You can employ gestures, virtual reality, augmented reality, examples of recognition, and wearable gaming technology, among other things, to keep the game exciting for the players. The main goal of our ongoing work will be to automate the evaluation of user experience (UX) for system designers and developers, allowing for practical application in terms of measuring UX for the creation of successful computer or mobile games. Additionally, thorough evaluation research involving numerous players and numerous games will be carried out to determine how the UX changed [8].

Kazi Md Munim et al. proposed a study Towards Developing a Tool for UX Evaluation using Facial Expression. But, only a small number of the tools currently available are web-based, simple, and undertake real-time analysis and so, the objective is to develop and deploy a web-based tool for measuring user emotions as part of user experience evaluation. First, they reviewed the material that is already available, and second, they suggested a conceptual framework. Finally, they tested the tool with four users after implementing the system using the Afdex SDK in step three. The evaluation research demonstrated the effectiveness and efficiency of their tool. Therefore, additional volunteers should be sought out for future research to further hone an update of system performance [9].

Muhammad Nazrul Islam et al. proposed researching the usability of mobile health applications in Bangladesh. This project seeks to design and create useful mobile health information systems, as well as evaluate their usability and user experience (UX) in the Bangladeshi setting. First, they used a three-stage technique in their research and discovered that 61% of usability defects are catastrophic or significant in nature based on heuristic assessment, with aesthetic and minimalist design being the most frequently violated heuristic (21%). Their findings show how frequently these mHealth applications violate heuristics. Designers can use this information to improve the usability of their applications. This could make it difficult for Bangladeshi consumers to adopt and use mobile health applications [10].

### 3 Methodology

We examined the usability of our online application using the cognitive walkthrough method, which helped us find a number of interface issues that needed to be fixed. The cognitive method makes it simple to identify several interface issues that need to be fixed, this helped us to assess the usability of the web application. After conducting a user survey for the cognitive walkthrough method, we used a Google Form to develop a series of 12 pertinent questions that participants could respond to right away. We divided the areas of our inquiries into three groups: action and control, interactive and engagement, and outcome and goal. Following the collection of survey responses, we carried out our context mapping and obtained two different forms of weighted averages for the questionnaire. Finally, we mapped our positive and negative feedback using the parameters and design concepts.

1.

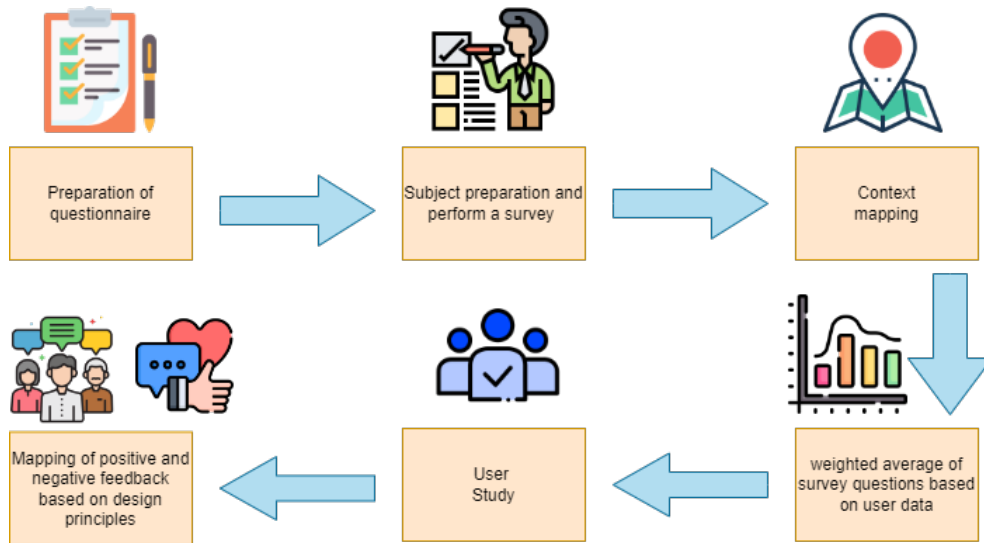


Fig. 1. Diagram on cognitive walkthrough method.

### 3.1 Preparation of the Questionnaire

Before beginning the user survey for the cognitive walkthrough approach, we need to prepare a set of quick and responsive questions that participants can respond to right away. We have generated a total of 13 survey questions with the help of a Google Form. We have attached our website link on top so that the participants can get an idea of our system before diving into the survey. We have been instructed to create 3 categories of questions, which are: Action and Control, Interactive and Engagement, and Outcome and Goal, and each category had to contain at least 4 questions. From the start, questions 1-4 represent Action and Control (AC), then questions 5-8 represent Interactive and Engagement (IE), then Questions 9-12 represent Outcome and Goal (OG), and the last 13th question is feedback about our website, “Foodieverse.” From questions 1–12, participants have to select their desired answer; there were options for different satisfaction levels 1–5. So, this questionnaire is prepared to assess the success of our food delivery website in terms of meeting the users’ aims and expectations.

Category	Questions
AC	1. Are you satisfied with the information we gave you on how our system operates in our help layout?
	2. Did the links lead you to the right pages and materials?
	3. Did you have to click too many times to find what you were looking for?
	4. Did you face any technical glitches while ordering foods on our website?
IE	5. How much are you satisfied by the variety of restaurant meals we offer on our website?
	6. Does the food purchasing experience give you the same feelings as ordering from a restaurant?
	7. Is our delivery service able to provide you with food on time and are you satisfied with the service?
	8. Could you use the shortcuts on our website to access all the required features?
OG	9. Would you like to receive more deals and promo codes from us?
	10. Are you satisfied with the discount offers we give on foods.
	11. Do you wish to earn points for your purchases of food through our service and use those points to redeem vouchers?
	12. Do you want to tell others about our website so they may buy food from restaurants through us? Rate your level of satisfaction out of 5

**Table 1.** Survey questionnaire on foodieverse project.

### 3.2 Subject preparation and perform survey

We have 13 survey questions, so we used Google Forms to create a form. Following that, we attached our questionnaires in individual parts, classifying them. Finally, we included a link to our website at the top so that participants could get a sense of our system before reviewing it. Then we created an open link so that anyone having the URL could access it and submit our questions. Furthermore, we have chosen eligible participants who are generally our friends, family, or other known people, with the requirement that they are involved in computer science or technology. Also, they should have individual mental models from individual environments. So, we could choose 22 of those people and then provide the form link to them virtually. With that, we instructed them to first visit our website and then proceed with the survey, as well as how to select the answers. We also requested to our participants provide comments on our system, whether positive or negative, but they must be constructive. Once they successfully submitted our form, the responses are automatically collected one by one in an Excel spreadsheet. Afterward, we carefully saved our response Excel spreadsheet so that we could use it in the following steps.

### 3.3 Context Mapping

Following the completion of the survey, we conducted context mapping. Our questionnaire included three domains: action and control (AC), interactive and engagement (IE), and outcome and goal (OG). Here, "C" stands for "Context," and we have C1-C7 (context 1-context 7). So, Context-1 is the Action and Control (AC) domain, which includes Questions 1-4, Context-2 is the Interactive and engagement (IE) domain, which includes Questions 5-8, and Context-3 is the outcome and goal (OG) domain, which includes Questions 9-12. Furthermore, context-4 is a combination of questions from the AC and IE domains, Context-5 is combination questions of from IE and OG domains, and Context-6 is a combination of questions from AC and OG domains. Last but not least, Context-7 is a combination of questions of AC, IE, and OG domains. The sharpness of the image is increased in several steps.

### 3.4 Weighted Average of survey questions based on user data

After we got the survey responses in our excel sheet, the next step was turning our participants' answers into individual numerical forms. It turned out that we have two types of questions, one's answer ranges from 1-5 (numerical), and another whose answer ranges from 0-2 (numerical). Then we made two different tables for our weighted average. In this case, we used  $(\frac{\text{all question responses in numeric value}}{\text{total response}})$  this formula to calculate the weighted average or use  $(\frac{\text{Average (total responses)}}{\text{total responses}})$  this equation in Microsoft Excel to calculate the direct average. Then, in the last section of the table, We used the same equation to calculate the overall average. We repeated the process for both tables.

### 3.5 User Study

User study is a vast and complicated topic that might be difficult to judge because it contains so many distinct aspects and points of view. Even though there are standards, there is no accepted definition of user study and evaluation in terms of how to find the many items to assess from the user's and the software's points of view and in a given context. But still, we have tried to study each user containing individual mentality and find information to improve our system. Before mapping positive and negative feedback based on design principles, we separated and examined positive and negative feedback from our system.

### 3.6 Mapping of positive and negative feedback based on design principles

SL.No	Parameters	Keywords	Selected Users Comments
01	Design	(P)Overall UI design (N) Not modern	(P) UI design is satisfying and interesting. (P) UI is really mesmerizing. (P)The Ui design looks very impressive along with the color combination.  (P) Nice ui and colour combination .  (P) Your ui design is very innovative and also i liked your color combination of your ui.  (N) The design should be modernized a bit.
02	Satisfaction	(P) smooth (P) Usability and structure (P) Proper working	(P) The website looked great. The Ui design was quite smooth and satisfying. There should be more items!  (P) The Usability and the website structure is good enough  (P)The Ui design looks great! All the options were working properly
03	Responsive	(P)for ordering	(P) a good responsive website for ordering food.
04	Performance	(P) Quick service (N) Functionality (P) accessing (P) Plug-in	(P) Great website for foodies. User friendly and quick service provider.  (N) The UI looks good on desktop. All the elements works as it should be. But there is some minor bug in the mobile version. The 'hamburger menu" button sometimes freezes instead of collapsing the menu.  (P)The website looked amazing. The menu bar was well organized and I could easily access what I wanted. The search option at the home page was really helpful to find my desired item.  (P) Keep it up! Please give some more example of food or restaurants that will make your ui more gorgeous! And last thing is your all plug-ins worked very well Thats impressive. Thank you!
05	Usefulness	(P) HRI Rule (P) Organization (N) Variety	(P) The ui was great and it followed the rule of hri correctly. It was easy to use. Great project (P) UI is user friendly and well organized. (N) There should be varieties of restaurants. So far impressive.
06	Compatibility	(P)Interactive (N) Footer color combination	(P)The UI design is interactive and dynamic. A button named "Order Now" with live animations on the navigation panel may increase the user experience to a great extent.  (N) Have look on Color combination also in footer  (N) Everything is good. If you guys improve the color combination a little bit, it will look more realistic. Focus on the footer.
07	Technical Glitch	(P)No glitch	(P)ordering food is easy and the main thing is there are no glitches in the website.



**1. Design:** Design impacts how much interest people have in using the product. The overall user interface design received mostly positive feedback. However, the color is outdated, and this negative comment was also received.

**2. Satisfaction:** The user's level of pleasure with the software after use is one of the satisfaction design criteria. We received positive reviews on the smoothness of the UI, usability, structure, and working options.

**3. Responsive:** As the name says, the responsive parameter specifies how the website responds, and whether good feedback has been received.

**4. Performance:** This parameter provides suggestions for improving the software's user experience and defines how accurately and efficiently the system's functionality operates. We received mostly positive feedback, but certain negative criticism as well, claiming that a specific button freezes.

**5. Usability:** This parameter denotes the convenience and ease of any system. We got good feedback except for a negative one containing the lack of restaurant variety.

**6. Compatibility:** When referring to this parameter, we mean that an application runs successfully with a specific function. But we received mostly negative feedback about improving our footer.

**7. Technical Glitch:** A technical glitch refers to having technical troubles, which we almost never have based on feedback.

## 4 Web Design

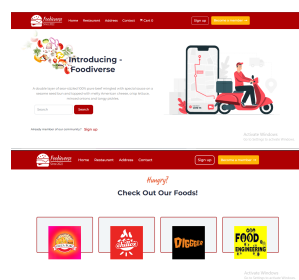
**1. HTML:** The coding used to build a web page and its content is known as HTML (HyperText Markup Language). For instance, material could be organised into paragraphs, a list of bulleted points, or graphics and data tables. It can be helped by technologies like CSS and programming languages like JavaScript. HTML is made up of elements that one can employ to enclose or wrap certain parts of the material to make it seem or perform a certain manner. The enclosing tags can make a word or image hyperlink to another location, italicize words, change the font size, and so on. In order to build our project we have used HTML. HTML gave the basic figure of our website. it has helped us to create each page of the website. We were also able to connect each page using HTML codes.

**2. CSS:** CSS is the programming language used to style a Web page. CSS is an abbreviation for Cascading Style Sheets. CSS specifies how HTML elements should appear on screen, paper, or in other medium. CSS also saves a lot of time. It has the ability to control the layout of numerous web pages at the same time. Furthermore, CSS is utilized to establish styles for your web pages, such as design, layout, and display variants for different devices and screen sizes. It adds a new functionality to HTML. It is commonly used in conjunction with HTML to alter the appearance of web pages and user interfaces. CSS is used for styling in our code. It has helped us to modify and each section of the website.

**3. BOOTSTRAP:** Bootstrap is a free and open source front-end programming framework for building websites and web applications. Bootstrap is a set of vocabulary for template designs that was created to enable responsive building of mobile-first websites. Bootstrap, as a framework, incorporates the fundamentals of responsive web development, so developers only need to insert code into a pre-defined grid system. The Bootstrap framework is composed of Hypertext Markup Language (HTML), CSS, and JavaScript. Web developers who use Bootstrap can create websites considerably faster because they don't have to worry about basic commands and functionalities. Using BOOTSTRAP we could easily take codes and put it in our HTML structure. It has made our work more easier.

**4. JavaScript:** Although it is most famous for being the scripting language for Web pages, JavaScript (commonly abbreviated to JS) is a lightweight, interpreted, object-oriented language with first-class functions that is also utilized in other non-browser applications. we have tried to use java script to run different functionality in our project

**5. UI Design:** After combining HTML, CSS, BOOTSTRAP and JavaScript we have made our user interface. The UI design is demonstrated below:



**Fig. 2.** Basic UI of home and restaurant section .

**Sign up Here**

Email

Password

[Signup](#)

Not have an account? [Become a member](#)

**Become a member**  
Hello! Dear welcome to our website.

First Name

Last Name

Phone Number

E-mail

Address

Password

Confirm Password

[Register Here](#)

Already have an account? [Sign Up Here](#)  
By clicking the register here button, You agree to our Terms and Condition and Policy and Privacy

Fig. 3. Login and signup section.

Pickup restaurant point!

Enter your delivery location.

Departure

Arrival

[Pickup restaurant point!](#)

Have you followed our Social sites?

RESTAURANTS 207

DELIVERY 207

REVIEW 207

CUSTOMERS 207

Fig. 4. Address and social section.

## 5 Implementation and Result Analysis

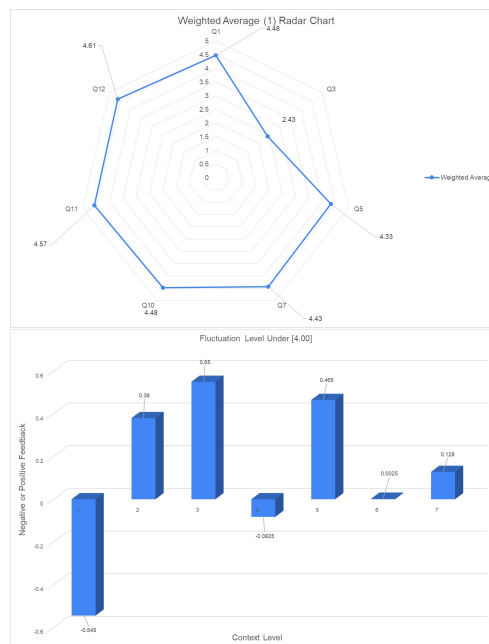
### 5.1 The Weighted Average

The Weighted Average scores of survey Feedback (1) and survey Feedback (2) is given below along with the diagram: As we have Weighted Average scores of survey Feedback (1) and survey Feedback (2), we also got two different diagrams.

Domain	Question Number	Weighted Average	All Average
Action and Control	Q1	4.48	3.455
	Q3	2.43	
Interactive and Engagement	Q5	4.33	4.38
	Q7	4.43	
Outcome And Goal	Q10	4.48	4.553333333
	Q11	4.57	
	Q12	4.61	

**Table 2.** The Weighted Average scores of survey Feedback (1)

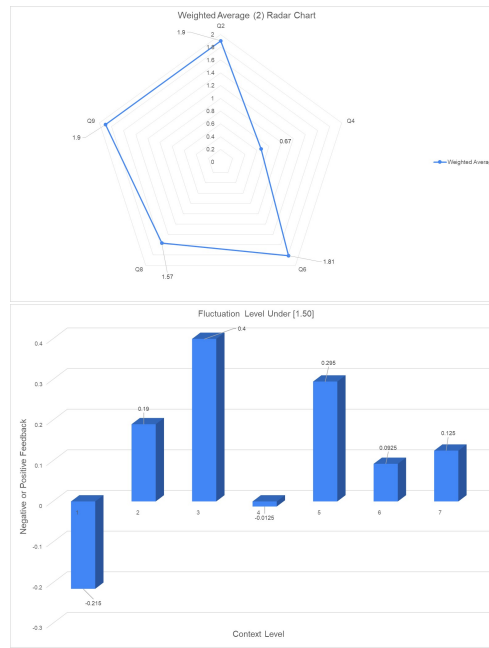
Domain	Question Number	Weighted Average	All Average
Action and Control	Q2	1.9	1.285
	Q4	0.67	
Interactive and Engagement	Q6	1.81	1.69
	Q8	1.57	
Outcome and Goal	Q9	1.9	1.9

**Table 3.** The Weighted Average scores of survey Feedback (2)**Fig. 5.** Raddar chart diagram and Functional level diagram for feedback(1).

Here we use ( (all question response in numeric value) total response ) this formula to calculate the weighted average or use ( = Average (total responses) ) this equation in Microsoft

Excel to calculate direct average.

And also use the same equation for calculating the all average in the last part of the table.



**Fig. 6.** Raddar chart diagram and Functional level diagram for feedback(2).

## 5.2 Context mapping tables

	Domain	Avg. Score	Fluctuation Level Under	Fluctuation notation	Opinion
C1	AC	3.455	0.545	(N)	n context 1, the aggregate context score is less than the expert mean rating. It does not satisfied the expert mean rating so it is considered to be Negative
C2	IE	4.38	0.38	(P)	n context 2&3, the aggregate context score is more than the expert mean rating. It does satisfied the expert mean rating so it is considered to be Positive.
C3	OG	4.55	0.55	(P)	
C4	AC+IE	3.9175	0.0825	(N)	n context 3, the aggregate context score is less than the expert mean rating. It does not satisfied the expert mean rating so it is considered to be Negative
C5	IE+OG	4.465	0.465	(P)	n context 6,7&8 the aggregate context score is more than the expert mean rating. It does satisfied the expert mean rating so it is considered to be Positive.
C6	OG+AC	4.0025	0.0025	(P)	
C7	AC+IE+OG	4.128333333	0.128	(P)	

**Table 4.** Mapping of context based user aggregated scores with Cognitive evaluation feedback(1) based

	Domain	Avg. Score	Fluctuation Level Under	Fluctuation notation	Opinion
C1	AC	1.285	0.215	(N)	<b>n context 1, the aggregate context score is less than the avg. score mean rating. It does not satisfied the avg. score mean rating so it is considered to be Negative</b>
C2	IE	1.69	0.19	(P)	n context 2&3, the aggregate context score is more than the avg. score mean rating. It does satisfied the avg. score mean rating so it is considered to be Positive.
C3	OG	1.9	0.4	(P)	
C4	AC+IE	1.4875	0.0125	(N)	n context 3, the aggregate context score is less than the avg. mean rating. It does not satisfied the avg. mean rating so it is considered to be Negative
C5	IE+OG	1.795	0.295	(P)	n context 6,7&8 the aggregate context score is more than the avg. mean rating. It does satisfied the avg. mean rating so it is considered to be Positive.
C6	OG+AC	1.5925	0.0925	(P)	
C7	AC+IE+OG	1.625	0.125	(P)	

**Table 5.** Mapping of context based user aggregated scores with Cognitive evaluation feedback(2) based

## 6 Conclusion and Future Works

Unsurprisingly, food delivery applications have been among the industries in Bangladesh with the quickest growth over the past few years. Foodpanda, Hungry Naki, Pathao Food, Sohoz Food, and other food delivery services may have existed in recent years, but as a newcomer, we will work to improve our food delivery service by developing a sustainable business strategy. In order for visitors to quickly and simply select their preferred food and place orders, we have worked to make our website as user-friendly as possible. Additionally, we'll be aiming to supply the requested foods in 30 minutes and upgrade our user interface in the future with technological strategy. Although, our limitations currently are we did not finish working with option of adding items to cart due to some technical difficulties but hoping to overcome this problem soon in next phase.

## References

1. M. N. Islam, S. R. Khan, N. N. Islam, S. R. Zaman, S. R. Zaman *et al.*, “A mobile application for mental health care during covid-19 pandemic: Development and usability evaluation with system usability scale,” in *International Conference on Computational Intelligence in Information System*. Springer, 2021, pp. 33–42.
2. H. W. Alomari, V. Ramasamy, J. D. Kiper, and G. Potvin, “A user interface (ui) and user experience (ux) evaluation framework for cyberlearning environments in computer science and software engineering education,” *Heliyon*, vol. 6, no. 5, p. e03917, 2020.
3. M. A. Ahmed, M. N. Islam, F. Jannat, and Z. Sultana, “Towards developing a mobile application for illiterate people to reduce digital divide,” in *2019 International Conference on Computer Communication and Informatics (ICCCI)*. IEEE, 2019, pp. 1–5.
4. S. Kazemi, G. Liebchen, and D. Cetinkaya, “A survey on the usability and user experience of the open community web portals,” in *International Conference on Human-Computer Interaction*. Springer, 2022, pp. 409–423.
5. M. Islam, M. Ali, A. Al-Mamun, and M. Islam, “Semiotics explorations on designing the information intensive web interfaces.” *Int. Arab J. Inf. Technol.*, vol. 7, no. 1, pp. 45–54, 2010.
6. S. Valladares-Rodriguez, M. J. Fernández-Iglesias, L. Anido-Rifón, D. Facal, C. Rivas-Costa, and R. Pérez-Rodríguez, “Touchscreen games to detect cognitive impairment in senior adults. a user-interaction pilot study,” *International journal of medical informatics*, vol. 127, pp. 52–62, 2019.
7. K. Stawarz, C. Preist, D. Tallon, N. Wiles, D. Coyle *et al.*, “User experience of cognitive behavioral therapy apps for depression: an analysis of app functionality and user reviews,” *Journal of medical Internet research*, vol. 20, no. 6, p. e10120, 2018.
8. S. Z. Diya, R. A. Prorna, I. I. Rahman, A. B. Islam, and M. N. Islam, “Applying brain-computer interface technology for evaluation of user experience in playing games,” in *2019 International Conference on Electrical, Computer and Communication Engineering (ECCE)*. IEEE, 2019, pp. 1–6.
9. K. M. Munim, I. Islam, M. Khatun, M. M. Karim, and M. N. Islam, “Towards developing a tool for ux evaluation using facial expression,” in *2017 3rd international conference on Electrical Information and Communication Technology (EICT)*. IEEE, 2017, pp. 1–6.
10. M. N. Islam, M. Karim, T. T. Inan, A. Islam *et al.*, “Investigating usability of mobile health applications in bangladesh,” *BMC Medical Informatics and Decision Making*, vol. 20, no. 1, pp. 1–13, 2020.