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| **south east Asian institute of technology, inc**  **System Analysis & Design**  **of**  **Bing’s Scoops & Bites: Online Food Delivery Web App** |

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To the **Bings Scoops & Bites** thank you for allowing us to conduct our research study

**DEDICATIONS**

The researchers would like to dedicate this study to the Almighty God for giving strength to overcome pressure while doing their project, to our beloved families Mr. and Mrs. Delgado, Mr and Mrs. Futolan,, Mr and Mrs. Marot, and friends, for without them they wouldn’t be in this endeavor; and to their Alma Mater the South East Asian Institute Of Technology, Inc.

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**CHAPTER I:**

**INTRODUCTION**

**Rationale of the Study**

Bing's Scoops & Bites is a user-friendly online food delivery web application that is designed specifically for restaurants. Its main feature is the ability to automate and streamline various tasks and processes within the restaurant, allowing staff to focus on providing high-quality service to customers. The web app provides the following features: (i) Easy menu browsing, customers can conveniently browse the restaurant's menu and select their desired dishes through the internet. (ii) Customer reviews and ratings, customers can leave feedback and ratings, providing valuable insights for the restaurant to improve its offerings and enhance customer experiences. (iii) Automated order-tracking of customer, web app automatically tracks customer orders, providing real-time updates and helping the restaurant manage its orders and delivery schedule more efficiently (iv) Payment and delivery option, only COD(Cash-On Delivery). (v) Mobile-friendly interface, the web app is designed to be mobile-friendly, allowing customers to access menus and ordering options from their smartphones and tablets. With convenient access to menus and ordering options, customers can enjoy a personalized dining experience. The web app also helps the restaurant to manage its orders and delivery schedule more efficiently, ensuring timely and accurate delivery of orders. Additionally, we add an enhancement to the web application that include a user registration feature. This would allow customers to create an account online, enabling them to save their preferences, view order history, and easily place repeat orders. The registration feature would further streamline the ordering process and provide a more personalized experience for users.

Bing's Scoops & Bites is a small food store located in the rural area of Prk. Zone II, Brgy. Poblacion, owned by Mrs. Jovelyn Salvador. The store has been operating for two years, serving a variety of food, desserts mainly ice creams, and drinks to its local customers. The store's menu mainly comprises of Filipino street foods, such as fish balls, kwek-kwek, and banana cue, among others. The current process in the establishment is that the customer will from the menu and will make an order. After that, the customer will pay the order that they choose and will wait at the table for their order. The employees of the said company vary from cashiers, assistants, and managers. The food store are using manual orders as their means to record information of the store including the orders and information of the customer.

These are the following problems that Bing’s Scoops & Bites is currently experiencing. (1.) Navigation of a long list of items through multiple pages or categories to find what they are looking for is that it can be time-consuming, confusing, and frustrating. (2.) Not being able to have reviews and ratings that potential customers may have difficulty assessing the quality and reliability of the store’s food and service (3). Manual tracking of orders can be time-consuming and prone to errors, which can result in delays or missed orders. (4). Not having a payment and delivery service, customers may need to pay in person or over the phone and arrange their own delivery or pickup, which can be time-consuming and inconvenient (5). Not having an online presence that can be accessed through phone, many customers rely on the internet and mobile devices to search for food and order food online. Without an internet presence or accessibility through devices, customers may not be able to find the store or may find it difficult to place an order.

The purpose of the Bing's Scoops & Bites project is to provide a user-friendly online food delivery web application specifically designed for restaurants to streamline various tasks and processes within the restaurant, allowing staff to focus on providing high-quality service to customers. The project aims to address the common problems faced by restaurants in managing their orders and providing a personalized dining experience to customers, such as difficult navigation of menu items, lack of customer reviews and ratings, manual order tracking, lack of payment and delivery services, and absence of an online presence. By offering an easy-to-use menu browsing interface, a platform for customer feedback and ratings, automated order tracking, and cash-on delivery option, Bing's Scoops & Bites seeks to provide a more efficient and personalized dining experience for customers. In addition, the web application helps the restaurant to manage its orders and delivery schedule more efficiently, ensuring timely and accurate delivery of orders. Overall, the purpose of the project is to help restaurants stay competitive in the food delivery industry by providing a convenient and personalized dining experience for customers, while also improving the restaurant's operations and reducing the workload of staff.

**Objectives of the Study**

**General Objectives**

The researcher aims to study and develop a Bing’s Scoops & B Online Food Delivery Web App at Bing’s Scoops & Bites.

**Specific Objectives**

* To be able to develop a web application that will provide customers with an easy-to-use menu browsing that includes detailed information and images of each product.
* To be able to develop a web application that will enable reviews and ratings for each product, allowing customers to provide feedback and help improve the overall quality of service.
* To be able to develop a web application that will automate the order-taking process through the web app, reducing the workload of staff and improving operational efficiency.
* To be able to develop a web application that will offer a cash-on delivery payment, making the ordering process more convenient for customers and allowing them to pay when their food is delivered.
* To be able to develop a web application that is accessible through phones, tablets, or other devices.
* To be able to develop a web application that allows the user allow customers to create an account online.

**Scope and limitation of the study  
Scope of the Study**

**Menu browsing**

The web app will have a user-friendly interface with categories, and filters to help customers find what they are looking for quickly. Each item on the menu will have a detailed description and high-quality images to provide customers with a clear idea of what they are ordering.

**Enable reviews and ratings**

The web app will allow customers to leave reviews and ratings for each product they order. The reviews and ratings will be displayed on the menu page, allowing potential customers to assess the quality and reliability of the restaurant's food and service.

**Automate the order-taking process**

The web app will automate the process of taking orders from customers. Customers will be able to add items to their cart and place an order directly through the web app. The system will automatically generate a notification for the restaurant staff to start preparing the order, and customers will receive real-time updates on their order status.

**Cash-On Delivery payment**

The web app will offer cash on delivery, Customers will be able to pay when their order is arrived, making the ordering process more convenient for them.

**Accessible through phones, tablets, or other devices**

The web app will be mobile-friendly and accessible through phones, tablets, or other devices. Customers will be able to access the menu, place orders, and track their order status on the go, making it a convenient option for busy customers who are always on the move.

**User registration**

The web app will would allow customers to create an account online, enabling them to save their preferences, view order history, and easily place repeat orders.

**Limitations of the study**

The proposed web application cannot work when there is no active web connection or internet. Furthermore, the web application cannot accommodate any means to pay online such as Gcash, bank, transfer except Cash On Delivery. The proposed web application cannot accommodate any customers that are not internet web application.

**Significance of the Study**

This study intends to benefit not only the users but also the establishments that will use the system. The development of an Online Food Delivery Web App for Bing's Scoops & Bites will provide a more efficient and convenient way for customers to order and receive their food, while also streamlining the order-taking process and reducing the workload of the food store's staff. This study will hope to benefit the following:

**Owners and staff**

This system will help them lessen their works since they are responsible for handling the orders and customers.

**Bing’s Scoop & Bites**

The food store will have an Online Food Delivery Web App which requires less paper and reduces the workload on the store.

**Customers**

The online food delivery web app can provide a more convenient and efficient way for customers to order and receive their food.

**Researchers**

Researchers can use their skills and knowledge in research. It is an opportunity for the researchers to put into practice on what they have learned as Information Technology students.

**Delivery Service Provider**

Also, one of the beneficiaries of the web application and help them deliver food with ease through the web application to track the given customers’ address.

**Future Researchers**

This system would be a great help for future researchers. The documentation and system will serve as their literature or prior art and the system can be upgraded based on the new requirement.

**Flow of the Study**

**Input Process Output**

* Display menu items with their corresponding details and images.
* displays the customer's review and rating
* Order confirmation sent to a customer
* Finalize the order and enter user details, including the address, phone number, and etc.
* displays the landing page or home page of the website
* Search food and categories
* leaves a review and rating
* places an order
* selected payment method: Cash on delivery.
* accesses the web app through their mobile device
* Register an account

* Retrieve menu data from the database
* records and updates the customer's review and rating in the database.
* automatically process the order and add to database
* processes the payment and updates the order status accordingly
* detects the type of device being used and adjusts its layout to fit the screen size of the device
* Store the customer account details in the database.

**Definition Of Terms**

* **Online food delivery web app** - a web-based application that allows customers to browse menus, place orders, and pay for food online, as well as track delivery in real-time.
* **Streamline** - to optimize and simplify a process to make it more efficient and less time-consuming.
* **Customer preferences** - the specific tastes, preferences, and requirements of individual customers regarding their food orders, such as dietary restrictions or preferred ingredients.
* **Competitiveness** - the ability of a business to compete effectively in a particular market, based on factors such as pricing, quality, and service.
* **Feedback** - information or comments provided by customers about their experiences with a particular product or service, which can be used to improve offerings and overall customer satisfaction.

**CHAPTER II**

**REVIEW OF RELATED LITERATURE AND STUDIES**

This chapter presents variously related literature, system and studies on automated systems, web or web application and Food Delivery Web App related services which are relevant in the conduct of this study.

**Related Literature**

**Foreign Literature**

**Online Food Shopping: A Conceptual Analysis for Research Propositions**

According to Liu and Chien-Ho Lin (2020), this paper reviews the features of online food shopping, provides a commentary, and proposes future research directions in this field. The propositions presented include the need for co-creating collective and social values in online food shopping systems, aligning technology with the nature of food businesses, establishing sound financial systems for a healthy online food ecosystem, and understanding the interaction between online and offline food businesses. While there have been studies on online food shopping, there are research gaps, as many focus on the perspectives of researchers rather than consumers and businesses, and do not consider crisis situations like the COVID-19 pandemic. Future research directions are suggested to address these gaps and explore customer and business perspectives, make future predictions, understand the implications of mobile app ordering, and examine emerging technologies in online food ordering.

In conclusion, existing studies on online food shopping have provided evidence on the implications and benefits of e-commerce. However, it is important to acknowledge that shopping for food online differs from purchasing other commodities. The comprehensive academic review conducted in this paper helps to elucidate significant themes in the current literature. The critical propositions put forward in the reviewed studies offer valuable insights for future research directions. These include focusing on customer and business perspectives, making future predictions, understanding the implications of ordering via mobile apps, and examining emerging technologies in online food ordering. This academic review and the proposed research directions hold significance for researchers and online food stores, especially as the global trend of embracing online shopping continues to grow.

**Online Food Delivery Industry in India: A Case of Customer Satisfaction Dynamics**

According to Bagia and Khan (2019), food variety and pricing offers in the form of cashbacks are considered to be the major factors that drive consumers' online purchase intention in the online food delivery market. Kapoor and Vij (2018) found that mobile app attributes, including visual design, informational content, collaboration features, and navigational ease, motivate customers to use mobile apps for food ordering and payments. Chetan et al. (2018) identified convenience, availability of information, and anxiety with technology as significant factors affecting customer satisfaction. Suhartant et al. (2019) discovered that the quality of food through digital apps directly influences customer loyalty, while service quality remains insignificant. Sam and Joy (2020) observed a decline in traditional methods of food purchasing, with a majority of respondents preferring food delivery mobile apps. Verma (2020) highlighted the impact of advancements in mobile technologies on revolutionizing online food deliveries, emphasizing the importance of visual presentation and ease of use. The existing literature signifies the need for further research in the Indian online food industry, specifically focusing on customer satisfaction.

The online food delivery market in India has experienced significant growth due to changing consumer lifestyles and increasing demand for convenience. Companies like SWIGGY and ZOMATO have emerged as major players in this highly competitive industry, with various other domestic and foreign competitors. To thrive in this market, companies must prioritize customer satisfaction by improving product quality, leveraging efficient technology, and providing exceptional customer experiences. Existing literature highlights the importance of factors such as food variety, pricing offers, mobile app attributes, convenience, and quality of food in influencing customer behavior and satisfaction. However, further research is needed to gain a deeper understanding of customer satisfaction in the Indian online food industry and to identify additional factors that can contribute to the success of businesses in this market.

**Local Literature**

**A Study of Stakeholders Perception of Factors Affecting Online Food Delivery Service Industry in the Philippines**

According to Lim, SJ. and Noroña, Marvin 2021, the online food delivery (OFD) industry has gained significant attention as e-commerce extends its reach to food services. This study utilizes the Business Model Canvas (BMC) and factorial Uni-variate analysis of variance (ANOVA) to identify the significant factors affecting the OFD industry. The research findings highlight the importance of timeliness and convenience as the most significant factors for all stakeholders, including the App firm, couriers, and customers. The study proposes an improved integrated system based on these significant factors, aiming to enhance the OFD industry and establish mutually beneficial relationships among the stakeholders. The rapid adoption of mobile applications and the emergence of new technologies, coupled with the COVID-19 pandemic, have further fueled the demand for online food delivery services. Customers value app features such as ease-of-use, real-time tracking, and suggested options, which positively influence their intentions to use food delivery service apps. Addressing issues related to ordering, payment systems, and courier-related challenges is crucial to achieving the key goals of convenience and timeliness in the OFD industry.

The online food delivery (OFD) industry has witnessed significant growth and attention as e-commerce expands into the food service sector. The study conducted by SeonJae Lim and Marvin I. Noroña (2021) examines the significant factors affecting the OFD industry using the Business Model Canvas (BMC) and factorial Uni-variate analysis of variance (ANOVA). The research findings underscore the importance of timeliness and convenience as crucial factors for all stakeholders, including the App firm, couriers, and customers. Improving the integrated system based on these factors can enhance the OFD industry and foster mutually beneficial relationships among stakeholders. The increasing adoption of mobile applications and the impact of the COVID-19 pandemic have further accelerated the demand for online food delivery services. Customers value app features such as ease-of-use, real-time tracking, and suggested options, which positively influence their intentions to use food delivery service apps. Resolving issues related to ordering, payment systems, and courier-related challenges is vital to achieving the primary objectives of convenience and timeliness in the OFD industry. The study contributes valuable insights that can guide the development and enhancement of the OFD industry to meet the evolving needs and preferences of stakeholders.

**Food Delivery System**

According to K. J. Somaiya 2021, our system aims to revolutionize the online food ordering and delivery industry by connecting local vendors to customers through an efficient and user-friendly app. This system addresses the challenges faced by customers who previously had to physically visit local stores to purchase their desired items, especially in scenarios such as the COVID-19 pandemic. By providing a platform for users to connect with local vendors, our system offers convenience for customers and allows local vendors to generate income even during challenging circumstances. Traditionally, individuals who didn't want to cook, had a tiring day, or lacked cooking skills had limited options. However, with the advent of our food ordering and delivery app, these individuals can now easily order food online from a variety of service providers including hawkers, grocery stores, restaurants, and tiffin services. To access our service, service providers simply need to register on our platform. The process for customers is straightforward: they select their preferred store, browse the menu, and place their order. Our system also provides live tracking of orders, ensuring transparency and convenience for customers. Payments can be made either through cash on delivery or online transactions, giving customers flexibility in choosing their preferred payment method. With the advancement of technology and the widespread use of smartphones, we have witnessed a shift in dining trends. People now prefer dining in the comfort of their own homes rather than going out with friends and family. To meet the increasing customer expectations and provide enhanced facilities, we have developed our food order and delivery app. This online food ordering and delivery system is specifically designed to cater to the needs of the online food ordering market. Previously, businesses had to create their own websites or apps and employ delivery personnel to handle the logistics of multiple orders. Additionally, expensive software was required to manage the ordering and delivery processes. Our system streamlines these operations, focusing on providing a seamless food ordering and delivery experience.

Our system addresses the needs of customers who seek the convenience of online food ordering while also benefiting local vendors. By connecting users to local stores through our platform, we offer a comprehensive solution that enhances accessibility, simplifies the ordering process, and provides live order tracking. With the growing popularity of online food ordering, our system is poised to contribute to the ongoing transformation of the food industry.

**Foreign studies**

**Smart Food Ordering System for Restaurant**

According to Singh, P. et al. (2020), the purpose of this project is to develop a computerized and mobilized food ordering system that can revolutionize the traditional manual ordering system used in the majority of the food and beverage industries. The current manual system is prone to human errors and involves significant paperwork, resulting in inefficiency and ineffective management. The computerized and mobilized system aims to improve business routines by providing better management and easier handling of daily operations. The highlight of this system is its flexibility and adaptability, as it allows ordering procedures to be carried out on tablets, PCs, and mobile devices. The chosen methodology for developing the system is the agile methodology, ensuring an iterative and collaborative approach to the project. The implementation of the system utilizes Android application development for the front end and integrates PHP and MySQL database for the back end. The proposed system introduces an automated food ordering process with real-time customer feedback. Customers can conveniently place their orders using a touchpad, which is then transmitted to the kitchen for preparation. The same order is also sent to the customer's tablet for billing purposes. This system not only streamlines the ordering process but also improves the performance of restaurant staff, leading to enhanced service quality and customer satisfaction.

The computerized and mobilized food ordering system presented in this project, combining Android and wireless technology, offers numerous benefits to the restaurant sector. It reduces the need for a large number of employees behind the counter, leading to cost savings and minimizing errors. Additionally, the system's efficiency and multiple screens help prevent long queues at the counter, enabling faster execution and accommodating a higher throughput of orders. Overall, this system represents a significant advancement for the food and beverage industry, enhancing operational efficiency and customer experience.

**Online Food Ordering Application**

According to Gurav, Prof R. et al. (2021), the online food ordering application has become increasingly popular among fast-food restaurants in the Western world. This method allows customers to conveniently order food online and have it delivered to their doorstep. Payment is typically made through credit cards, although some establishments also offer the option to pay with cash upon delivery. The system proposed in this project aims to enable customers to place their food orders online through a user-friendly application. With the widespread adoption of the internet and associated technologies, numerous opportunities have emerged in the online space. Businesses and companies are leveraging the internet to streamline their operations and reach a broader audience. One such business model facilitated by the internet is the online food ordering application. In today's fast-paced society, many restaurants prioritize quick preparation and delivery of orders, catering to the demand for convenience. The proposed system will allow customers to access the application and easily place their food orders. Once an order is placed, it is stored in a database and retrieved in real-time by the admin's desktop application. The admin can quickly review the order details, including the selected items, options, and delivery information, ensuring efficient order processing with minimal delays and confusion. Online food ordering involves the delivery of food or takeaways from home chefs, local restaurants, and food cooperatives through a mobile application or website. This approach to food delivery is gaining popularity, particularly among the younger generation, as it transforms the way food is ordered and received. Customers prefer using food ordering apps as they provide a convenient and seamless experience. By using the app, customers can effortlessly generate an order without the need to explain it to another person, and have the food delivered to their doorstep. Food ordering apps typically offer features such as searching for local restaurants and different cuisine types. The entire menu is displayed within the app, allowing customers to make their selections with just a few clicks. To use the app, customers need to download it, create a profile with their address and payment information, and choose their preferred payment method, usually through cashless transactions with credit or debit cards. Food ordering apps can vary in terms of the features they offer, such as refined search options based on popular orders, pricing, order history, customer reviews, promotions, and more. Each app aims to enhance the customer experience and streamline the food ordering process.  
 The online food ordering application discussed in this project represents a significant advancement in the food industry. It leverages the power of the internet and mobile technology to provide customers with a convenient way to order food and have it delivered to their desired location. By eliminating the need for face-to-face interaction and simplifying the ordering process, these apps offer a seamless experience for customers. As technology continues to evolve, online food ordering is expected to play an increasingly important role in the food service industry.

**Local Study**

**Operational Strategies of Online Food Delivery Businesses in Camarines Norte, Philippines**

According to Hill (2019), availing delivery services has become a popular trend as it allows tasks to be completed promptly and efficiently. These businesses consist of a team of employees who deliver work or assist in completing tasks for the benefit of their customers. In the Philippines, online delivery businesses are governed by Republic Act No. 792, which recognizes and regulates electronic commercial and non-commercial transactions. In Camarines Norte, a province in the Philippines, there were only a few active online food delivery services before the COVID-19 outbreak. Local Delivery Express was the first delivery service in the area, primarily focusing on food delivery and running errands for customers. Purple Box Express followed the same concept to bridge the gap between the demand and supply for these services. However, with the increasing demand, the number of online food delivery businesses in the area grew from three to nearly twenty. The study conducted on online food delivery businesses in Camarines Norte revealed several conclusions. The majority of these businesses had 11 to 15 riders and operated under sole proprietorship. They utilized social media as their digital platform and had an average weekly delivery volume ranging from 201 and above. Operational strategies commonly implemented by these businesses included monitoring rider performance, using various devices (cell phones, desktops, tablets, and laptops) to address customer needs, and optimizing marketing budgets through low-cost campaigns and promotions. However, online food delivery businesses also encountered certain challenges. Shortage of available riders during peak hours and the threat of new entrants were among the problems identified. To address these issues, the study recommended that business owners revisit their human resource plans and develop operations manuals that provide clear guidelines and processes for implementing operational strategies essential to their daily operations.

The rise of online food delivery businesses in Camarines Norte reflects the growing demand for convenient and efficient services. These businesses have adopted digital platforms, optimized their operations, and faced challenges in meeting customer demands. By revisiting their human resource plans and implementing clear operational guidelines, these businesses can enhance their daily operations and provide better service to their customers.

**Best Food Delivery Apps to Turn to in the Philippines During a Community Quarantine**

According to Christelke, AG (2020-2021), the current state of home confinement and lockdown due to the COVID-19 pandemic has presented various challenges and emotions for individuals, ranging from frustration and fear to boredom. However, the availability of advanced technology, such as mobile phones, the internet, and mobility apps, has played a crucial role in alleviating some of these difficulties. In previous eras without the technological advancements we have today, the impact of a lockdown would have been even more severe. The absence of mobile phones, internet connectivity, and laptops would have hindered communication, productivity, and entertainment opportunities. The emergence of food delivery service apps has been particularly significant in addressing the need for mobility solutions during the lockdown. These on-demand food delivery service apps, which were already in high demand before the lockdown, have replaced traditional delivery services by providing a convenient and efficient means of ordering and receiving meals from preferred restaurants. With these apps, individuals can have their favorite meals delivered right to their doorstep within a specified time frame.

The availability of food delivery service apps has greatly contributed to mitigating the challenges and monotony associated with the current lockdown situation. These apps have not only provided a solution for hunger but also supported local businesses and ensured adherence to safety guidelines. As technology continues to advance, such apps serve as valuable tools in adapting to and coping with challenging circumstances like the COVID-19 pandemic.