



A Survey on Online Fast-Food Ordering System Using ASP.NET Core MVC: Design, Challenges and Implementation

Sarat Swain

Gift Autonomous College, BBSR

Under the Guidance of

Prof. Allupati Chakradhar Patro

Department of


Master in Computer Application (MCA)

Gift Autonomous College, BBSR



<https://doi.org/10.55041/ijst.v2i6.080>

Cite this Article: Swain, S. (2026). A Survey on Online Fast-Food Ordering System Using ASP.NET Core MVC: Design, Challenges and Implementation. *International Journal of Science, Strategic Management and Technology*, 02(6). <https://doi.org/10.55041/ijst.v2i6.080>

License:  This article is published under the Creative Commons Attribution 4.0 International License (CC BY 4.0), permitting use, distribution, and reproduction in any medium, provided the original author(s) and source are properly credited.

Abstract

The Online Fast-Food Ordering System is developed as a modern web-based application that helps users conveniently browse food items, place orders, and manage food delivery operations efficiently. The system is designed using ASP.NET Core MVC framework, which provides a scalable, secure, and structured platform for both users and administrators. The application allows users to register, log in securely, view food menus, add items to cart, place orders, and track order status through an interactive interface. The frontend is developed using HTML, CSS, JavaScript, and Razor Views to ensure smooth navigation and a user-friendly experience. The backend is implemented using ASP.NET Core MVC for handling business logic, request processing, authentication, and database operations. SQL Server is used as the primary database for storing user details, food items, orders, and transaction records securely. Entity Framework Core is used for database

interaction and ORM functionality. Role-Based Authentication is implemented to manage secure login access for users and administrators. The system provides efficient management of food ordering operations with real-time order processing, responsive user interaction, and reliable database management. The application architecture ensures maintainability, scalability, and efficient communication between frontend, backend, and database layers.

Keywords— ASP.NET Core MVC, Online Food Ordering System, SQL Server, Entity Framework Core, Razor Views, Authentication, Web Application

I. INTRODUCTION

In the modern digital world, web-based applications have become an essential part of daily life. The rapid growth of internet technologies and online services has significantly transformed traditional business operations into digital platforms. One of the major sectors influenced by this

transformation is the food service industry, where online food ordering systems provide convenience, efficiency, and improved customer experience. The Online Fast-Food Ordering System is developed as a web-based application

that enables users to browse food items, place orders, and manage food delivery operations digitally. Traditional food ordering methods often involve manual processes, long waiting times, and communication difficulties between customers and restaurants. These limitations can reduce operational efficiency and customer satisfaction. The proposed system is developed using ASP.NET Core MVC architecture, which provides a structured and scalable framework for web application development. The application uses Model-View-Controller (MVC) architecture to separate business logic, user interface, and data management components efficiently. SQL Server is used as the backend database for storing user information, menu details, order records, and transaction-related data securely. The system provides functionalities such as user registration, secure login, menu management, cart operations, order placement, and order tracking. Authentication and authorization mechanisms are implemented to provide secure access control for users and administrators. The frontend interface is designed using HTML, CSS, JavaScript, and Razor Views to provide a responsive and user-friendly experience. As the number of online users and food delivery services continues to grow, scalability, performance optimization, and secure transaction management become important challenges in modern food ordering systems. Efficient backend processing, optimized database handling, and responsive frontend rendering are necessary to ensure smooth application performance. This paper focuses on the

challenges, open research issues, and future enhancement possibilities associated with the Online Fast-Food Ordering System developed using ASP.NET Core MVC technology.

II. Challenges in online fast-food ordering system

In recent years, online food ordering systems have become increasingly popular in various domains such as restaurants, food delivery services, e-commerce platforms, and hospitality management. Web-based applications continuously generate and process large amounts of user, order, and transaction data. The Online Fast-Food Ordering System also manages customer information, food menu details, order records, authentication data, and transaction-related activities through a centralized ASP.NET Core MVC application.

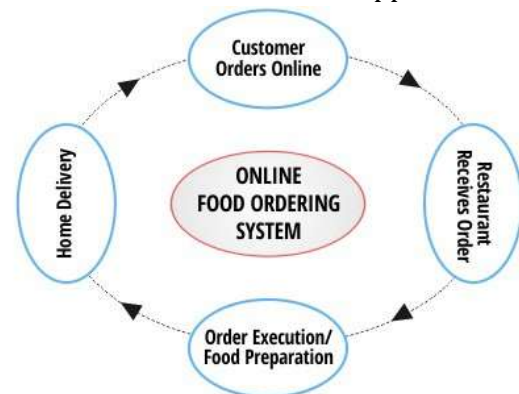


Fig. 1: Characteristics of Big Data

Modern food ordering platforms require efficient handling of real-time user requests, secure payment processing, responsive user interfaces, and scalable backend architecture. As the number of users and food delivery operations increases, several technical and operational challenges arise in maintaining system performance, data consistency, and application security. The Online Fast-Food Ordering System provides an efficient digital platform for managing food ordering operations. However, developing such a system involves various challenges related to database management, backend processing, frontend scalability,



secure authentication, and performance optimization. The system must support multiple concurrent users, fast order processing, responsive UI rendering, and reliable communication between frontend, backend, and database components.

A. Data Storage and Analysis

In recent years the amount of user and transaction data has grown rapidly through various sources such as web Applications, mobile devices, online payment systems, restaurant management systems, and food delivery platforms. These data are stored by spending significant cost whereas inefficient management may finally lead to storage limitations and poor system performance. Therefore, the first challenge for online food ordering systems is efficient database management and higher processing speed. In such cases, the data accessibility must be given top priority for order processing and customer management. The prime reason is that, data must be accessed easily and promptly for further operations and analysis. In past years, traditional database systems were used to store limited amounts of application data, but they provide slower performance when handling large numbers of concurrent requests. To overcome this limitation, optimized relational database management systems and caching technologies are introduced. However, the available storage technologies may still face performance limitations while processing large-scale order transactions and customer activities. Another challenge in online food ordering systems is related to diversity of application data. With the continuous growth of users, orders, payment records, and menu items, database management tasks have significantly increased. Additionally, data filtering, order management, and efficient record handling are essential tasks especially when dealing with large data sets. This presents an important challenge for

developers because existing database queries and backend algorithms may not always respond efficiently when dealing with high-volume transaction data. Automation of order processing and developing efficient backend algorithms to ensure consistency is a major challenge in recent years. Modern technologies such as ASP.NET Core MVC, SQL

Server, caching mechanisms, and cloud-based storage systems make it possible to manage large amounts of structured and semi-structured data efficiently. The key engineering challenge is how to effectively analyze and manage these data for obtaining better system performance and user experience. A standard process is to organize application data properly and apply optimized database operations to improve performance. The major challenge in this case is to pay more attention to designing efficient database systems and developing optimized data management tools that provide reliable performance when data comes from different sources. Furthermore, designing efficient backend algorithms to process application data is essential for improving system efficiency and scalability.

B. Backend Processing and Computational Complexities

Backend processing and data management is a prime issue in online food ordering systems. It includes a number of sub fields such as authentication, order processing, customer management, payment handling, database management, information retrieval, and data representation. There are several technologies and frameworks used for backend processing such as ASP.NET Core MVC, Entity Framework Core, SQL Server, Role-Based Authentication, Session Management, and caching mechanisms to name a few. Additionally, many integrated techniques are also developed to process real life application problems. All these



techniques are application dependent. Further some of these techniques may not be suitable for large-scale web applications in a sequential processing environment. At the same time some of the techniques have good characteristics of scalability over distributed systems. Since the size of user requests and order transactions keep increasing rapidly, the available backend processing tools may not be efficient to process these requests for obtaining smooth application performance. The most popular approach in case of large-scale application management is cloud-supported server architecture and optimized relational database systems. SQL Server is mainly responsible for storing application data whereas ASP.NET Core MVC facilitates backend processing and request handling. Processing large amounts of application data requires more computational complexity. The major issue is to handle inconsistencies and delays present in multiple user requests. In general, optimized backend architecture and efficient database management techniques are used. It may be difficult to establish a comprehensive processing model that is broadly applicable to all large-scale web applications. But domain-specific application optimization can be done easily by understanding particular computational complexities. A series of such developments could improve online food ordering systems for different environments. Much research and development has been carried out in this direction using optimized database queries and scalable backend architectures with minimum processing overhead. The basic objective in these systems is to minimize computational cost, processing time, and server complexities.

C. Scalability and Visualization of Data

The most important challenge for online food ordering systems is scalability and application performance. In the last decades researchers have paid attention to

accelerate web application processing and improve server performance followed by modern computing technologies. For this purpose, it is necessary to develop optimized database systems, scalable backend architectures, and responsive frontend rendering techniques. Incremental and distributed processing techniques have good scalability properties in the aspect of large-scale web applications. As the number of users and order transactions increase much faster than server processing capabilities, there is a natural shift toward cloud computing and distributed server architecture. This shift in application infrastructure leads to the development of scalable web technologies. Real time applications like online food ordering, payment processing, delivery tracking, customer notifications, and order monitoring require efficient parallel and distributed processing. The objective of visualizing application data is to present them more effectively using dashboards, charts, tables, and graphical user interface techniques. Graphical visualization provides better understanding of order records, sales reports, customer activities, and transaction details. However, online marketplaces like food delivery platforms, restaurant systems, and e-commerce applications may have millions of users and large numbers of daily transactions. This generates a huge amount of application data. To this end, modern dashboard and reporting tools can be used for data visualization and system monitoring. These tools help administrators visualize sales performance, monitor customer feedback, and analyze system activities efficiently. However, current web application visualization tools may show poor performance in functionality, scalability, and real time response. We can observe that modern

online systems have produced many challenges for the development of hardware and software technologies which leads to cloud computing, distributed processing, responsive UI rendering, and scalable system architecture. To overcome these issues, more advanced computational models and optimized software techniques are required.

D. Information Security

In online food ordering systems massive amounts of user, order, and transaction data are stored, processed, and analyzed for efficient system management and customer service. All organizations have different policies to safeguard their sensitive information. Preserving customer information and transaction data is a major issue in online food ordering systems. There is a huge security risk associated with web-based applications. Therefore, information security is becoming a major challenge in online food ordering systems. Security of these applications can be enhanced by using authentication, authorization, encryption, and secure session management techniques. Various security measures that online applications face are large-scale network traffic, multiple user access, secure payment processing, real-time security monitoring, and lack of advanced intrusion prevention systems. The security challenges caused by modern web applications have attracted the attention of information security researchers.

Therefore, attention has to be given to develop multi-level security policies and advanced protection systems for online food ordering applications. Although much research has been carried out to secure web applications, it still requires significant improvement. The major challenge is to develop a multi-level secure and privacy-preserving data management model for

online food ordering systems.

III. OPEN RESEARCH ISSUES IN ONLINE FAST-FOOD ORDERING SYSTEM

Online food ordering systems and web application technology are becoming important research focal points in industries and academia. Modern web applications aim at efficient order management, secure transaction processing, customer data management, and intelligent service delivery. Applications of online food ordering systems include restaurant management, customer relationship management, secure payment systems, real-time order tracking, recommendation systems, cloud deployment, and data analysis. Effective integration of web technologies and intelligent processing systems will result in improved customer experience, optimized business operations, and better decision-making processes. Main focus of this section is to discuss open research issues in online food ordering systems. The research issues pertaining to online food ordering applications are classified into broad categories namely cloud computing, intelligent automation, performance optimization, real-time processing, and information security. However, it is not limited to these issues. More research opportunities related to modern web applications and scalable system architectures are continuously being explored by researchers and industries.

A. Cloud-Based Deployment and Scalability

Internet technologies have restructured global communication, online businesses, customer services, and digital transactions. Currently, web applications are becoming capable of handling large-scale user interactions through cloud computing and distributed systems. Thus, online food ordering systems are becoming an important part of modern digital services, similar to how internet applications

transformed traditional business operations. Cloud computing is attracting the attention of recent researchers for its promising opportunities and challenges. It has an imperative economic and technical impact for the future construction of web applications, online services, and communication technologies. The future vision is that all online systems will be connected, scalable, and intelligently managed through cloud infrastructure. Moreover, cloud computing presents challenges in scalability, server performance, and real-time request processing. In a broader sense, just like the internet, cloud-based systems enable applications to exist in multiple geographical locations and facilitate services ranging from small applications to large enterprise systems. Conversely, it is still challenging to manage scalable online applications efficiently, including database synchronization, load balancing, and distributed processing. Several diversified technologies such as cloud computing, distributed databases, caching systems, and scalable backend architectures can be incorporated together to improve the data management and performance of large-scale online food ordering applications. Managing large numbers of users and processing continuous streams of order transactions is one of the biggest challenges that web application developers are facing. Therefore, it is essential to develop scalable infrastructure to process application requests efficiently. Online food ordering systems generate continuous streams of customer and transaction data, and developers can build intelligent systems to extract useful information from these data using optimized backend processing and data analysis techniques. Understanding these streams of application data and analyzing them efficiently to improve customer experience is a challenging issue and it leads to scalable web application research. Online food ordering systems have

originated from modern web technologies such as database management, authentication systems, cloud computing, session handling, and scalable backend architectures.

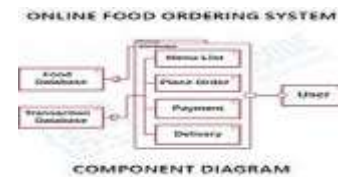


Fig.2: Cloud-Based Online Food Ordering System Architecture

In general, the system consists of four segments such as user management, order processing, database management, and service delivery. In the user management phase, customer registration and authentication are handled using secure backend technologies. The application data are stored in relational databases and efficient backend systems are generally designed based on optimized application architecture. Data processing and order management are important for obtaining meaningful information from application databases. Order processing is a mechanism that manages customer orders, payment details, food item management, and delivery tracking systems. The final phase is to provide efficient service delivery and customer satisfaction through optimized online food ordering systems. It is the ultimate goal of online food ordering applications. The online food ordering system is continuously improved through performance optimization, scalability enhancements, and secure application management. There are many issues, discussions, and researches in this area of web application systems. It is beyond the scope of this paper. For better visualization, online food ordering system architecture is depicted in Figure 3.



Fig.3: Online Food Ordering System Architecture

B. Cloud Computing for Online Food Ordering System

The development of cloud computing and virtualization technologies has made modern web applications more scalable, accessible, and affordable. Computing infrastructures managed through cloud platforms allow systems to behave like high-performance applications with flexible configuration options such as server resources, storage capacity, memory management, and operating system support. The use of cloud platforms in web applications is known as cloud computing, which has become one of the most important technologies for scalable online systems. Online food ordering systems and cloud computing technologies are developed with the objective of providing scalable infrastructure and on-demand availability of resources and services. Cloud computing manages large amounts of application and transaction data through virtualization and distributed computing technologies. The benefits of utilizing cloud computing include providing resources when there is demand and paying only for the resources required for application deployment and maintenance. Simultaneously, it improves system availability, scalability, and operational cost reduction. Open challenges and research issues related to cloud computing and web applications include data management, database scalability, real-time request handling, data storage, backend

processing, and resource management. Therefore, cloud computing helps in developing scalable business models for online food ordering applications with flexible infrastructure and deployment tools. Online food ordering applications using cloud computing should support real-time order processing, scalable backend services, and efficient database management. The cloud environment should provide tools that allow developers and administrators to monitor application performance, manage order transactions, and process customer requests efficiently. This can help to solve large-scale application problems that may arise in restaurant management and online service platforms. In addition to this, cloud computing should also support scaling of applications using modern technologies such as distributed databases, caching systems, containerization, and microservice architectures. Cloud computing provides a flexible framework for deploying online food ordering applications. Depending on application requirements, developers can use cloud service providers such as Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). Another advantage of cloud computing is cloud storage, which provides an effective solution for storing large amounts of application and customer data.

However, the major challenges are related to security, privacy protection, database synchronization, and hosting sensitive customer information on public cloud servers. All these issues will continue to influence the future development of cloud-based online food ordering systems.

C. Intelligent Computing and Automation for Online Food Ordering Systems

Intelligent computing is a technique inspired by modern automated systems to address complex real-world problems. Modern web applications are self-managed through optimized backend processing and scalable application architecture without complete



manual control. Intelligent optimization mechanisms search and find optimal service solutions by considering processing cost, database management, and service maintenance. These techniques are developed using intelligent algorithms and scalable computing models to conduct computational operations involving storing, retrieving, and processing of application data. A significant feature of such computing is that it integrates intelligent processing techniques to perform computational functions and provide efficient system performance. These systems are more suitable for scalable online food ordering applications. Huge amounts of application and transaction data are generated from various web platforms due to the rapid growth of digital technologies. Analyzing these data and categorizing customer activities, order records, payment transactions, and delivery information requires intelligent analytics from developers and system administrators. Proliferation of technologies are emerging such as cloud computing, intelligent automation, scalable backend architectures, and real-time processing systems whereas efficient data management can be achieved only by selecting suitable platforms to process application data and provide cost-effective solutions. Intelligent computing techniques serve a key role in efficient data analysis and application optimization for online food ordering systems. These algorithms help in managing large amounts of customer and transaction data due to their optimization capabilities. The major advantages are simplicity and rapid convergence toward efficient solutions while handling order processing and customer service operations. Some application improvements using intelligent computing techniques were discussed in various research works. From the discussions, we can observe that intelligent computing models provide smarter system interactions,

reduce processing overhead, and help in handling application complexities efficiently. Hence, it is believed that future intelligent technologies may help in managing scalable online food ordering systems to a large extent.

D. Advanced Computing Technologies for Online Food Ordering Systems

Advanced computing technologies provide high-performance processing capabilities and scalable system architectures for handling complex application operations. Modern computing systems can process large amounts of application and transaction data simultaneously and improve overall system efficiency. This advancement in computing

Technologies may help solve problems that are difficult for traditional web application infrastructures, especially large-scale online food ordering systems. Modern computing techniques provide a way to integrate intelligent processing models with scalable application architectures. In traditional systems, information is processed using standard sequential processing mechanisms. On the other hand, advanced computing technologies support parallel processing, distributed architectures, and optimized computational operations. These technologies can significantly improve backend processing speed, database management, and real-time order handling capabilities. As online food ordering systems continue to grow, handling massive amounts of customer requests, transaction records, payment processing, and delivery tracking becomes increasingly challenging. Advanced computing technologies can help improve application scalability, processing performance, and efficient resource utilization compared with traditional computing systems. Therefore, future development of scalable and intelligent computing infrastructures is important for improving online food ordering systems and

solving complex application management problems efficiently.

IV. TOOLS FOR ONLINE FOOD ORDERING SYSTEM DEVELOPMENT

Large numbers of tools and technologies are available to develop modern web applications. In this section, we discuss some current technologies for developing online food ordering systems with emphasis on important development tools such as ASP.NET Core MVC, SQL Server, and Visual Studio. Most of the available technologies concentrate on backend processing, database management, frontend development, and real-time application services. Most backend application development tools are based on scalable web technologies such as ASP.NET Core, Entity Framework Core, and RESTful APIs. Real-time application features are mostly implemented using technologies such as SignalR and cloud-based notification systems. Interactive user interfaces allow customers to directly interact with the application in real time for food ordering, payment processing, and order tracking. Frontend technologies such as HTML, CSS, JavaScript, Bootstrap, and Razor Views help in building responsive and user-friendly interfaces. Database technologies such as SQL Server provide efficient storage and management of customer, menu, and transaction data. These tools help developers in building scalable online food ordering applications. A typical workflow of an online food ordering system includes user registration, authentication, menu management, cart operations, order processing, payment handling, and order tracking. The complete application architecture and workflow are depicted in Figure 4.



Fig. 4: Workflow of Online Fast-Food

A.ASP.NET Core MVC and SQL Server

One of the most widely used software platforms for modern web application development is ASP.NET Core MVC with SQL Server. It consists of ASP.NET Core framework, MVC architecture, Entity Framework Core, SQL Server database, and Razor View Engine. ASP.NET Core MVC is a structured web development framework used for building scalable and maintainable applications based on separation of concerns.

The MVC architecture is implemented in three components such as Model, View, and Controller. The Model manages application data and database operations, the View handles the user interface and presentation layer, and the Controller processes user requests and controls application flow. ASP.NET Core MVC works efficiently with frontend and backend components to process customer requests, manage food ordering operations, and handle secure authentication mechanisms. SQL Server is used as the relational database management system for storing customer details, menu records, orders, and transaction data. Moreover, ASP.NET Core MVC and SQL Server work as powerful development technologies for solving modern web application problems. They are also helpful in secure data management, scalable backend processing, and efficient application performance.

B. Entity Framework Core

Entity Framework Core is a modern Object Relational Mapping (ORM) framework used for scalable and efficient database management in ASP.NET Core applications. It provides simplified and intelligent data access techniques for large-scale web applications. Core functionalities of Entity Framework Core include database operations, CRUD functionality, query processing, relationship management, migration handling, and data validation.

C. ASP.NET Core MVC Framework

ASP.NET Core MVC is an open-source web application development framework built for high performance processing, scalability, and modern web application development. It is easy to use and supports the development of secure and responsive web applications. ASP.NET Core allows developers to quickly build applications using C#, Razor Views, HTML, CSS, and JavaScript technologies.

In addition to standard web application features, it supports authentication systems, database integration, RESTful APIs, session management, cloud deployment, and real-time application services. ASP.NET Core works efficiently with SQL Server and Entity Framework Core infrastructure to provide enhanced functionality and scalable backend processing. ASP.NET Core MVC consists of components namely Models, Views, and Controllers. The Controller serves as the main component for processing user requests and application logic. The Model manages database operations and application data, while the View handles the frontend user interface and presentation layer. Each application contains multiple modules responsible for customer management, menu management, cart operations, order processing, and payment handling. The various features of ASP.NET Core MVC are listed below:

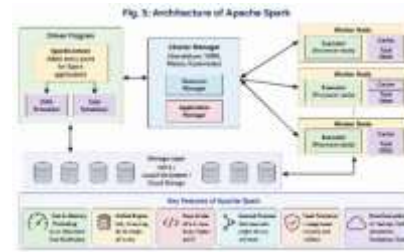


Fig. 5: Architecture of ASP.NET Core MVC Application

- The prime focus of ASP.NET Core MVC includes scalable web application development, secure backend processing, and efficient database management.
- The foremost advantage is that in addition to web application development, it also supports authentication systems, RESTful APIs, cloud deployment, session management, and real-time application services.

D. Visual Studio and Distributed Application Development

Visual Studio is another popular development platform for implementing scalable and distributed web applications for handling large application databases and backend services. It consists of multiple development tools, debugging utilities, project management systems, and integrated deployment support. A developer can use the resources of modern computing systems to build and run applications in an efficient and scalable way. Indeed, Visual Studio allows developers to work with multiple technologies such as ASP.NET Core MVC, SQL Server, Entity Framework Core, cloud services, and frontend frameworks. The major advantage is that developers do not need to manage complex low-level configurations manually because the platform provides integrated development support and automation features. A modern web application runs through interconnected backend modules, database systems, controllers, services, and frontend interfaces. Therefore, Visual Studio provides a large number of functionalities including



project management, application debugging, database integration, server deployment, performance monitoring, error handling, and visualization of application workflows. Additionally, it supports authentication systems, cloud deployment services, API development, and scalable backend architecture for developing efficient online food ordering systems and enterprise-level web applications.

E. SignalR and Real-Time Processing

SignalR is a distributed and real-time communication framework for processing live application data and user interactions. It is specially designed for real-time communication in contrast with traditional request-response systems which mainly process requests sequentially. Additionally, it is easy to configure and operate, scalable, and fault-tolerant to provide efficient application performance. The real-time processing architecture is similar to modern distributed web application systems. In real-time applications, users can perform different operations such as live order tracking, instant notifications, real-time updates, and customer communication. The major difference between traditional backend processing and real-time processing is that traditional requests finish after execution whereas real-time communication continuously processes and updates application data until the connection is terminated. A real-time application system consists of two kinds of components such as server-side services and client-side interfaces. The server-side services manage communication channels, process requests, and distribute updates to connected users. The client-side interfaces receive and display real-time information dynamically. The server manages request distribution, task execution, and monitoring of the complete communication system. Real-time processing systems also support instant notification services, order tracking systems, live dashboard updates, and

dynamic user interactions. In addition, the system can start, process, and terminate communication sessions based on user requests and application requirements. The complete application workflow is partitioned and distributed among multiple backend services and frontend modules to improve scalability and processing efficiency in online food ordering systems.

F. SQL Server Management Studio (SSMS)

SQL Server Management Studio is another powerful system for interactive database management and analysis in modern web applications. It provides flexibility to support multiple database operations, SQL queries, data management tasks, and server administration functionalities. It is specially designed to manage structured application data efficiently.

SSMS supports database creation, table management, query execution, stored procedures, backup management, and server monitoring. It also has the capability to process large amounts of customer, order, and transaction records efficiently. SQL Server uses relational database architecture to store and process application data securely.

G. Bootstrap

Bootstrap is an open-source frontend framework used for developing responsive and user-friendly web interfaces. It is a scalable frontend development platform and has the capability to create responsive layouts for modern web applications across different devices and screen sizes. One important property of Bootstrap is that it allows developers to quickly design application interfaces without writing complex CSS code from scratch. In addition to this, it also provides ready-made components such as navigation bars, forms, buttons, cards, tables, and responsive grids for efficient frontend development. These responsive interfaces can be integrated easily with ASP.NET Core MVC applications



to improve user interaction and overall application appearance.

H. Visual Studio Code

Visual Studio Code is a lightweight and intelligent code editor developed for modern web application development. It combines modern development tools with efficient coding support and debugging capabilities. It helps developers to write, manage, debug, and analyze application code efficiently through an interactive development environment.

Visual Studio Code supports multiple programming languages such as C#, JavaScript, HTML, CSS, and SQL. Its major features include intelligent code suggestions, debugging tools, extension support, integrated terminal, and project management functionalities.

V. SUGGESTIONS FOR FUTURE WORK

The amount of application and transaction data collected from various online platforms and web applications across different business domains is increasing rapidly every year. These data have no practical utility unless they are analyzed to obtain meaningful information. This necessitates the development of technologies and techniques that can facilitate efficient online food ordering system management and application analysis. The development of modern computing systems and scalable web technologies has become highly beneficial for implementing intelligent and automated application systems. The transformation of application data into meaningful business information is not an easy task for high-performance and large-scale web application processing, including efficient backend processing, database optimization, and scalable frontend management. Moreover, application data may involve inconsistencies, missing values, duplicate records, and uncertain transaction details in many different forms. Various technologies such as relational databases, intelligent backend systems, cloud

computing, caching systems, and scalable application architectures have been found useful for representing and managing application data efficiently. These technologies are also highly beneficial for application analysis and system optimization. More importantly, these new challenges may sometimes affect the performance, efficiency, and scalability of modern web application systems. Improper handling of application data may lead to information loss and reduced system reliability. This creates many research issues in both industries and research communities related to efficient data handling, scalable application development, and secure information processing. In addition, fast request processing while achieving high application performance and efficient resource utilization is another important issue.

VI. CONCLUSION

In recent years, large amounts of application and transaction data are generated continuously through modern web applications and online service platforms. Managing and analyzing these data efficiently is challenging for developers and organizations. To this end, this paper discusses various research issues, challenges, technologies, and tools used in developing scalable online food ordering systems. From this study, it is understood that every web application technology has its individual advantages and application focus. Some technologies are designed mainly for backend processing whereas some are more suitable for real-time communication, frontend responsiveness, database management, or cloud deployment. Different technologies used for online food ordering systems include ASP.NET Core MVC, SQL Server, Entity Framework Core, cloud computing, intelligent automation, real-time processing systems, and scalable backend architectures. We believe that in future developers

and researchers will pay more attention to scalable application development, intelligent automation, cloud technologies, and secure backend systems to solve modern web application problems more effectively and efficiently.

REFERENCES

- [1] Microsoft Documentation, "ASP.NET Core MVC Overview," Microsoft Learn, 2025.
- [2] Microsoft Documentation, "Entity Framework Core," Microsoft Learn, 2025.
- [3] Microsoft Documentation, "SQL Server Documentation," Microsoft Learn, 2025.
- [4] Microsoft Documentation, "ASP.NET Core Security and Authentication," Microsoft Learn, 2025.
- [5] Microsoft Documentation, "JWT Authentication in ASP.NET Core," Microsoft Learn, 2025.
- [6] A. Freeman, *Pro ASP.NET Core MVC*, 9th ed., Apress, 2024.
- [7] J. Liberty and D. Hurwitz, *Programming ASP.NET Core*, O'Reilly Media, 2023.
- [8] R. Kumar and S. Patel, "Online Fast-Food Ordering System Using ASP.NET Core MVC," *International Journal of Computer Applications*, vol. 15, no. 3, pp. 45–52, 2024.
- [9] P. Sharma and A. Singh, "Web-Based Restaurant Management System," *IEEE International Conference on Smart Computing*, 2023, pp. 120–126.
- [10] S. Das and R. Mishra, "Secure Authentication Techniques for Modern Web Applications," *International Journal of Web Engineering*, vol. 11, no. 2, pp. 78–85, 2024.
- [11] T. Brown, "Cloud Deployment Techniques for ASP.NET Core Applications," *Journal of Cloud Computing*, vol. 9, no. 1, pp. 50–59, 2024.
- [12] M. Gupta and R. Roy, "Performance Optimization in ASP.NET Core MVC Applications," *International Journal of Software Engineering*, vol. 10, no. 4, pp. 33–41, 2024.
- [13] Microsoft Documentation, "Deploy and Host ASP.NET Core Applications," Microsoft Learn, 2025.
- [14] Microsoft Documentation, "Entity Framework Core Migrations," Microsoft Learn, 2025.
- [15] Microsoft Documentation, "ASP.NET Core Identity," Microsoft Learn, 2025.
- [16] Microsoft Documentation, "Razor Pages and MVC in ASP.NET Core," Microsoft Learn, 2025.
- [17] I. Sommerville, *Software Engineering*, 11th ed., Pearson Education, 2023.
- [18] R. Pressman and B. Maxim, *Software Engineering: A Practitioner's Approach*, 9th ed., McGraw-Hill Education, 2024.
- [19] Microsoft Documentation, "Introduction to ASP.NET Core," Microsoft Learn, 2025.
- [20] Microsoft Documentation, "Dependency Injection in ASP.NET Core," Microsoft Learn, 2025.
- [21] Microsoft Documentation, "Working with SQL Server and ASP.NET Core," Microsoft Learn, 2025.