Assignment 2: Develop a case study analysing the implementation of SDLC phases in a real-world engineering project. Evaluate how Requirement Gathering, Design, Implementation, Testing, Deployment, and Maintenance contribute to project outcomes?

Case Study: Online Food Ordering System for Small Restaurant

1. **Requirement Gathering:**

   - In Requirement Gathering has the discussions between the restaurant owner and the development team to outline the requirements for the online food ordering system.
   - Key requirements included menu management, user registration and authentication, ordering functionality, payment processing, and order tracking.

2. **Design:**

   - During the design phase, wireframes and mock-ups were created to visualize the layout and user interface of the online food ordering system.
   - The design aimed for simplicity and ease of use, with clear navigation and intuitive order placement process.

3. **Implementation:**

   - Using agile development methodologies, the development team divided the project into smaller tasks and began implementing the online food ordering system.
   - Frontend developers used HTML, CSS, and JavaScript or any Frameworks to build the user interface, with responsiveness Website to use in different devices.
   - Backend developers use frameworks like Flask or Express.js to handle server-side logic, including user authentication, menu management, and order processing.

4. **Testing:**

   - Testing was done throughout the development process to ensure the functionality and usability of the online food ordering system.
   - Functional testing verified that users could browse the menu, add items to the cart, place orders, and make payments without errors.
   - Usability testing focused on user experience and interface design
   - compatibility testing focused on the system worked across different web browsers and devices.

5. **Deployment:**

- Once testing was complete and the online food ordering system met the requirements, it was deployed to a production team.
- Deployment involved configuring web servers, databases to ensure a stable and secure ordering platform.
- User acceptance testing was conducted to verify that all features in a live environment.

6. **Maintenance:**

- Post-deployment, the focus shifted to maintaining and supporting the online food ordering system.
- Regular updates were released, improve website performance, and address user feedback.

Evaluation of SDLC Phases:

1. **Requirement Gathering:**
   Clear understanding of requirements ensured the online food ordering system met the needs of the restaurant owner and customers for efficient ordering

2. **Design:**
   User friendly design and order placement functionality.

3. **Implementation:**
   Agile development approach enabled iterative development and timely delivery of features, ensuring a responsive and reliable ordering platform.

4. **Testing:**
   Testing verified the functionality and usability of the online food ordering system, minimizing errors etc.

5. **Deployment:**
   Smooth deployment process ensured a stable and secure ordering platform for the customers.

6. **Maintenance:**
   user-friendly in online ordering experience for customers.