**Software Development Life Cycle (SDLC) for eKart Web App**

**Requirement Gathering**

**Objective**: Gather and document functional and non-functional requirements for the eKart web application.

**Activities**:

* Conduct interviews with stakeholders (business owners, users, administrators).
* Gather user stories, use cases, and functional specifications.
* Define system performance, security, and scalability requirements.

**Planning**

**Objective**: Define the goals and scope of the eKart web application, including its features, target audience, and business requirements.

**Activities**:

* Conduct market research and competitor analysis.
* Define project timelines, milestones, and budget.
* Formulate a project plan and resource allocation.

**Design**

**Objective**: Design the architecture, database schema, user interface, and system components of the eKart web application.

**Activities**:

* Create wireframes, mockups, and prototypes for user interface design.
* Define the overall system architecture (client-server, RESTful APIs, database design).
* Detail technical specifications and integration points.

**Development**

**Objective**: Implement the eKart web application according to the defined requirements and design specifications.

**Activities**:

* Write code using appropriate programming languages (e.g., C#, HTML/CSS).
* Use frameworks and libraries (e.g., ASP.NET) as per design decisions.
* Follow coding standards, version control practices (e.g., Git), and Agile/Scrum methodologies for iterative development.

**Testing**

**Objective**: Ensure the quality and reliability of the eKart web application through comprehensive testing.

**Activities**:

* Plan and execute various types of testing: unit testing, integration testing, system testing, performance testing, and security testing.
* Use automated testing tools (e.g., Jest, Selenium) to automate repetitive tests and ensure consistent results.
* Conduct user acceptance testing (UAT) with actual users to validate functionality and usability.

**Deployment**

**Objective**: Deploy the eKart web application to production servers and make it available for users.

**Activities**:

* Prepare deployment scripts and configurations.
* Perform deployment in stages (e.g., staging environment, production environment).
* Monitor deployment for any issues and ensure smooth transition from development to production.

**Maintenance**

**Objective**: Provide ongoing support, maintenance, and updates to the eKart web application.

**Activities**:

* Monitor application performance, uptime, and user feedback.
* Address bug fixes, security patches, and scalability enhancements as required.
* Continuously improve the application based on analytics and user behavior insights.