

AGILE SDLC MODEL WITH SCRUM METHOD IN DEVELOPING A MOBILE POINT-OF-SALE APPLICATION THAT SCANS PRODUCT QR-CODE THAT ESTIMATES THE OVERALL PRODUCT PURCHASE OF THE CUSTOMER: A CASE STUDY FOR 'GIFTAHOLIC SHOP'

SDLC Model (Agile + Scrum) for Giftaholic Shop POS System

1. Planning

- **Define the problem:** Manual sales tracking, error-prone receipts, slow checkout.
- **Objectives:** Automate checkout via QR scanning, improve inventory control, provide sales reports.
- **Scrum Setup:** Assign roles – *Product Owner* (Shop Owner), *Scrum Master* (Team Leader), *Development Team* (Group Members).
- **Deliverable:** Product Backlog & Sprint Schedule.

2. Requirement Analysis

- Gather requirements from Giftaholic Shop owner and staff.
- Identify **functional requirements** (QR scanning, discounts, inventory, reporting).
- Identify **non-functional requirements** (usability, portability, reliability).
- Break requirements into **user stories** for backlog.
- **Deliverable:** Software Requirement Specification (SRS) & Product Backlog.

3. Design

- **System Architecture:** Mobile app + admin panel + database.
- **Database Design:** Products, sales, inventory, and users.
- **Interface Design:** Checkout screen, admin dashboard, reports module.

- **Wireframes & Workflow:** Checkout workflow, inventory management workflow.
- **Deliverable:** System Design Document & Wireframes.

4. Development (Agile Sprints with Scrum)

- **Sprint 1 – Core Functions**
 - QR Code Scanning
 - Automatic Price Computation
 - Basic Receipt Issuance
 - *Sprint Review:* Staff tests checkout speed.
- **Sprint 2 – Sales & Inventory**
 - Discounts & Price Adjustments
 - Manual Price Entry for unlisted products
 - Inventory Stock Tracking
 - *Sprint Review:* Owner checks inventory accuracy.
- **Sprint 3 – Management Tools**
 - Sales Reports (daily/weekly/monthly)
 - Admin Panel (product & user management)
 - Dashboard for monitoring sales & stock
 - *Sprint Review:* Owner evaluates business insights.
- **Deliverable:** Working POS increments after every sprint.

5. Testing

- **Unit Testing:** Each feature tested after development.
- **Integration Testing:** Ensure checkout, discounts, and inventory work together.
- **User Acceptance Testing (UAT):** Giftaholic Shop staff use the POS in real sales.
- **Deliverable:** Test Reports & Bug Fixes.

6. Implementation

- Deploy final version of POS system in the shop.
- Train staff on scanning, checkout, and using reports.
- Pilot run in live sales environment.
- **Deliverable:** Fully deployed POS system.

7. Maintenance

- Fix bugs reported by shop staff.
- Update system with new features (e.g., loyalty program, multi-branch support).
- Maintain database backups and security updates.
- **Deliverable:** Updated versions & maintenance logs.