
# Birzeit University

Department of Computer Science

## COMP433: SOFTWARE ENGINEERING

## Requirement Engineering

### Mobile Phones Shop

**Team Members:**

| | | | |
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**Date:** December 16, 2025

## 1. Task 2.1: User Requirements

**Lead:** Mohammad Fareed
**Contributors:** Ahmad Hamdan (discussion), Omar Husien (review), Ismail Tarteer (writing), Sohaib Badaha (finalization)

**UR-01** The system shall allow customers to search for products using keywords, and filter results by brand, category, price range, and availability.

**UR-02** The system shall allow customers to view complete product details including specifications, price, and images, and should provide simple product recommendations based on customer needs such as daily use, photography, or gaming.

**UR-03** The system shall allow customers to add products to a shopping cart, modify product quantities, remove items from the cart, and confirm the checkout before placing an order.

**UR-04** The system shall allow customers to enter a coupon code and select a payment method during checkout, including cash on delivery and bank card payment.

**UR-05** The system shall allow customers to view their order history and track the current order status including placed, processed, shipped, and delivered.

**UR-06** The system shall allow customers to enter the delivery address information and view the estimated delivery time for supported delivery areas within the West Bank.

**UR-07** The system shall allow the store manager (admin) to add, edit, and remove products, update prices, manage inventory quantities, and mark products as out of stock.

**UR-08** The system shall allow customers to contact customer support for inquiries or issues related to payment or delivery, and shall allow support staff to respond to and track each case until it is resolved.

**UR-09** The system shall be fast, reliable available, secure, and accessible across modern desktop and mobile web browsers.

## 2. Task 2.2: System Requirements

**Lead:** Ahmad Hamdan & Sohaib Badaha
**Contributors:** Mohammad Fareed (review), Omar Husien (discussion), Ismail Tarteer (finalization)

**SR-01 (Derived from UR-01)**

- SR-01.1 The system shall store product information, including name, category, brand, price, and availability status.
- SR-01.2 The system shall display products grouped by category or brand.
- SR-01.3 The system shall allow users to search for products by product name, brand, or model.
- SR-01.4 The system shall allow users to filter product results by category, brand, price range, and availability.
- SR-01.5 The system shall mark products with zero inventory quantity as out of stock.

**SR-02 (Derived from UR-02)**

- SR-02.1 The system shall display a product details page containing specifications, price, images, and available quantity.
- SR-02.2 The system shall retrieve and display related accessories associated with the selected product.
- SR-02.3 The system shall recommend products based on predefined rules that map categories to product attributes.

**SR-03 (Derived from UR-03)**

- SR-03.1 The system shall allow customers to add selected products to a shopping cart.
- SR-03.2 The system shall allow customers to alter product quantities or remove products from the shopping cart.
- SR-03.3 The system shall calculate and display the cart subtotal, delivery cost, and final total amount.
- SR-03.4 The system shall validate product availability before allowing order confirmation.

**SR-04 (Derived from UR-04)**

- SR-04.1 The system shall provide an input field during checkout for customers to enter a coupon code.
- SR-04.2 The system shall validate the entered coupon code and apply the corresponding discount if the code is valid.
- SR-04.3 The system shall support cash on delivery as a payment method.
- SR-04.4 The system shall integrate with an external payment gateway to support card payments.
- SR-04.5 The system shall generate and store an electronic invoice for each confirmed order.
- SR-04.6 The system shall not store sensitive payment data such as full card numbers.

**SR-05 (Derived from UR-05)**

- SR-05.1 The system shall generate a unique order identifier for each confirmed order.
- SR-05.2 The system shall assign one of the following statuses to each order: placed, processing, shipped, delivered, or canceled.
- SR-05.3 The system shall allow authorized staff to update the order status.
- SR-05.4 The system shall allow customers to view order history and current order status.
- SR-05.5 The system shall record timestamps for each order status change.

**SR-06 (Derived from UR-06)**

- SR-06.1 The system shall allow customers to enter delivery address details including city, street, and phone number.
- SR-06.2 The system shall validate that the delivery address is within supported areas in the West Bank.
- SR-06.3 The system shall calculate and display an estimated delivery time.
- SR-06.4 The system shall store delivery details as part of the order record.

**SR-07 (Derived from UR-07)**

- SR-07.1 The system shall provide role-based authentication for store administrators.
- SR-07.2 The system shall allow administrators to add, edit, or remove product records.
- SR-07.3 The system shall allow administrators to update product prices and inventory quantities.

- SR-07.4 The system shall log inventory changes with date, time, and administrator identifier.
- SR-07.5 The system shall restrict access to administrative functions to authorized users only.

**SR-08 (Derived from UR-08)**

- SR-08.1 The system shall provide a support request submission interface for customers.
- SR-08.2 The system shall generate a unique support ticket identifier for each request.
- SR-08.3 The system shall allow support staff to respond to customer tickets.
- SR-08.4 The system shall allow support staff to update ticket status as open, in progress, or resolved.
- SR-08.5 The system should store all support ticket interactions for future reference.

**SR-09: Non-Functional System requirements (Derived from UR-09)**

- **NFR-01 (Performance)** The system shall display product search and filtering results within three seconds under normal operating conditions.
- **NFR-02 (Availability)** The system shall be available for use at least 99% of the time, excluding scheduled maintenance periods.
- **NFR-03 (Security – Authentication)** The system shall require authentication for all administrative and customer support users.
- **NFR-04 (Security – Data Protection)** The system shall store all user passwords using secure hashing mechanisms.
- **NFR-05 (Usability)** The system shall be accessible using modern web browsers on both desktop and mobile devices.

## 3. Task 2.3: Effort + Time Estimation

**Lead:** Omar Husien
**Contributors:** Mohammad Fareed (discussion), Ahmad Hamdan (review), Ismail Tarteer (finalization), Sohaib Badaha (writing)

This estimation uses a simplified person-week method (pw). 1 pw = one person working full-time for one week. A 30% buffer is added to the schedule to the weekend since the week is 5 days.

| **UR** | **Estimated Effort** | **Estimated No. of Developers** | **Total Effort** |
|---|---|---|---|
| UR-01 | 2 pw | 1 | $= 2 \times 1 = 2$ pw |
| UR-02 | 2 pw | 1 | $= 2 \times 1 = 2$ pw |
| UR-03 | 3 pw | 2 | $= 3 \times 2 = 6$ pw |
| UR-04 | 2 pw | 1 | $= 2 \times 1 = 2$ pw |
| UR-05 | 2 pw | 1 | $= 2 \times 1 = 2$ pw |
| UR-06 | 2 pw | 1 | $= 2 \times 1 = 2$ pw |
| UR-07 | 4 pw | 2 | $= 4 \times 2 = 8$ pw |
| UR-08 | 2 pw | 1 | $= 2 \times 1 = 2$ pw |
| **Total effort / avg** | $(2+2+3+2+2+2+4+2) = 19$ **pw** | $(1+1+2+1+1+1+2+1)/8 = 1.25$ **dev on avg** | $(2+2+6+2+2+2+8+2) = 26$ **pw** |
| **Schedule time (30%)** | $19 \times 1.30 = 24.7 \approx 25$ **w (min time)** | | $26 \times 1.30 = 33.8 \approx 34$ **w (max time)** |
| **Cost** | | **Avg salary = 250 USD / week** | $250 \times 34 = 8500$ **USD** |
| **Profit margin min = 10% max = 30%** | | | **Min cost:** $8500 \times 1.10 = 9350$ USD **Max cost:** $8500 \times 1.30 = 11050$ USD |

## 4. Minutes of Meetings

**Lead:** Ismail Tarteer
**Contributors:** Mohammad Fareed (notes), Ahmad Hamdan (discussion), Omar Husien (review), Sohaib Badaha (finalization)

### Meeting 1

- **Date & Time:** Saturday, 6 Dec 2025 11:00 AM
- **Location:** Face-to-face (Birzeit University Campus)
- **Attendees:**
  - Developer Group: Mohammad Fareed, Ahmad Hamdan, Omar Husien, Ismail Tarteer, Sohaib Badaha
  - Customer Group: Tasneem Shelleh, Eman Hamed, Hala Mosafer, Shatha Khdair, Sadeel Assi
- **Topics Discussed:**
  - General overview of the online mobile phones and accessories store.
  - Discussion of the main services provided to customers.
  - Customer buying process: browse → select → add to cart → checkout → order processing → delivery.
  - Payment methods: cash on delivery and bank card payment
  - Delivery process, supported delivery areas in the West Bank, and expected delivery time (1–2 days).

### Meeting 2

- **Date & Time:** Thursday, 11 Dec 2025 5:00pm
- **Location:** Online
- **Attendees:**
  - Developer Group: Mohammad Fareed, Ahmad Hamdan, Omar Husien, Ismail Tarteer, Sohaib Badaha
  - Customer Group: Tasneem Shelleh, Eman Hamed, Hala Mosafer, Shatha Khdair, Sadeel Assi
- **Topics Discussed:**
  - Review of the drafted user requirements.
  - Clarification of missing or unclear requirements.
  - Discussion of inventory behavior when products are out of stock.
  - Discussion of implementing a coupon-based discount feature during checkout.
  - Discussion of order status stages and customer visibility.
  - Handling customer support requests and tracking issues until resolution.