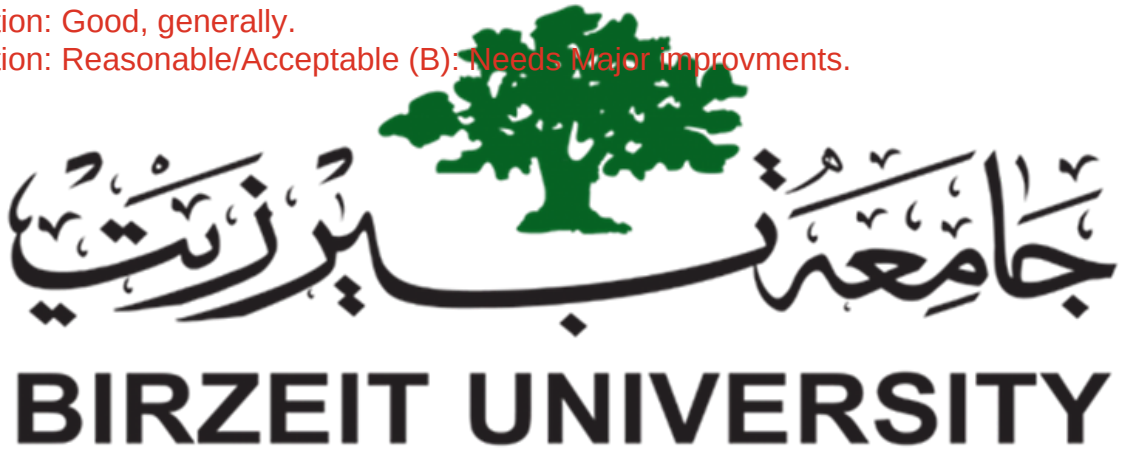
Feedback: - User requirements: many are written in system perspective. Many contains more than one action. wrong using of shall/should.
- System requirements: mentioning UI spec. many redundant. some vague and ambiguous.
- Effort estimation: Good, generally.
Overall Evaluation: Reasonable/Acceptable (B): Needs Major improvments.



Birzeit University

Department of Computer Science

COMP433: SOFTWARE ENGINEERING

Requirement Engineering

Mobile Phones Shop

Team Members:

1.	Ahmad Hamdan	1210241	Section 3
2.	Mohammad Fareed	1212387	Section 3
3.	Omar Husien	1212739	Section 3
4.	Ismail Tarteer	1211243	Section 3
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Date: December 16, 2025

many URs contains several actions/ functions! a UR or SR should include one clear specific function/action. (highlighted in BLUE)

A user requirement is one that defines an action, an ability that needs to be provided to serve its users as part of the business services. Each user requirement is unique, providing a unique business service.

B-

1. Task 2.1: User

this is UR, it should be written in a user perspective way, for example: A user shall ...

Lead: l d

Contri Ham nar Husien (review), Ismail Tarteer (writing), (fina

combines multiple actions/functions. should be only one core clear ACTION

use a more clear ACTION verb than allow.

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

unnecessary details for a UR.

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 gamin

unnecessary details for a UR.

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 ch an order.

vague. confirm the checkout? confirm the 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 delivere

what about canceled? refunded?

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.

vague. what manages includes?

UR-07 The system shall allow th (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.

this is not a User Requirment! and should be removed from URs.

As others, this UR contains two functions! customer contacts support + support staff respond case. Please, separate them.

System requirement is one that defines an action, an ability that need to provided to serve its users, detailing specific needs of ONE Specific User Requirement, to support the respective business services

B-

2. Task 2.2: System Requirements

Lead: Ahmad Hamdan & Sohaib Badaha
Contributors: Mohammad Fareed (re[illegible] (discussion), Ismail Tarteer (finalization)

UI spec. avoid using or describing UI and focus on system behavior instead. such comments are highlighted in PURPULE.

You have to write the UR then the SRs related to it, not just the heading of UR

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.

can user choose both?

- 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.

Good. clarify what happen when inventory > 0 again

SR-02 (Derived from UR-02)

vague. phrase as system providing products details including specifications, price, ...

- 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.

vague. what are those rules? define them.

SR-03 (Derived from UR-03)

redundant. same as UR.

system shall allow customers to add selected products to a shopping cart.

same as UR. it does not add a new value or a system behavior.

R-03.2 The system shall allow customers to alter product quantities or remove roducts from the shopping cart.

- SR-03.3 The system shall calculate and display the cart subtotal, delivery cost, and final total amount.

what happen after that ? add a SR that describes what the system do after checking if the product available.

R-03.4 The system shall validate product availability before allowing order confir- ation.

define what do you mean by availability.

vague. delivery cost depends on area? weight? fixed fee?

UR already said that user enters a coupon code during checkout. describe what system does with it.

This whole SR describes a UI spec, not a system behavior.

erived from UR-04)

4.1 The system shall provide an input field during checkout for customers to enter a coupon code.

- SR-04.2 The system shall validate th too vague. what makes a coupon valid? expiry date? usage limit? corresponding discount if the code is valid.

same as UR. UR already says that.

-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 electi vague. confirmed after payment? after placing order? confirmed order.
- SR-04.6 The system shall not store sensitive payment data such as full card numbers.

in requirement engineering, don't use negative phrasing.

What can be stored? last 4 digits? token?

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 o who are "authorized staff"? admin? store manager? delivery staff? es to each order: placed, processing, shipped, delivered, or can
- SR-05.3 The system shall allow authorized staff to update the order status.

Redundant. Same as UR.

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 su areas in the West Bank.

estimated delivery time calculation rules are not defined. based on city? delivery slot? stock?

- 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.

trivial. of course order needs delivery details.

SR-07 (Derived from UR-07)

Role-based belongs to authorization, not authentication.

what roles? admin? manager? what can each do?

- SR-07.1 The system shall provide role-based authentication for store administrators.

Redundant. Same as UR.

-07.2 The system shall allow administrators to add, edit, or remove product records.

Redundant. Same as UR.

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.

Same as SR7.1. also avoid negative phrasing.

SR-08 (Derived from UR-08)

what information is collected?

- 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.

who are support staff? admin role? separate role?

vague. includes messages, status changes, timestamps?

vague.

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

Do not classify into functional and non-functional, onlu user and system

- **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.

A- 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	development time longer than the semester?	**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

Good Keeping of Meeting Minutes.

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.