2.1. UC-01: Sign Up

a. Functional Description

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| UC ID and Name: | UC-01: Sign Up | | |
| Created By: | ThinhNCCE181171 | Date Created: |  |
| Primary Actor: | Guest | Secondary Actors: | None |
| Trigger: | User clicks the "Signup" button on the login page | | |
| Description: | This use case allows a new customer to create an account. The system validates the input, enforces username/email (and phone if provided) uniqueness, hashes the password, creates the account, and returns the created profile in a standardized response. The account starts with email unverified status. | | |
| Preconditions: | PRE-1: The user is not already registered with the same username or email.  PRE-2: The user management service is available and running. | | |
| Postconditions: | POST-1: A new customer account is created and persisted.  POST-2: The password is securely stored as a hash.  POST-3: The account’s emailVerified flag remains false until verification is completed.  POST-4: The system returns the created customer profile via standardized API response. | | |
| Normal Flow: | 1.0: The user opens the “Sign Up” page.  1.1: The user enters registration details (e.g., username, password, email, firstName, lastName, optional phone, dateOfBirth, marketingOptIn) and submits.  1.2: The system validates the request payload and field formats.  1.3: The system checks username uniqueness.  1.4: The system checks email uniqueness.  1.5: If phone is provided, the system checks phone uniqueness.  1.6: The system hashes the password.  1.7: The system creates and saves the new customer account.  1.8: The system returns a standardized success response with the created customer profile.  1.9: The user sees the confirmation of successful registration. | | |
| Alternative Flows: | None | | |
| Exceptions: | 1.2.E1: If required fields are missing/invalid, the system returns a validation error.  1.3.E1: If the username already exists, the system returns “Username already exists.”  1.4.E1: If the email already exists, the system returns “Email already exists.”  1.5.E1: If the phone (when provided) already exists, the system returns “Phone number already exists.”  1.7.E1: If the database operation fails, the system returns “Failed to create account.” | | |
| Priority: | High, Must. | | |
| Frequency of Use: | Frequently, when a new user wants to access the system | | |
| Business Rules: | BR-01, BR-02, BR-03, BR-04, BR-05, BR-06 | | |
| Other Information: | 1. All newly created accounts are recorded.  2. There is a mechanism to recover password or verify email after registration. | | |
| Assumptions: | Users can access the internet and web browser. | | |

b. Business Rules

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| ID | Business Rule | Business Rule Description |
| BR-01 | Unique username | Username must be unique. |
| BR-02 | Unique email | Email must be unique. |
| BR-03 | Unique phone (optional) | If provided, phone must be unique. |
| BR-04 | Password hashing | Passwords must be stored as secure hashes. |
| BR-05 | Standardized API response | Success/error responses use the standardized wrapper. |
| BR-06 | Email verification pending | New accounts remain unverified until email verification completes. |