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| **Use case name:** | **UC01 - User Registration & Login** | |
| **Scenario:** | A new or returning user wants to access their Skinnovate dashboard. | |
| **Triggering event:** | User clicks “Register” or “Login” on the Skinnovate home page. | |
| **Brief description:** | Enables new users to create an account (via email/OTP or social login) and existing users to authenticate, then redirects them to their personalized dashboard. | |
| **Actors:** | * Patient * Dermatologist * Administrator | |
| **Related use cases:** | * UC02 – AI Skin Analysis (requires user to be authenticated) * UC03 – Appointment Booking & Management * UC04 – Dermatologist Review & Treatment Update | |
| **Stakeholders:** | * End users (patients, doctors, admins) * Clinic operations team | |
| **Preconditions:** | * System is online and accessible. * For registration: user email not already in database. * For login: user already has valid credentials. | |
| **Postconditions:** | * The user is logged in and gains access to their personalized dashboard. * Access control is applied based on the user’s role (e.g., patient, doctor, administrator). | |
| **Flow of activities:** | **Actor** | **System** |
| 1. Accesses Skinnovate portal 2. Selects Register 3. Enters registration details 4. — 5. Or selects Login 6. Enters credentials 7. — | Displays “Register” and “Login” options  Prompts for email, OTP/social login, and profile data  Validates inputs; if valid, creates new User record; sends confirmation  Redirects to dashboard  Prompts for email/password  Validates credentials  On success, redirects to dashboard |
| **Exception conditions:** | * **Invalid credentials:** display error “Email or password incorrect”—allow retry. * **Registration error:** for missing/invalid fields, highlight errors and block submission until corrected. | |

Figure 1: Fully developed use case description for ***User Registration & Login***

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| **Use case name:** | **UC02 –** **AI Skin Analysis** | |
| **Scenario:** | A logged-in patient wants a quick preliminary diagnosis of a skin condition using the AI engine. | |
| **Triggering event:** | Patient selects “AI Skin Analysis” from their dashboard. | |
| **Brief description:** | Patient uploads a skin image; the system checks quality, sends it to AI, then displays the AI’s diagnosis and confidence score. | |
| **Actors:** | * Primary: Patient * Secondary: AI System (automated) | |
| **Related use cases:** | * UC01 – User Registration & Login (must be logged in) * UC03 – Appointment Booking & Management (if AI suggests consultation) | |
| **Stakeholders:** | * Patients seeking fast insights * Dermatologists (for follow-up review) | |
| **Preconditions:** | * Patient is authenticated (UC01). * Device can capture/upload high-resolution images. | |
| **Postconditions:** | * A preliminary AI diagnosis (with confidence) is recorded. * Patient can choose to book a consultation based on results. | |
| **Flow of activities:** | **Actor** | **System** |
| 1. Clicks “AI Skin Analysis” 2. Uploads skin image 3. — 4. — 5. — 6. — | Prompts for image upload  Validates image quality  If valid, forwards image to AI engine  If poor, returns error “Please upload clearer image”  Runs AI analysis (≤ 5 sec) and returns diagnosis + confidence  Displays results with option “Book Consultation” if confidence < threshold |
| **Exception conditions:** | * **Poor image quality:** reject and prompt re-upload. * **Low AI confidence:** show “Low confidence—please book consultation.” | |

Figure 2: Fully developed use case description for ***AI Skin Analysis***

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| **Use case name:** | **UC03 – Appointment Booking & Management** | |
| **Scenario:** | A patient schedules, reschedules, or cancels a clinic appointment; admins monitor and adjust bookings. | |
| **Triggering event:** | Patient navigates to “Appointments” or admin opens the daily dashboard. | |
| **Brief description:** | Allows patients to view available slots, book/reschedule/cancel appointments, and triggers emergency handling when needed; administrators oversee and adjust schedules. | |
| **Actors:** | * Primary: Patient * Secondary: Clinic Administrator | |
| **Related use cases:** | * UC01 – User Registration & Login * UC02 – AI Skin Analysis (may prompt booking) * UC04 – Dermatologist Review & Treatment Update | |
| **Stakeholders:** | * Patients * Clinic staff (admins, doctors) | |
| **Preconditions:** | * User is authenticated (UC01). * Scheduling system is online and reflects real-time availability. | |
| **Postconditions:** | * Appointment is created, updated, or canceled. * Notifications sent to patient, admin, and dermatologist as appropriate. | |
| **Flow of activities:** | **Actor** | **System** |
| 1. Opens “Appointments” page 2. Selects desired slot 3. Confirms booking 4. Or selects “Reschedule” 5. Or selects “Cancel” 6. Admin views dashboard 7. Admin adjusts slot (if needed) | Displays calendar with available time slots  Checks slot availability  Creates Appointment record; sends confirmation notification  Prompts new slot selection; updates record; notifies parties  Marks appointment canceled; notifies parties  Displays all today’s appointments and statuses  Updates appointment records; notifies impacted patients |
| **Exception conditions:** | * **Slot already booked:** show “Selected slot unavailable—choose another.” * **Emergency booking:** if patient marks “Emergency,” triggers emergency workflow (reprioritize slots, bump non-urgent bookings, notify). | |

Figure 3: Fully developed use case description for ***Appointment Booking & Management***