# Documentation: User Authentication and Product Display Workflow

## Overview

This document outlines the process and workflow for implementing user authentication using Firebase and displaying product details upon successful login. The system includes two main forms: **Login** and **Registration**, each with form validation to ensure data integrity.

## Components

### 1. **Firebase Integration**

* **Purpose:** Handle user authentication (login and registration).
* **Actions:**
  + Connect the application to Firebase services.
  + Use Firebase Authentication to manage user accounts.

### 2. **Registration Process**

* **Trigger:** User selects the registration option.
* **Steps:**
  1. **Form Validation:** Ensure all fields (e.g., email, password) are filled.
     + Display error messages for empty fields.
  2. **Firebase Registration:**
     + If validation passes, send the registration data to Firebase.
     + Handle success or error responses (e.g., account already exists).

### 3. **Login Process**

* **Trigger:** User selects the login option.
* **Steps:**
  1. **Form Validation:** Ensure all fields (e.g., email, password) are filled.
     + Display error messages for empty fields.
  2. **Firebase Authentication:**
     + If validation passes, authenticate user credentials with Firebase.
     + Handle success or error responses (e.g., incorrect password).

### 4. **Post-Login Product Display**

* **Trigger:** Successful login.
* **Steps:**
  1. Dynamically generate product details using the Document Object Model (DOM).
  2. Display products on the user interface.

## Error Handling

* **Empty Fields:** Prompt user to complete all required fields.
* **Registration Errors:** Notify if the email is already registered.
* **Login Errors:** Alert on incorrect credentials.

## User Flow

1. **New User:**
   * Opens the app → Selects **Register** → Completes form → Submits → On success, proceeds to product display.
2. **Returning User:**
   * Opens the app → Selects **Login** → Completes form → Submits → On success, proceeds to product display.

## Security Considerations

* Use secure password handling practices.
* Validate user inputs to prevent injection attacks.
* Implement Firebase security rules for data access.

## Future Enhancements

* Add password reset functionality.
* Implement email verification.
* Enhance product display with sorting and filtering options.