

Supermarket Billing System: Users App Details

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1 Overview

The `users` app is a core component of the Supermarket Billing System, responsible for managing user authentication, roles, and access control. It ensures that only authorized users (admins and cashiers) can access specific features, providing security and role-based functionality.

2 Current Functionality

The `users` app supports:

- **Authentication:** Secure login and logout using Django's authentication system.
- **Role Management:** Defines roles (admin, cashier) to control access to features.
- **Dashboard:** Displays role-specific options (e.g., product management for admins).
- **Admin Interface:** Allows admins to manage user accounts (create, update, delete).
- **Access Control:** Restricts actions in other apps (e.g., product creation) to admins.

3 Technical DETAILS

- **Model:**
 - `CustomUser`: Extends Django's `AbstractUser` with a `role` field (admin, cashier).
- **Views:** Includes `LoginView`, `LogoutView`, and `DashboardView` for user interaction.
- **Templates:** Bootstrap-styled templates for login (`login.html`) and dashboard (`dashboard.html`).
- **URLs:** Routes include `/login/`, `/logout/`, and `/dashboard/`.
- **Access Control:** Custom decorator (`role_required`) restricts views to specific roles.
- **Database:** SQLite for development, with migrations applied for `CustomUser`.

4 How It Works

- **Login:** Users access `/login/` to authenticate with username and password.
- **Dashboard:** Post-login, users see a role-based dashboard at `/dashboard/` with links to permitted actions.
- **Access Control:** Admins can create/edit/delete products; cashiers can view products and perform billing tasks (when implemented).
- **Admin Interface:** Admins manage users at `/admin/users/customuser/` with search and filter capabilities.

5 Future Enhancements

- Implement password reset functionality.

- Add user registration forms for admins.
- Enhance dashboard with user activity logs.
- Integrate granular permissions using `django-guardian` if needed.

6 Conclusion

The `users` app provides a secure and flexible foundation for user management in the Supermarket Billing System. It Ensures role-based access control, enabling admins to manage the system and cashiers to perform operational tasks. The app integrates seamlessly with other modules, such as `products`, and will support future enhancements for a robust user experience.