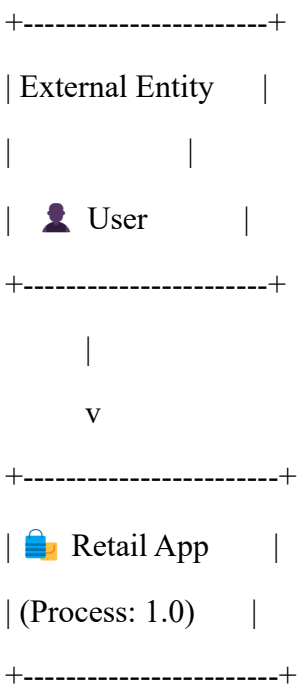
E – COMMERCE APPLICATION

A Data Flow Diagram (DFD) for a developer typically represents the flow of data within a system, illustrating how data moves between different processes, data stores, and external entities. Below is a simple example of a DFD for a basic application, such as a user login system.

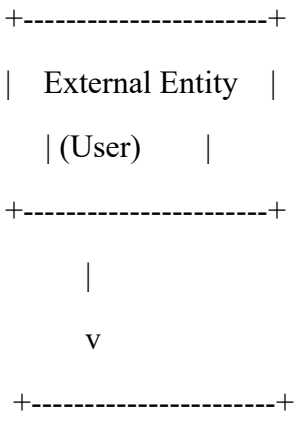
Level 0 (Context Diagram) - Retail App

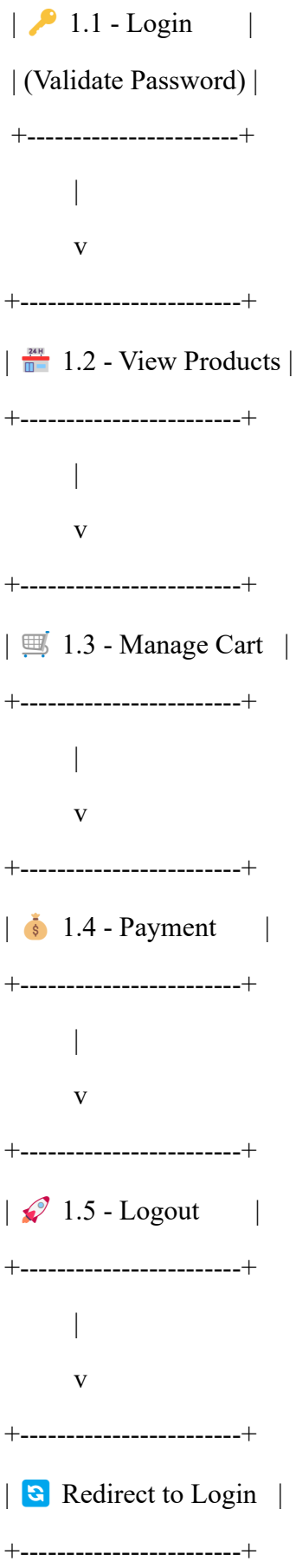
At the highest level, the system allows a **user** to log in, browse products, add items to the cart, proceed to checkout, and log out.



Level 1 DFD - Retail App Workflow

Breaking down the system into **sub-processes**.




| 🔑 1.1 - Login |
| (Validate Password) |
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+----------+
| 🏪 1.2 - View Products |
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+----------+
| 🛒 1.3 - Manage Cart |
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|
v
+----------+
| 💰 1.4 - Payment |
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| 🚀 1.5 - Logout |
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| 🔄 Redirect to Login |
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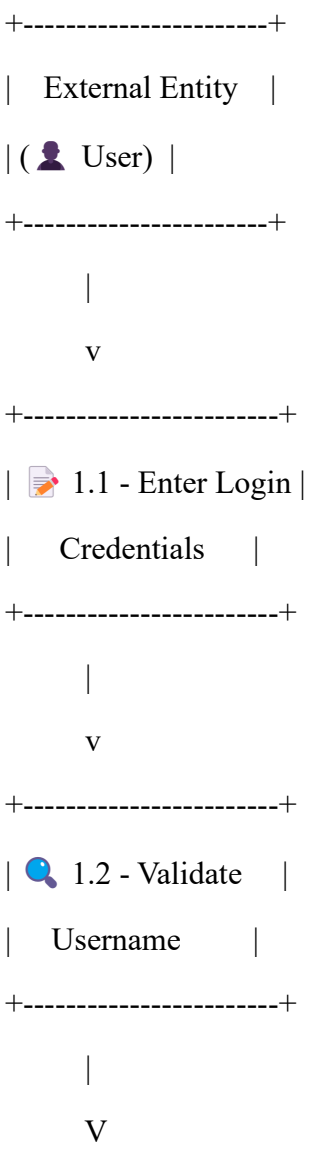
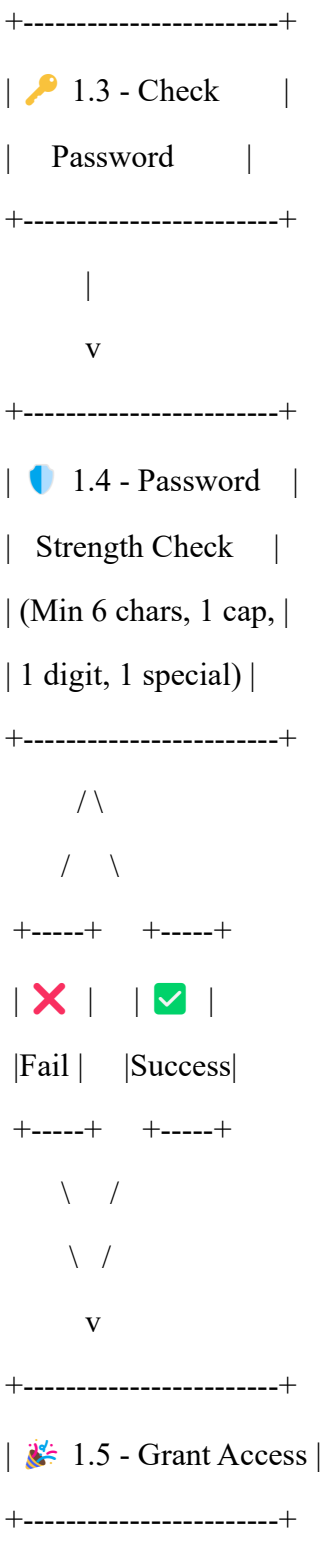
Explanation:

- **Login (1.1)** – User enters a **username and password**, which are validated (without using a database).
- **View Products (1.2)** – The user sees the product catalogue.
- **Manage Cart (1.3)** – Items can be added/removed from the cart.
- **Payment (1.4)** – The user can proceed to checkout.
- **Logout (1.5)** – The session ends, and the user is redirected back to the login page.

Level 1 DFD - Login Process (Validate password)

For a simple login system, we validate the **username and password** using predefined values.




🔑 1.3 - Check Password
🛡️ 1.4 - Password Strength Check (Min 6 chars, 1 cap, 1 digit, 1 special)
❌ Fail
✅ Success
🎉 1.5 - Grant Access

Explanation of Login Process:

- **Enter Login Credentials (1.1)** – User enters a username and password.
- **Validate Username (1.2)** – System checks if the username exists (predefined values).
- **Check Password (1.3)** – Password is checked for correctness.
- **Password Strength Check (1.4)** – Ensures that the password:
- Contains **at least 6 characters**
- Has **1 uppercase letter**
- Has **1 digit**
- Has **1 special character**
- **Decision Flow (✅/❌)** – If valid, access is granted (1.5); otherwise, login fails.