Context DFD — "Campus Merch Marketplace (CMM)"

Process

- **P0: Campus Merch Marketplace (CMM)**

External Entities

- **E1 Student (Buyer)** — campus students placing and receiving orders.
- **E2 USC (Main Seller + Admin)** — central seller, manages product listings, receives payments, and distributes goods to campuses.
- **E3 Campus Directors** — responsible for onsite distribution to students per campus.

Data Flows

E1 Student (Buyer)

- **To CMM →** Account registration/login, Browse/Search Queries, Order Details, Payment Choice (GCash, cash, bank transfer), Feedback/Review (with privacy option).
- **From CMM ←** Listings/Results, Order Confirmations, Payment Instructions, Distribution Notice, Review Display.
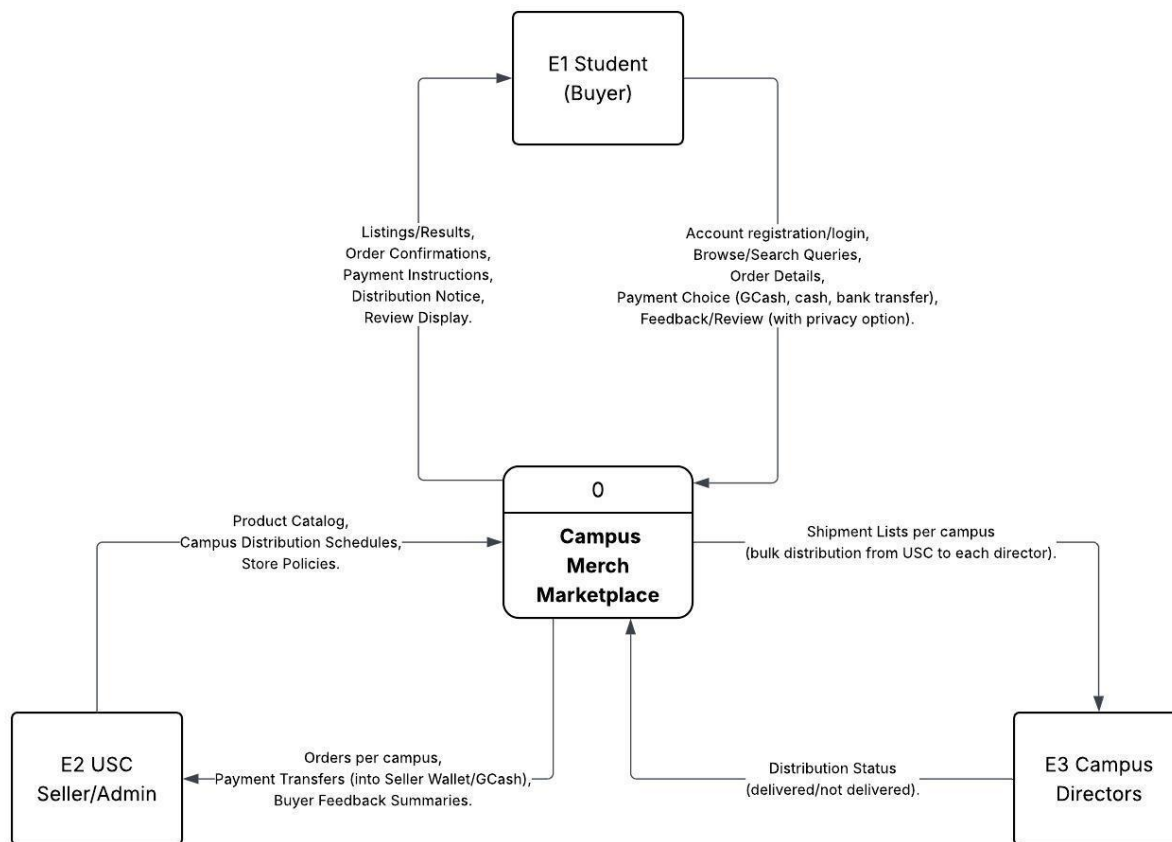
E2 USC (Seller + Admin)

- **To CMM →** Product Catalog, Campus Distribution Schedules, Store Policies.
- **From CMM ←** Orders per campus, Payment Transfers (into Seller Wallet/GCash), Buyer Feedback Summaries.

E3 Campus Directors

- **To CMM →** Distribution Status (delivered/not delivered).
- **From CMM ←** Shipment Lists per campus (bulk distribution from USC to each director).

Context Diagram

Key Changes from the First Draft

1. **One Seller/Admin (USC):** All goods originate from USC. They manage listings and payments, then bulk-distribute goods to each campus.
2. **Onsite Distribution:** No external couriers — instead, **Campus Directors** handle delivery to students.
3. **Simplified Payments:** GCash or cash (optionally bank transfer), but all funds route to **USC Seller Wallet**.

Level-0 DFD — Campus Merch Marketplace (CMM)

External Entities

- **E1 Student (Buyer)**
- **E2 USC (Seller + Admin)**
- **E3 Campus Directors**

Internal Processes (inside CMM)

1. **P1: Catalog & Listings Management**
   - Maintains product catalog and store policies provided by USC.
   - Provides searchable listings to students.
2. **P2: Order Management**
   - Accepts orders from students.
   - Groups orders by campus for distribution.
   - Sends order summaries to USC and Campus Directors.
3. **P3: Payment Handling**
   - Manages student payments (GCash, cash, optional bank transfer).
   - Routes funds to USC Seller Wallet.
   - Records payment status.
4. **P4: Distribution Coordination**
   - Prepares bulk shipment list per campus.
   - Sends distribution lists to Campus Directors.
   - Collects distribution confirmations.
5. **P5: Feedback & Review System**
   - Collects student feedback (rating, comment, privacy flag).
   - Shows privacy-aware reviews to other students.
   - Summarizes feedback for USC.

Data Stores (inside system)

- **D1 Product Catalog** (listings, policies)
- **D2 Order Records** (all orders, grouped by campus)
- **D3 Payment Records** (transaction details, status)
- **D4 Distribution Logs** (shipment per campus, confirmations)
- **D5 Review Repository** (student feedback with privacy settings)

Data Flows (high-level)

E1 Student (Buyer)

- To P1: Search Queries
- From P1: Listings
- To P2: Order Details
- To P3: Payment Info (GCash, cash, transfer)
- From P2/P3: Order Confirmation & Payment Status
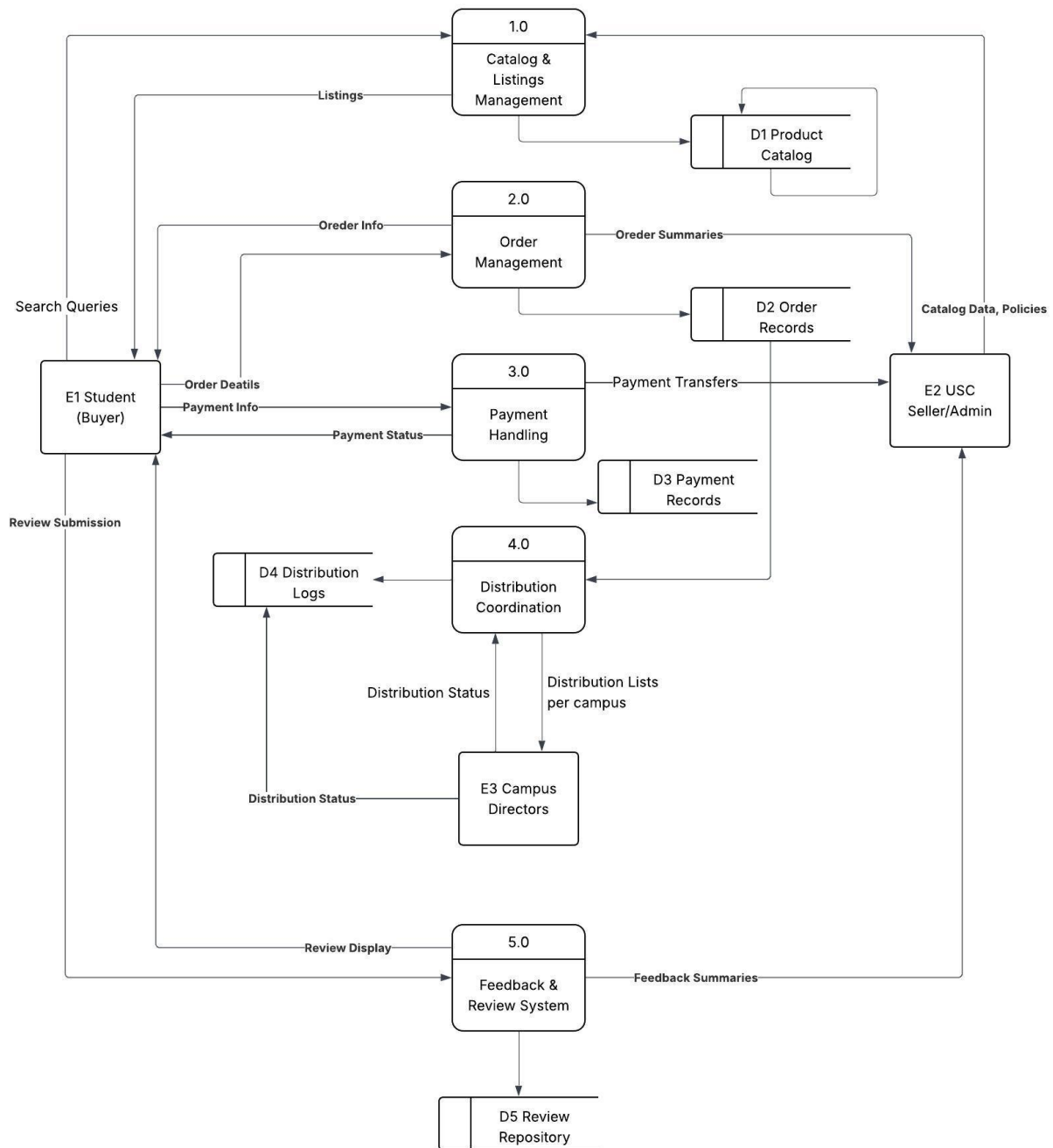- To P5: Review Submission (with privacy flag)
- From P5: Review Display

E2 USC (Seller + Admin)

- To P1: Catalog Data, Policies
- From P2: Order Summaries (by campus)
- From P3: Payment Transfers
- From P5: Feedback Summaries

E3 Campus Directors

- From P4: Distribution Lists per campus
- To P4: Distribution Status

Data Flow Diagram

1.0 Catalog & Listings Management

- Listings
- Search Queries
- Catalog Data, Policies

D1 Product Catalog

2.0 Order Management

- Oreder Info
- Oreder Summaries

D2 Order Records

3.0 Payment Handling

- Order Deatils
- Payment Info
- Payment Status
- Payment Transfers

D3 Payment Records

E1 Student (Buyer)

- Review Submission

E2 USC Seller/Admin

4.0 Distribution Coordination

D4 Distribution Logs

- Distribution Status
- Distribution Lists per campus

E3 Campus Directors

- Distribution Status

5.0 Feedback & Review System

- Review Display
- Feedback Summaries

D5 Review Repository

Level-1 DFD — Campus Merch Marketplace (CMM)

External Entities

- **E1 Student (Buyer)**
- **E2 USC (Seller + Admin)**
- **E3 Campus Directors**

Internal Processes (inside CMM)

1. **P1: Catalog & Listings Management**
2. **P2: Order Management**
3. **P3: Payment Handling**
4. **P4: Distribution Coordination**
5. **P5: Feedback & Review System**

Data flow Sub Processes

1. **P1: Catalog & Listings Management**
   Sub-Process:
   From P1- Search Queries
   To Catalog Result Page
   - Campus Picking Option
   To Item choosing Type (t-shirt, pins, etc.)
   -Direct to Customization
   To Item Variety choosing
   -Confirm of choices
   To Add to cart
   To Listing
   To Product Catalog

2. **P2: Order Management**
   Sub Process:

From Order Details
To Summary of order of item(s)
- Confirmation of order details
To input of Student name, phone number, School ID and email
- Confirmation of student information
To Customer Remarks
To Order Info
To Order Summaries
To Order Records

3. **P3: Payment Handling**
Sub Process:
From Payment Info
To Choosing of payment type
- Payment Validation Processing
To Payment Type Confirmation
- Digital Receipt Processing
To Order Confirmation
To Payment Status
To Payment Transfer
To Payment Record

4. **P4: Distribution Coordination**
Sub Process:
From Distribution Status
To Compilation of Bulk Order List
-Confirmation of campus location for bulk orders
To Preparation of bulk orders
-shipment preparations
To Prep for distribution of packed orders
To Distribution List per Campus
To Data Distribution Logs

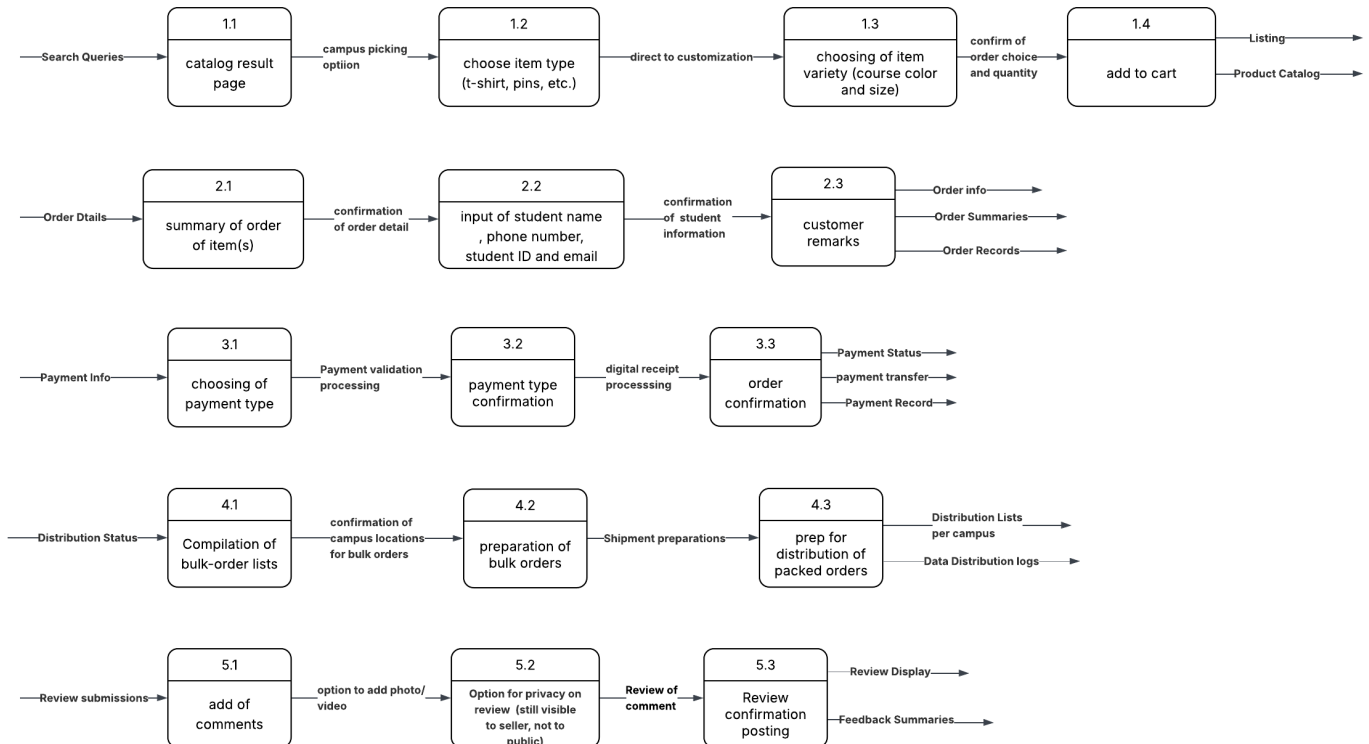5. **P5: Feedback & Review System**
Sub Process:
From Review Submissions
To add of Comments
-Option to add photo/video
To option for privacy on review (visible to seller but not to public)

-review of comment
To Review confirmation posting
To Review Display
To Feedback Summaries

DATA FLOW DIAGRAM (LEVEL 1)

Level-2 DFD: Decomposition of P2 (Order Management)

Parent Process: P2 (Order Management) from the Level-0 DFD.

Objective: To show the internal sub-processes involved in handling a student's order, from creation to grouping and summary generation.

External Entities (Same as Level-0):

E1: Student (Buyer)

E2: USC (Seller + Admin)

E3: Campus Directors

Data Stores (Accessed by P2):

D1: Product Catalog

D2: Order Records

D4: Distribution Logs (P2 writes the initial shipment list here, which P4 later updates with status).

Sub-Processes of P2 (Order Management):

P2.1: Create & Validate Order

Description: Receives the order details from the student. Validates the order against the product catalog (e.g., checks item availability, price). Calculates the total order cost.

Data Flows:

From E1: Order Details (Items, Quantities, Student Campus)

To D1: Query Product Info (Price, Availability)

From D1: Product Info Response

To D2: Save New Order (Order ID, Details, Status="Pending")

To P3: Order Total (for payment processing)

P2.2: Group Orders by Campus

Description: A periodic or triggered process that fetches all confirmed orders (after successful payment) and groups them by the student's campus to prepare for bulk distribution.

Data Flows:

From D2: Read Confirmed Orders (Status="Paid")

To D4: Create/Update Shipment List (A consolidated list of all orders for a specific campus)

To P2.3: Grouped Orders

P2.3: Generate Distribution Summaries

Description: Creates formal summaries from the grouped orders to be sent to the relevant parties (USC for fulfillment and Campus Directors for delivery).

Data Flows:

From P2.2: Grouped Orders

To E2 (USC): Order Summaries (by campus) (e.g., "10 orders for North Campus, 15 for South Campus")

To E3 (Campus Directors): Shipment Lists per campus (A detailed list of what items and for which students are in the incoming shipment).

P2.4: Update Order Status

Description: Receives confirmation from the Payment Handling process (P3) and updates the order's status in the database. This is a crucial link between payment and order fulfillment.

Data Flows:

From P3: Payment Confirmation (Order ID, Status="Success" or "Failed")

To D2: Update Order Status (e.g., change from "Pending" to "Paid" or "Payment Failed")

Data Flows to/from other Internal Processes (P1, P3, P4, P5):

To P3 (Payment Handling): Order Total (from P2.1)

From P3 (Payment Handling): Payment Confirmation (to P2.4)

To P4 (Distribution Coordination): (Implicit, via writing to D4)

From P4 (Distribution Coordination): (P4 would update D4 with status, which P2 might read)

To P5 (Feedback System): (Order data would be needed to leave a review for a purchased item, likely via a shared data store)

Key Details and Rationale:

P2.1 (Create & Validate Order): This is the entry point. It must interact with D1 to get real-time product data to ensure the order is valid and the price is correct before it's ever saved or the student is asked to pay.

P2.4 (Update Order Status): This process is separate to highlight the critical integration point with the Payment system (P3). The order cannot progress to grouping and distribution until its status is updated to "Paid".

P2.2 (Group Orders by Campus): This process works on a batch of orders, not a single one. It reads all orders marked "Paid" and organizes them by their destination (campus).

P2.3 (Generate Distribution Summaries): This process takes the grouped data and formats it into the specific reports needed by two different external entities: a summary for USC (Admin view) and a detailed packing/list for the Campus Directors (Operational view).

Data Stores: The flows show how P2 primarily interacts with D2 (Order Records), using it as the system of record for each order's state. It also reads from D1 (Product Catalog) and writes the initial distribution plans to D4 (Distribution Logs), which will later be updated by P4 with delivery status from Campus Directors.

DATA FLOW DIAGRAM (LEVEL 2)