CLEMSON UNIVERSITY

CPSC 3720
Lesson 27

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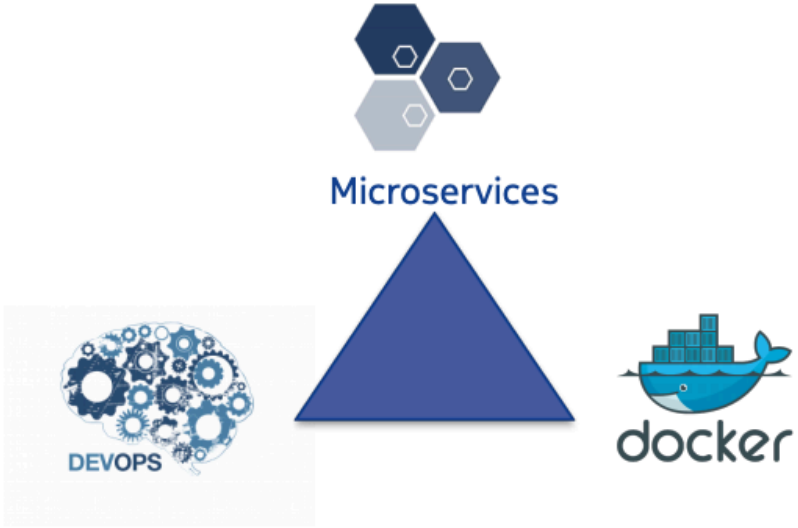
CUSports Project Update

- Sprint 1 due Oct 21
- Example Trello Boards and API deliverable in the 3720 team locations on Trello and Postman (reviewed on Friday).
- Rubric available for Sprint 1 Assignment. Points allocated to Sprint 1 were decreased and moved to Sprints 2 and 3.

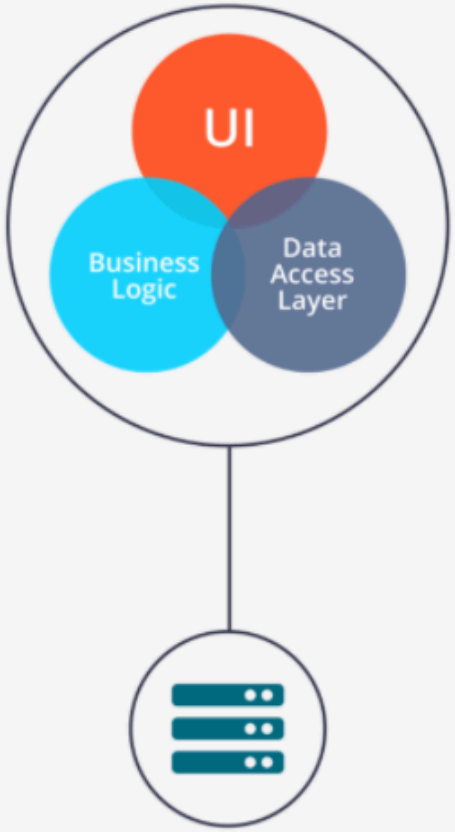
Why API First?

- As most software moves to the cloud the focus has been on:
  - Microservices architectures
  - Containerization
  - Continuous delivery

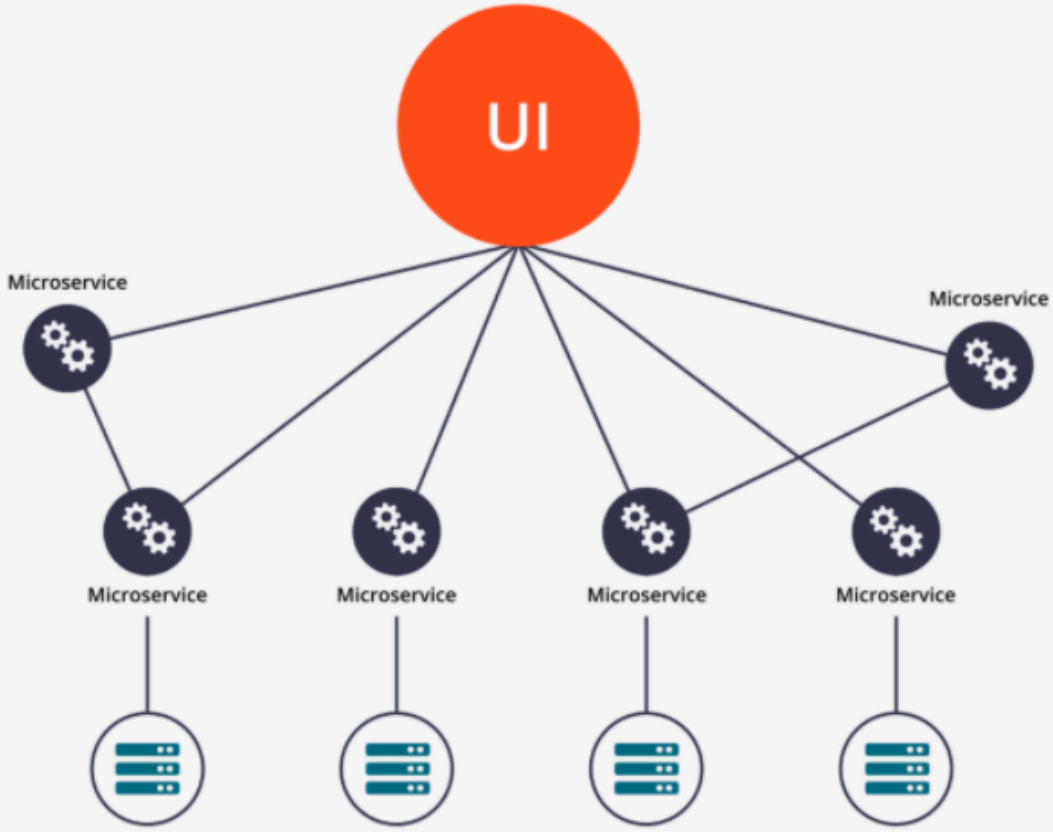


An API-first approach can help you manage the complexity of working in the cloud.

Microservices



Monolithic Architecture



Microservice Architecture

CUSports "Microservices"

TEAM	SERVICE	Purpose
1 – Da Bagel	*Inventory*	Create and update inventory levels for items
2 – Dynamic Devs	*Search*	Maintains an optimized index for searching entities by various parameters
3 - Chaos	*Payment*	Processes payment transactions for orders
4 – image(4).png	*Pricing*	Calculates the price based on promotions and customer locale (tax)
5 – Rick Roll	*User Accounts*	All information about the users of the CUSports system including customers
6 – Constant Tailors	*Promotions*	An engine that will generate the discount for the cart based on certain rules
7 – Heads Up 7 Cups	*Cart*	Maintains the shopping information for a customer until it becomes an order
8 – Team Gr8	*Orders*	Used for tracking the state of a purchase (in process, shipped, received, etc.)
9 – Gibby Gang	*Notifications*	Notify the customer on the status of their order
10 - Ten	*Item*	All the data about the products you are selling

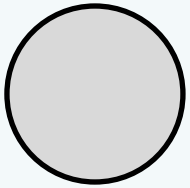
Data flow Diagramming

- The Data Flow Diagram (DFD) is a traditional visual representation of the information flows within a system.
- A DFD is used for software analysis and design.
- A clear DFD can depict a good amount of the system requirements graphically.
- A DFD does present information on operation sequence, therefore, it is not a process or procedure modeling method.

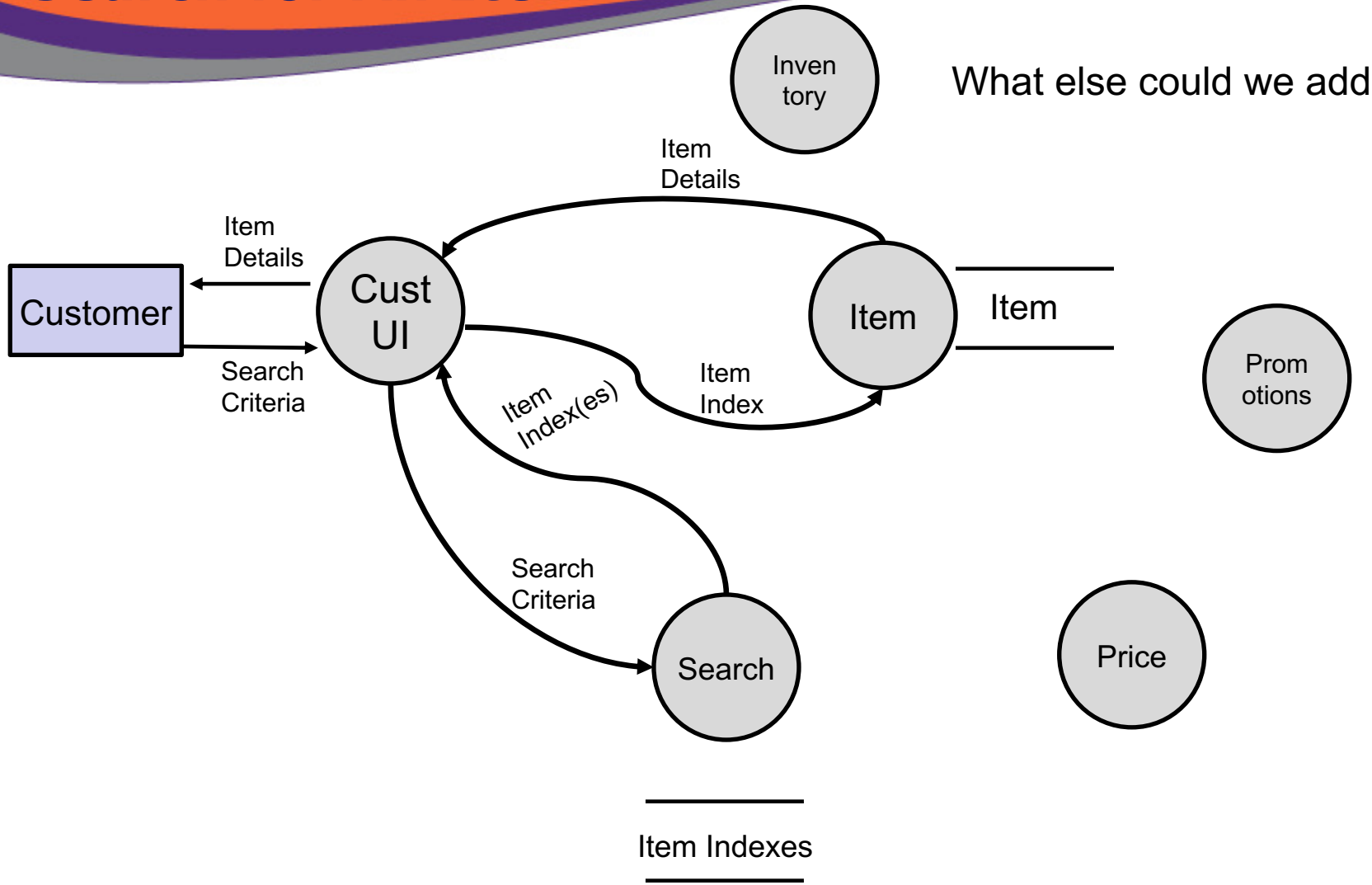
DFD Characteristics

- Supports the Requirements and Analysis/Design phases of the SDLC
- Provides a diagramming technique with annotation
- Describes a network of activities/processes of the system
- Allows for parallel and asynchronous behaviors
- Enables stepwise refinement through hierarchical decomposition of processes

DFD Notation

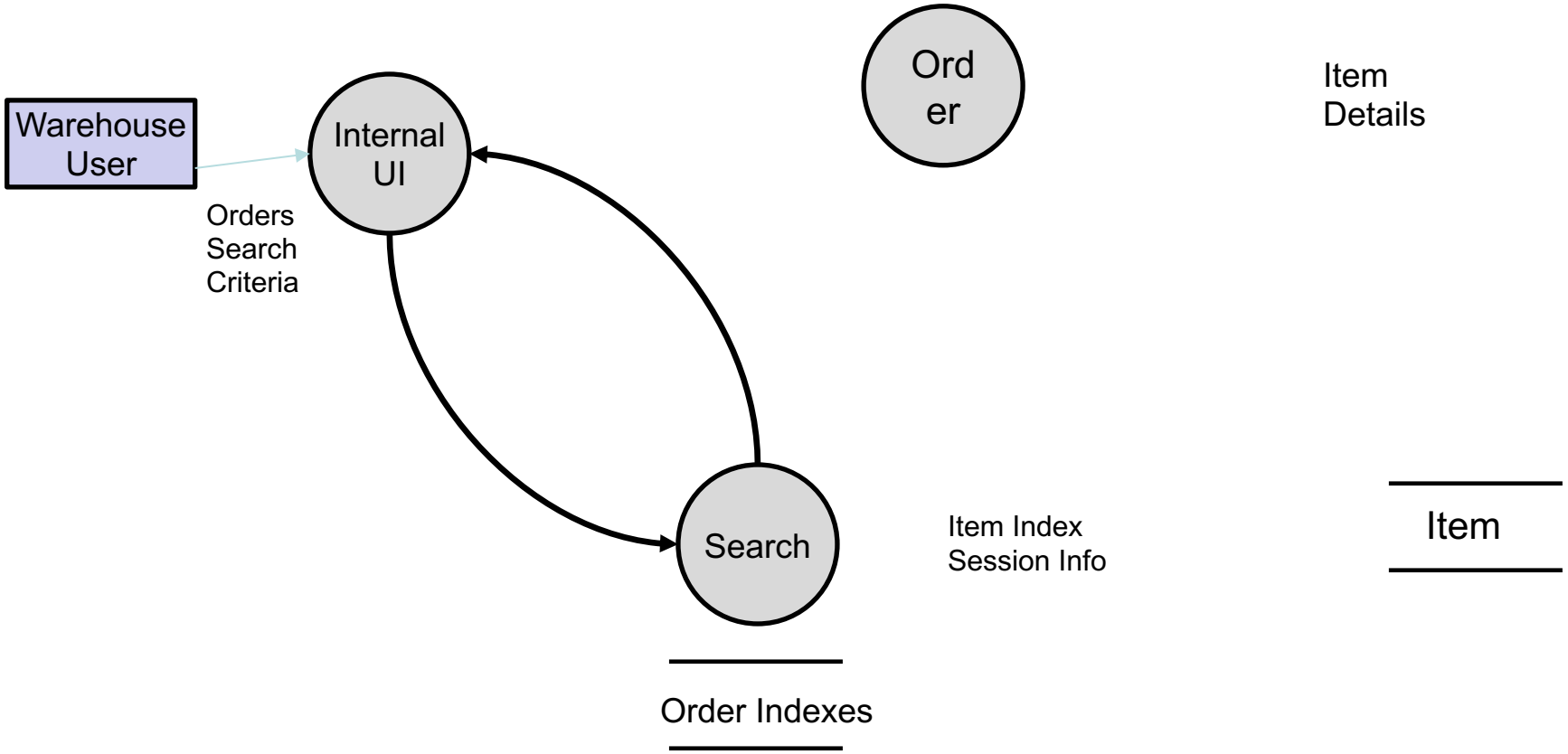
Entity	Yourdon/De Marco	UML	Definition
External Entity			An external entity can represent a human, system or subsystem. It is where certain data comes from or goes to. It is external to the system we are designing.
Process			A process is a business activity or function where the manipulation and transformation of data takes place. A process can be decomposed to finer levels of detail.
Store			A data store represents the storage of persistent data required and/or produced by the process.
Flow			A data flow represents the flow of information, with its direction represented by an arrowhead that shows at the end(s) of flow connector.

Epic #1:
Search for An Item

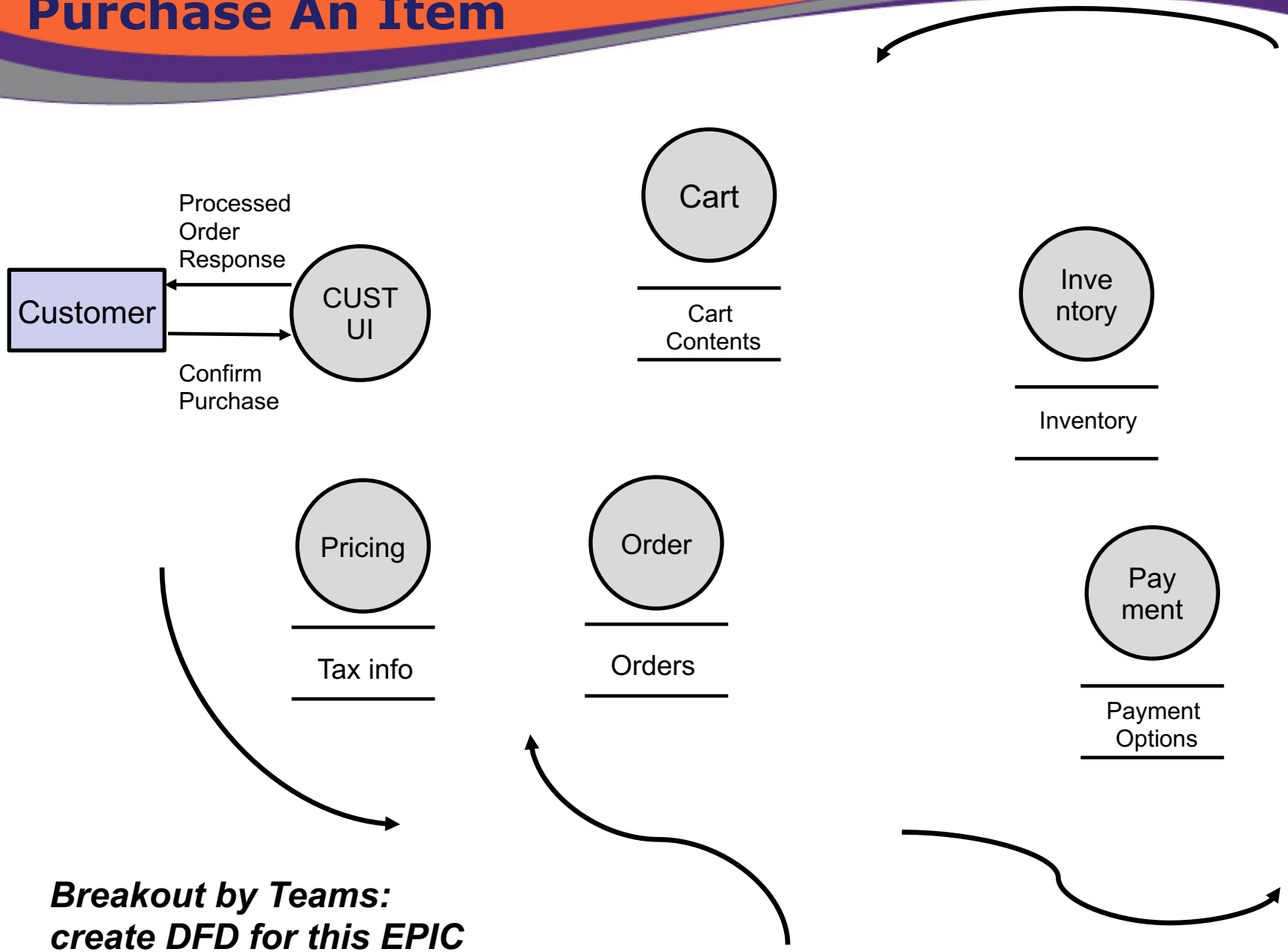


What else could we add here?

Epic #12:
Search for Orders



Epic #2:
Purchase An Item



Breakout by Teams:
create DFD for this EPIC