


# CS486C – Senior Capstone Design in Computer Science

## Project Description

<b>Project Title:</b> Generous - Commerce Connectors	
<b>Sponsor Information:</b> 	Kyle Montgomery, Founder and CEO Generous, Inc. kyle@meetgenerous.com

### Project Overview:

Finding the perfect gift is hard, and remembering events on time is harder. [Generous](#) is a Flagstaff startup founded by NAU CS alum Kyle Montgomery. We're launching a consumer app that uses AI and ecommerce best practices to make both personal and corporate gifting easy.

Generous is an exciting startup because it's a vertical early adopter of "agentic commerce," a new and fast-moving trend in ecommerce that is expected to represent 25% of all online commerce by 2030. This means you'll work with emerging AI protocols before most developers in the industry even touch them.

### Problem:

Our experience is agentic ("chat to gift"), but Generous operates as a marketplace. To list and sell, brands must:

1. Provide product catalog data
2. Receive and fulfill orders as Seller of Record
3. Reconcile payments.

Doing this one-off per brand does not scale. We need repeatable integrations.

### Solution:

We will deliver a reference integration SDK plus platform-specific connectors to the providers listed below. These providers have been identified because they are platforms our target retailers already use today to manage product catalog data, fulfill orders, manage integrations, etc.

Core targets:

- Shopify
- Salesforce Commerce Cloud
- Zapier
- Feedonomics

Stretch targets:

- Adobe Commerce
- SAP Commerce Cloud
- Pipe17

- Patchworks
- commercetools

These connectors will help real brands join our marketplace faster, meaning your work could be powering live ecommerce stores by the end of the project. You'll learn integration patterns that apply to almost every major commerce platform on the market today.

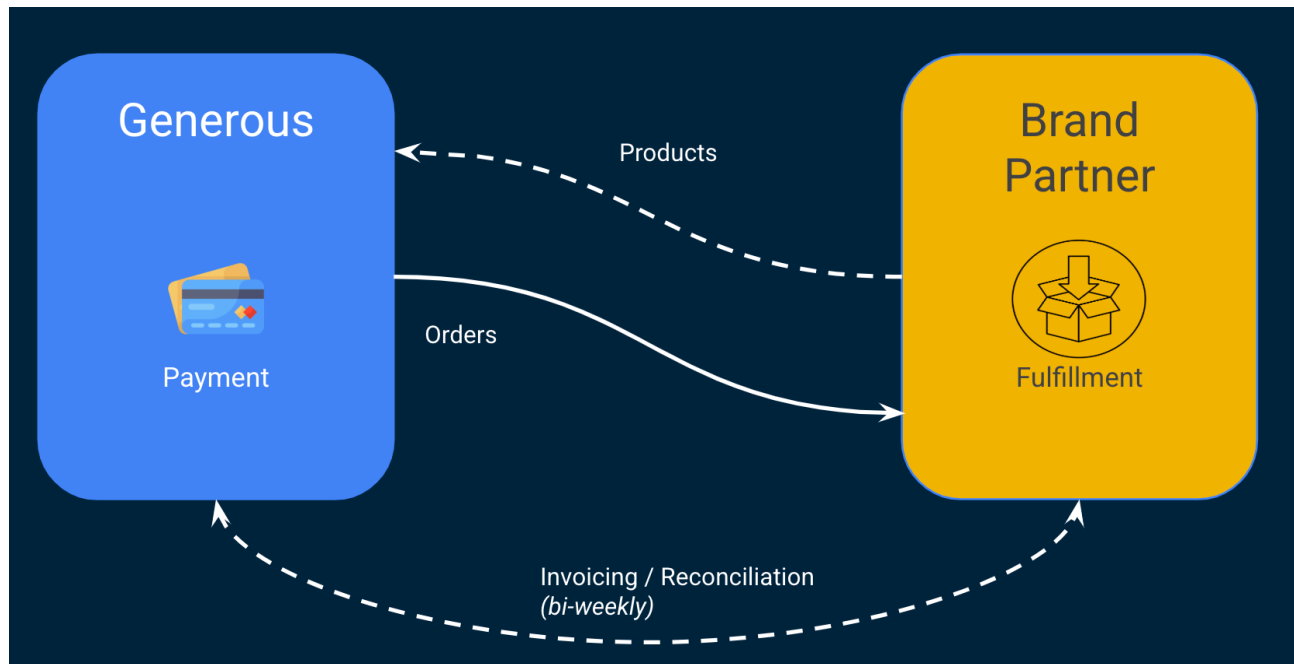
### Key features of each commerce app:

**Agentic protocol integration:** AI-based protocols are evolving rapidly, and we will prioritize using these protocols where it makes technical and business sense. These may include Model Context Protocol (MCP), Agent-to-Agent (A2A), MCP-UI (open-sourced by Shopify in August 2025), etc.

**Catalog integration:** When MCP or similar is not available, we can consume flat files (such as a Google Shopping feed) or consume RESTful APIs to retrieve product catalog data, including price and inventory.

**Order integration:** Generous provides an Order API for businesses to consume. It can also export flat file orders in JSON format.

(Reconciliation, while pictured here, will be handled outside of the scope of commerce platform integrations).



### Key challenges:

This project will require adapting a single, reusable integration architecture to different technology stacks. Students will gain exposure to multiple languages and frameworks, but deep expertise in each is not required. AI-assisted coding and vendor documentation will be leveraged to accelerate learning.

Examples:

- Shopify is built on Ruby and JavaScript and is highly templated
- Salesforce Commerce Cloud is built on JavaScript and Java and is built for enterprise retailers

### Impact of a successful project:

These connectors are crucial to helping Generous scale. They open new sales channels for hundreds of brands. By the end of the project, success will be measured by:

- At least one core connector is in production use with a partner brand
- Two additional connectors are ready for submission to their respective marketplaces
- A reusable SDK that can accelerate future connector builds

### **Knowledge, skills, and expertise required for this project:**

*Required:* Comfort with JavaScript/ECMAScript, RESTful APIs, JSON; ability to parse and transform flat-file formats (XML, CSV), database schemas, or documented data structures.

*Preferred:* React and Node.js, Java, PHP, ecommerce platforms.

### **Equipment Requirements:**

- Each student will need to provide their own laptop
- There should be no equipment or software required other than a development platform and software/tools freely available online.

Generous will provide:

- Sandbox API keys and sample catalogs for all core targets
- Mocked Order API for local development
- Architecture guidelines
- Access to tools such as AI-powered code development platforms to accelerate development, if needed
- Weekly sponsor meeting and dedicated Slack channel for Q&A
- Platform documentation links and access to any required developer accounts.

### **Software and other Deliverables:**

Internal design documentation, agnostic of the commerce platform, that acts as an abstract model that every implementation will follow.

For each commerce connector:

- Source code stored in a shared repository with install/run instructions that complete in under 15 minutes
- Passes 10+ unit tests and 3+ end-to-end tests
- Functional demo ingesting a 1,000-SKU catalog and posting at least one order to the Generous sandbox
- Submission-ready documentation for vendor listing