

# Database Design Case Study for



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# Introduction

[Anna Rowell Designs \(ARD\)](#) is a small, independently owned business located in Greensboro, North Carolina specializing in custom and handmade products including home décor, stickers, apparel, and other personalized items. Like many growing creative businesses, ARD operates across multiple sales channels – including online platforms, pop-up events, and corporate commissions – and offers a wide variety of customizable products. However, keeping track of sales, inventory, and customer preferences has become more challenging — making a structured and manageable approach to data essential.

The purpose of this project is to design a relational database that helps Anna stay on top of her business in a more efficient and consistent way. The database is built to organize and connect the different areas of her operations – products, sales, fulfillment, customers, suppliers, and marketing – in a structure that’s easy to understand and flexible enough to grow with her business. With a more unified system in place, Anna can simplify daily tasks, spot trends more easily, and make more informed decisions as a business owner about what’s working and what to improve.

This report outlines the steps taken to create a robust, scalable database for ARD and demonstrates how Anna can use this system to gain actionable insights and streamline her business.

## Business Context and Data Landscape

I met with Anna in early April to discuss Anna Rowell Designs in more detail and to gather some information to help guide the database design process.

### Business Goals

To get a better understanding of how a structured database could help Anna, we first discussed some of her business goals. Although ARD is currently a side-project for Anna, it is still a serious and meaningful endeavor for her. She invests significant time and creativity in the products she offers and wants to be able to make informed, data-driven decisions to ensure her efforts are worthwhile. While she isn’t focused on scaling the business into a large operation at this time, she values clarity and insight – particularly when preparing for new product launches or evaluating how certain products and designs perform over time.

Anna’s primary goal is to understand which product offerings sell best – by season, size, design, and channel – so she can plan future collections with confidence. By identifying bestsellers and profitable product types, she can align her future product launches with customer demand and optimize her inventory. This focus on understanding what sells best will enable her to make more informed decisions about which products to prioritize and how to plan for seasonal offerings.

While long-term operational and marketing metrics, such as customer behavior, fulfillment efficiency, and supplier performance, are not the primary goal at this moment, they are still

highly beneficial for Anna. These insights would help her improve overall business efficiency and effectiveness. Anna is eager to explore these areas further and use them in the future, as they will provide a fuller picture of her business's operations and guide her as the business grows, but for now, her main objective is to ensure that her product offerings are well-aligned with customer preferences and sales trends.

## Data Overview

After discussing Anna's business goals, we also discussed the types of information Anna already tracks or could easily start tracking in her operations and divided these items into a few main categories.

- **Product data:** information about product types, base products, optional variations (like size or scent), and the designs or patterns applied to them.
- **Sales data:** Orders placed online, at pop-ups, or through custom corporate requests, including dates and items sold
- **Customer data:** Individual and corporate customers, their contact details (if collected) and addresses
- **Fulfillment data:** How and when an order is delivered or shipped, and which packaging materials were used
- **Supplier and restock data:** Orders placed to restock products or packaging materials along with quantities and costs and the associated supplier details
- **Marketing data:** Instagram posts and other promotional content, which products were featured, and available engagement metrics (comments, likes, reach, etc.)

## Business Rules

After discussing the data sources available to Anna, we also developed some key business rules that would help guide and govern the database design.

- Each product belongs to a product type and may have one or more variants (size, color, scent, etc.)
- A product offering is a combination of a base product (and optional variant) with an optional pattern or design – handmade items do not have a defined printed pattern or design
- A design may reference a pattern, but not all designs use one
- Designs and patterns may belong to a collection, but it is not required
- Customers may be individuals or corporate clients
- Corporate Customers may have custom designs or patterns
- Pop-up sales may not collect any customer information
- Each sale includes at least one product offering or bundle
- Bundles consist of one or more product offerings or base products (mystery bundles)
- Fulfillment is required for shipped or delivered sales, but is optional for pop-up sales
- Fulfillment may require the use of packaging materials

- Discount codes may be applied to sales and include details like, type, value, and usage limits
- Products can be sold individually or as part of bundles
- Restock orders placed with suppliers can include multiple products or packaging items
- Marketing posts can promote one or more product offerings

With a foundational understanding of ARD's data landscape and operations, I next translated this information into a normalized, flexible database schema that supports both current and future data needs.

## Database Design

The data model was designed not only to reflect Anna Rowell Designs' current operations but to provide a scalable framework for growth, improved analytics, and decision-making.

The database was designed using Enhanced Entity-Relationship (EER) modeling. The structure includes key business objects like products, sales, and customers, as well as supporting elements like fulfillment, marketing posts, suppliers, and bundles. The goal was to keep the system organized and flexible, while making sure it accurately reflects how ARD operates in real life.

The EER diagram for the database design is shown in Figure 1. The associated normalized table structure for the database can be found in Appendix A.

## Schema Overview

### Product Offerings

- `ProductType`, `BaseProduct`, `ProductVariant`, and `ProductOffering` represent the items Anna offers
- `Design` and `Pattern` are handled in a recursive structure to show visual relationships
- `Collection` is used to track designs by season or launch

### Sales

- `Sale`, and `SaleItem` track purchases
- `Customer` and `Address` collect details about who made purchases (when available)
- `PopUp` and `Discount` provide additional details about sales

### Fulfillment & Packaging

- `Fulfillment` includes shipping or delivery details
- `FulfillmentPackaging` records how much packaging was used for each sale

### Bundles

- The `Bundles` table identifies bundle offerings
- `BundleItem` connects a bundle to its individual item

## Supplier & Restock Management

- 'Supplier' stores vendor info
- 'Restock' tracks restock transactions
- 'RestockItem' connects reorders to the items being restocked

## Marketing

- 'MarketingPost' tracks Instagram and campaign activity

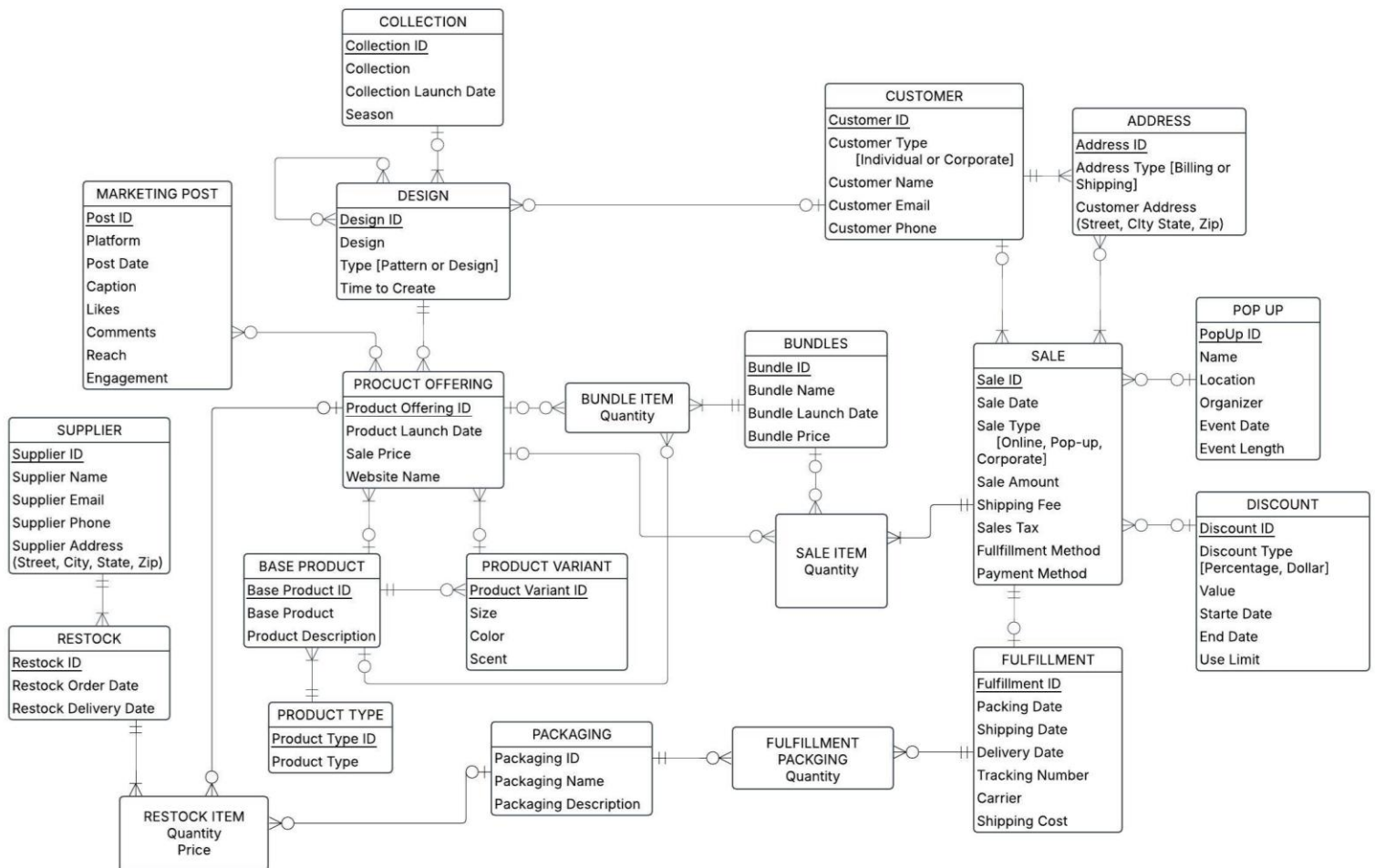


Figure 1

## Design Decisions

The design of the database was driven by a balance between accurate modeling of business processes and practical usability for a small business owner. Each structural choice reflects either a direct need Anna has today or a potential feature she could easily adopt in the future. Below are key decisions made and the rationale behind them:

**Avoidance of Subtypes:** Instead of using complex inheritance structures (e.g., customer subtypes for individual vs. corporate), I used a single `Customer` table with a `CustomerType` field. This approach keeps the schema simple while still allowing distinction between customer types.

**Flexible Product Modeling:** The database separates `BaseProduct`, `ProductVariant`, and `ProductOffering` to account for real-world variation in how products are sold. Not all items require variants, so `ProductVariantID` is nullable. `ProductOffering` acts as a sellable unit that brings together a base product, optional variant, and associated design.

**Recursive Design Structure:** The `Design` table includes a recursive foreign key to handle situations where a design incorporates a pattern. This supports layered design elements without requiring a separate pattern table, keeping the schema compact and expressive.

**Associative Entities:** To model complex relationships – such as bundles made of multiple offerings or packaging materials used in fulfillment – I created associative tables like `BundleItem` and `FulfillmentPackaging`. These allow for many-to-many relationships while preserving detailed tracking (e.g., quantity of packaging used per fulfillment).

**Optional Relationships and Nullable Foreign Keys:** Many foreign keys are optional to reflect real business practices. For example, not every sale has a tracked customer (pop-up events), not every product has a variant, and not every sale is fulfilled via shipping (some are local pickups/delivery). This makes the model adaptable without overcomplicating queries or requiring dummy data.

**Simplified Lookup Fields:** For usability, I chose to use constrained fields (e.g., `[SaleType]`, `[FulfillmentMethod]`, `[CustomerType]`) rather than separate lookup tables. This makes data entry and maintenance more intuitive for a small business owner, even though it sacrifices some normalization.

**Support for Incremental Implementation:** The structure allows Anna to start with core tables—like `ProductOffering`, `Sale`, and `Customer`—and expand into fulfillment, supplier tracking, and marketing as her data practices mature. The modularity of the schema supports this step-by-step adoption.

**Discounts and Campaign Tracking:** `DiscountCode` and `MarketingPost` tables allow Anna to measure the performance of promotions and social media campaigns. These are linked to sales and product offerings to enable reporting on marketing effectiveness.

**Restock Tracking and Supplier Integration:** Supplier and reorder tracking tables were included to help Anna track not only finished products but also the materials and packaging items she needs to operate. This could inform future decisions around pricing, sourcing, and inventory planning.

These design decisions were made with scalability, flexibility, and simplicity in mind. They aim to give Anna meaningful business insights while keeping the structure approachable and sustainable.

# Database Applications and Strategic Insights

To bring the database to life and illustrate its practical value, I generated realistic business data and used Tableau dashboards to simulate the kinds of insights Anna could use to run ARD more effectively. This section highlights how Anna could use the database to support decisions, better track operations, and generate business insights she doesn't currently have access to.

## Data Generation

To illustrate how the database would function in practice, I generated representative data that aligns with Anna Rowell Designs' current product line and operational structure. This involved mapping Anna's existing offerings to the `ProductOffering` and `Design` tables and building out realistic examples of sales, customers, and fulfillment records.

To begin populating the database, I first translated Anna's actual product offerings into structured records. Here is an example (Figure 2) showing how one of her products – ARD Confetti Iced Coffee Koozie – maps into the database structure:

ProductType

ProductTypeID	ProductType
4	Drinks

BaseProduct

BaseProductID	ProductTypeID	BaseProduct	ProductDescription
30	4	Iced Coffee Koozie	null

ProductVariant

ProductVariantID	BaseProductID	Size	Color	Scent
73	30	small	null	null
74	30	medium	null	null

ProductOffering

ProductOfferingID	BaseProductID	ProductVariantID	DesignID	ProductLaunch	SalePrice	WebsiteName
124	30	73	1	null	\$9.00	ARD Confetti Iced Coffee Koozie
125	30	74	1	null	\$9.00	ARD Confetti Iced Coffee Koozie

Design

DesignID	Design	[DesignType]	TimeToCreate	ParentDesignID	CollectionID	CustomerID
1	Classic Confetti	Pattern	5.4	null	1	null

Collection

CollectionID	Collection	CollectionLaunch	Season
1	Celebration	null	null



Figure 2

Anna did not have any historical data (sales, customer, or otherwise) that she was able to share with me, so I utilized ChatGPT to generate some mock data that reflects what could be expected based on her business model and fits the database design. Additional details on this process can be found in Appendix B.

## Data Insights – Tableau Dashboards

To support the insights Anna is most interested in – especially around identifying her top-performing products – two Tableau dashboards were developed as part of this project. The first is focused exclusively on product and sales trends, helping Anna identify her best-selling items,



analyze design performance by season or channel, and explore how customer purchasing behavior varies. The second dashboard takes a broader view of business operations, offering insights into fulfillment activity, profit margins, current inventory, and customer reach that Anna may wish to monitor as her business evolves.

## Dashboard 1: Sales Insights

As a small business owner, Anna needs to quickly understand which products perform well, which sales channels are most effective, and what customer preferences are trending. This dashboard (Figure 3) helps Anna answer the question: *What's selling, and when?* It focuses on product performance, seasonal trends, and customer preferences – giving her the clarity to plan new collections, restocks, or design refreshes based on actual purchasing behavior. The dashboard emphasizes clarity and practical interpretation while minimizing the use of calculated fields to maintain transparency.

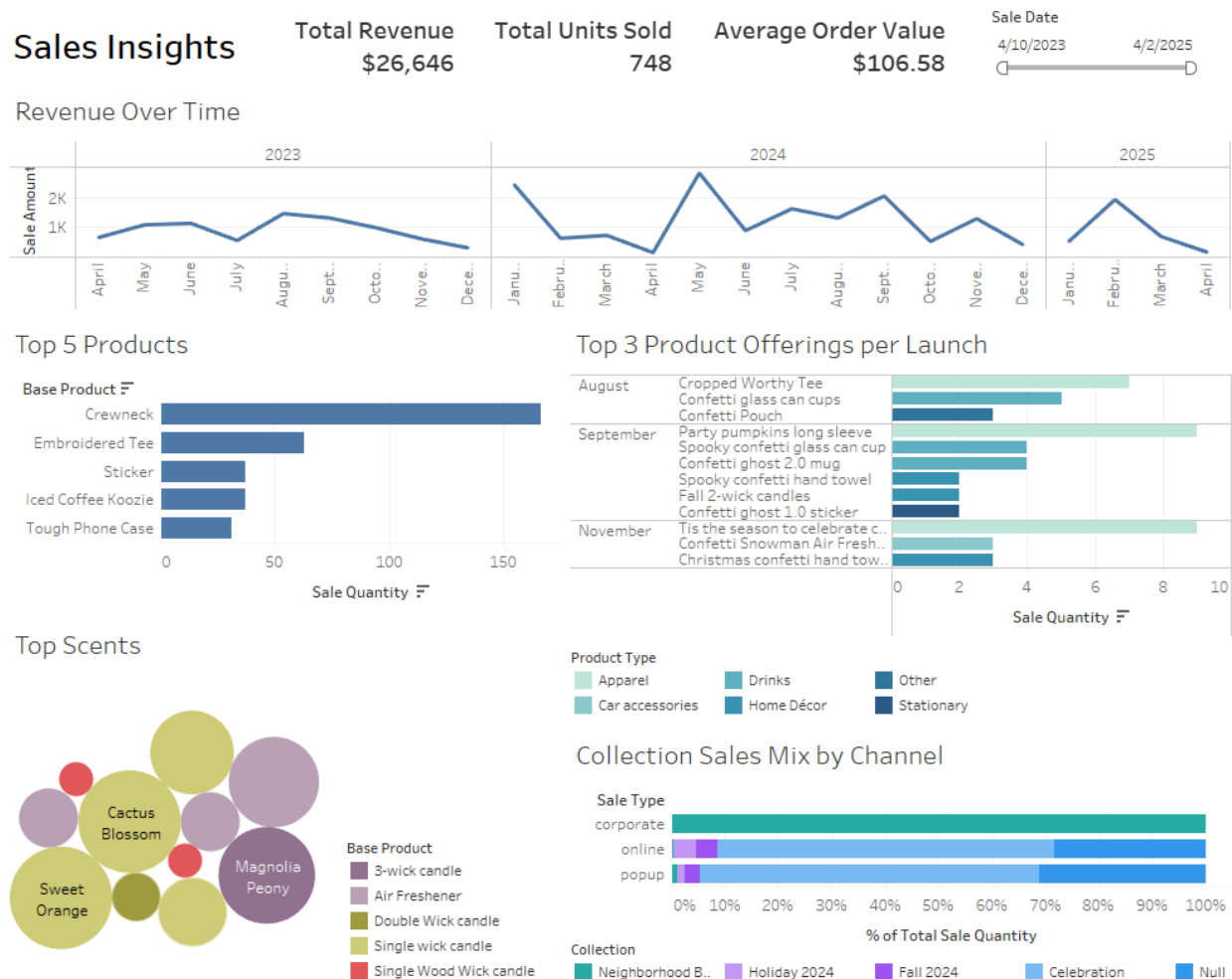


Figure 3

## Dashboard Components:

- **Key Sales Metrics:** Designed to give Anna a quick snapshot of how the business is performing over time, with flexibility to drill into specific months or seasons.
- **Revenue Over Time:** Tracks sales trends and identifies seasonal peaks for dips. Can help with production planning, identifies slower months, and supports future forecasting.
- **Top 5 Products:** Highlights the most popular base products so Anna can lean into customer favorites – especially when designing new collections or planning for pop-ups.
- **Top 3 Product Offerings per Launch:** Shows the best-selling products for each product launch. Gives Anna a clear sense of which new products landed well, so she can build on what resonates or refine what didn't and plan restocks or promotions.
- **Top Scents:** Highlights customer preference for scent profiles across scented products. Identifies product preferences that could influence product stocking decisions and seasonal offerings. A similar view about product sizing could be added as a future enhancement.
- **Collection Sales Mix by Channel:** Shows which collections perform best in each sales environment – helping Anna match the right products with the right venue and tailor marketing and stock levels appropriately.

The dashboard also includes an adjustable filter for sale date, which allows Anna to easily view sales trends for different time periods.

This first dashboard represents a practical, insightful, and easy-to-implement tool for Anna Rowell Designs. With only the product and sales data tables, it delivers a rich view of product performance and customer preferences – but is not an exhaustive view of the insights that can be generated with just these basic tables. It was designed to provide immediate business value while maintaining flexibility.

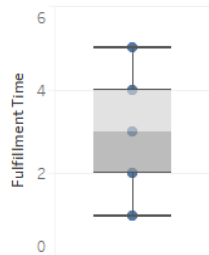
This dashboard serves as a creative compass for Anna. Instead of relying on gut feeling alone, she can use this view to validate her instincts, see how designs are performing across channels, and make confident decisions about restocks and releases.

## Dashboard 2: Operational Insights

This dashboard (Figure 4) is designed to complement the sales insights dashboard by focusing on key operational, inventory, and customer behavior data for Anna Rowell Designs. This dashboard supports Anna's *behind-the-scenes decisions* – everything that happens after a sale, from fulfillment to customer relationships. It extends beyond sales and leverages data from fulfillment, packaging, restocks, product costs, and customer demographics to provide a well-rounded picture of business health and equip Anna with insights to efficiently manage her business.

## Operational Insights

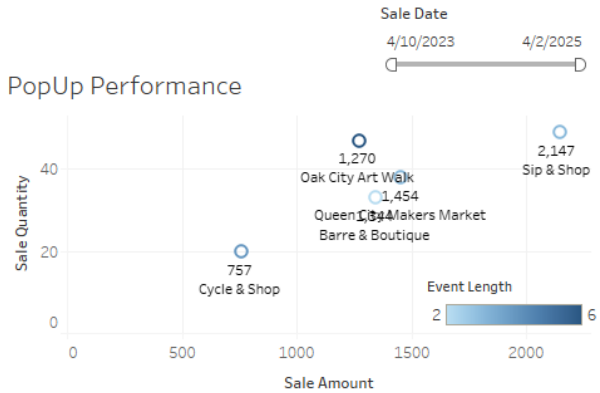
### Fullfillment Timeline



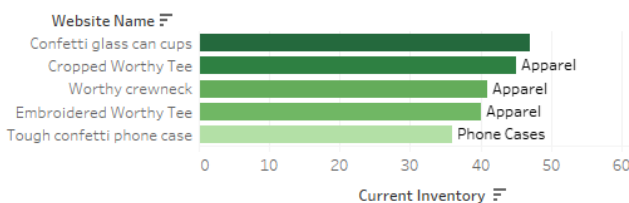
### Top 10 Products by Profit Margin

Product Type	Website Name	Profit Margin
Apparel	Celebrate Puff Print Crew...	89.95
	Cropped Worthy Tee	97.66
	Embroidered Worthy Tee	141.72
	Everyday deserves some c...	97.10
	Worthy crewneck	96.20
	You are worth celebrating...	108.07
Drinks	Confetti glass can cups	133.29
Home Décor	Confetti Candle	93.38
Phone Cases	Clear confetti phone case	115.86
	Tough confetti phone case	92.03

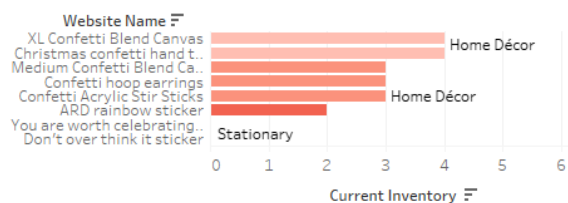
### PopUp Performance



### High Inventory - Current



### Low Inventory - Current



### Top Customers

Crystal Bruce 5 752.8	Vickie Price 4 616.6	Erica Nelson 5 576.7	Rhonda Torres 2 496.5	Joanna
Daniel Steele 3 745.8	Ashley Leon 3 583.3	Rachel Stevenson 3	Hannah Flores 4	Kathleen Andrade 3

### Customer Locations

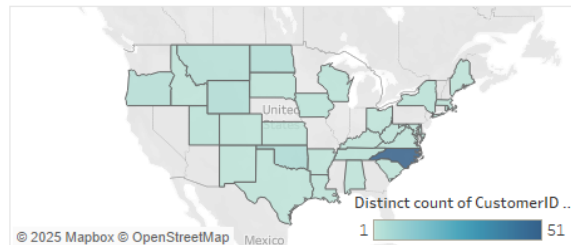


Figure 4

## Dashboard Components:

- **Fulfillment Timeline:** Tracks shipping and delivery times so Anna can spot delays early or fine-tune her process to meet customer expectations.
- **Top 10 Products by Profit Margin:** Ranks the most profitable items, not just the best-selling. This allows Anna to identify high-margin products that may deserve increased focus or promotion and invest her time and materials wisely.
- **Pop-Up Performance:** Compares revenue vs. quantity sold across pop-up events with the color scale indicating event length. Shows which events deliver the most value, helping Anna decide which are worth repeating and which might not be a good fit going forward.
- **Current Inventory Views:** Split into "High Inventory" and "Low Inventory," this pair helps Anna avoid running out of bestsellers or overproducing slower items. With a clear view of what's in stock, she can make smart restock decisions on her own schedule. (Date filter does not apply to this view as it is intended to remain current)

- **Top Customers:** Visually showcases repeat customers and total spending, offering a quick read on customer loyalty and VIPs worth prioritizing for engagement, loyalty rewards, or personalized thank-you notes.
- **Customer Locations:** Aggregates unique customer count by state, providing a geographical view of the customer base for targeting marketing or shipping optimization. It lets Anna see where her community is growing – helpful for planning future promotions or designing location-themed products.

Together, these views help Anna monitor production, fulfillment, and customer behavior with the same level of clarity and insight she now has for sales. Each chart serves a specific operational question, and a consistent date filter ties everything together. It builds on the existing database and is fully scalable for future analysis of cost efficiency, restock timing, or customer segmentation.

This dashboard is about streamlining the back end so Anna can focus on what she loves – creating. With just a few simple views, she can spot fulfillment issues, evaluate performance, plan smarter restocks, and build stronger customer relationships.

## Conclusion and Recommendations

The database developed for Anna Rowell Designs provides a thoughtful and sustainable solution to the challenges of managing a creative small business. Rather than focusing on scaling or expansion, this system is designed to bring clarity and consistency to Anna's day-to-day operations. By organizing her sales, products, fulfillment, and marketing efforts into a unified and accessible structure, Anna can spend less time on logistics and more time on the creative work that makes her business meaningful.

The relational database mirrors how ARD operates, from pop-up sales to custom corporate orders, and is flexible enough to accommodate variation without becoming overly complex. Through dashboards and data views tailored to her actual questions – like which scents sell best or which events perform most reliably – Anna can make decisions with greater confidence and reduce the guesswork that comes with running a small, product-based business.

### Short-Term Recommendations – Start with what matters most

- Focus on core components like ProductOffering, Design, Sale, and SaleItem to track what's sold, when, and in what combinations.
- Choose a user-friendly tool to implement the first version.
- Begin using the Sales Insights dashboard to inform restocking, evaluate design and product performance, and guide future product launches.

### Mid-Term Recommendations – Expand as comfort grows

- Integrate fulfillment and packaging tracking to identify any bottlenecks or opportunities to streamline order processing.

- Leverage customer and location data to recognize repeat buyers and areas where the brand is gaining traction.

#### Long-Term Recommendations – Leverage for Creative Decision making

- Use marketing and discount tracking to understand what promotions resonate best with ARD's audience.
- Explore operational data to guide decisions about pop-up participation, bundling strategies, or design refreshes for creative alignment and thoughtful planning.

While a full-scale data warehouse isn't necessary for Anna Rowell Designs right now, the relational database was intentionally structured to support future analytics. Its clean, modular design ensures that if Anna ever wants to perform deeper historical analysis or integrate third-party tools – like accounting, marketing, or e-commerce platforms - her data can be easily extracted for this use. This future flexibility allows for scalable insights without disrupting the operational system she relies on day to day.

Overall, this relational operational database is built to grow with Anna's needs and designed to support intentional business decisions. It will support Anna in making decisions grounded in insight, align her energy with what works, and continue creating products that reflect her values and vision.

## Appendix A – Normalized Model

Note that this model is not in the full 3<sup>rd</sup> normal form. While it is normalized to reduce redundancy and support integrity, a few constrained fields (e.g. SaleType, FulfillmentMethod, PaymentMethod) are stored as direct entries with constrained values, rather than in separate lookup tables. This design choice is intentional to balance normalization with ease of use for the business owner.

Underline = Primary Key (PK) for table

*Italics* = Foreign Key (FK)

Dashed = Optional/Nullable FK

[Brackets] = Field with constrained values

### ProductType

<u>ProductTypeID</u>	ProductType
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### BaseProduct

<u>BaseProductID</u>	<i>ProductTypeID</i>	BaseProduct	ProductDescription
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### ProductVariant

<u>ProductVariantID</u>	<i>BaseProductID</i>	Size	Color	Scent
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### ProductOffering

<u>ProductOfferingID</u>	<i>BaseProductID</i>	<i><u>ProductVariantID</u></i>	<i><u>DesignID</u></i>	ProductLaunch	SalePrice	WebsiteName
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### Design

<u>DesignID</u>	Design	[DesignType]	TimeToCreate	<i><u>ParentDesignID</u></i>	<i><u>CollectionID</u></i>	<i><u>CustomerID</u></i>
-----------------	--------	--------------	--------------	------------------------------	----------------------------	--------------------------

### Collection

<u>CollectionID</u>	Collection	CollectionLaunch	Season
---------------------	------------	------------------	--------

### Bundles

<u>BundleID</u>	BundleName	LaunchDate	BundlePrice
-----------------	------------	------------	-------------

### BundleItems

<u>BundleID</u>	<u>ProductOfferingID</u>	<u>BaseProductID</u>	BundleQuantity
-----------------	--------------------------	----------------------	----------------

### SaleItem\*

<u>SaleItemID</u>	<u>SaleID</u>	<u>ProductOfferingID</u>	<u>BundleID</u>	SaleQuantity
-------------------	---------------	--------------------------	-----------------	--------------

\*For each SaleItem, exactly one of ProductOfferingID or BundleID must be provided – not both

### Sales

<u>SaleID</u>	<u>CustomerID</u>	<u>BillingAddress</u>	<u>ShippingAddress</u>	SaleDate	[SaleType]	SaleAmount	ShippingFee	SalesTax
<u>DiscountID</u>	[FulfillmentMethod]	[PaymentMethod]	<u>PopUpID</u>					

### Customer

<u>CustomerID</u>	[CustomerType]	CustomerName	CustomerEmail	CustomerPhone
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### Address

<u>AddressID</u>	<u>CustomerID</u>	[AddressType]	CustStreet	CustStreet2	CustCity	CustState	CustZip
------------------	-------------------	---------------	------------	-------------	----------	-----------	---------

### PopUp

<u>PopUpID</u>	EventName	Location	Organizer	EventDate	EventLenth
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### Discounts

<u>DiscountID</u>	[DiscountType]	Value	DisStartDate	DisEndDate	DisUseLimit
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### Fulfillment

<u>FulfillmentID</u>	<u>SaleID</u>	PackDate	ShipDate	DeliveryDate	TrackingNum	Carrier	ShippingCost
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### FulfillmentPackaging

<u>FulfillmentID</u>	<u>PackagingID</u>	FillPackQuantity
----------------------	--------------------	------------------

### Packaging

<u>PackagingID</u>	PackagingName	PackagingDescription
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### RestockItem

<u>RestockItemID</u>	<i>RestockID</i>	<i>PackagingID</i>	<i>ProductOfferingID</i>	RestockQuantity	RestockPrice
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\*Each RestockItem must reference a product or a packaging item, but not both

### Restock

<u>RestockID</u>	<i>SupplierID</i>	RestockOrderDate	RestockDeliveryDate
------------------	-------------------	------------------	---------------------

### Supplier

<u>SupplierID</u>	SupplierName	SupplierEmail	SupplierPhone	SupplierStreet	SupplierCity	SupplierState	SupplierZip
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### Marketing

<u>PostID</u>	Platform	PostDate	Caption	Likes	Comments	Reach	Engagement
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### ProductMarketing

<i>PostID</i>	<i>ProductOfferingID</i>
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### Constrained Values

Design Type: [Pattern, Design]

Sale Type: [Online, Pop-Up, Corporate]

Fulfillment Method: [Shipping, Delivery]

Payment Method: [Card, Cash, Venmo]

Customer Type: [Individual, Corporate]

Address Type: [Shipping, Billing]

Discount Type: [Percentage, Dollar]



## Appendix B – Data Generation with ChatGPT

I acknowledge the use of ChatGPT-4-turbo (<https://chatgpt.com/>) to generate mock data to use in the examples of database application. I entered the following prompts on April 4, 2025:

- Original Prompt: I'm going to share the tables I've created about products and offerings. Nothing to do yet, just sharing for later reference.
  - Uploads included - `Design`, `BaseProduct`, `BundleItems`, `Bundles`, `Collection`, `ProductOffering`, `ProductType`, and `ProductVariant` tables I had created in excel
- New Prompt: I want to work one table at a time, so I will share the final fields for each table with you as we generate them. CSV format please and I would prefer the data to be realistic. Let's start with the design table, can you help me fill in time to create (in hours). Assume that patterns generally take longer than designs. Assume that designs with a Parent design typically take less time too.
- New Prompt: Let's create some customer and address information. I've already entered a couple examples, but can you help me generate more? Maybe 100 customers (only a few corporate), and their associated addresses. For the addresses, let's do a mix of local to NC (Greensboro specifically) and others in the US. Make the data realistic - a specific customers billing and shipping address could be different, but are more commonly the same. About 80% of customers should have female names.
  - Follow-up prompt: Let's spilt apt and suite numbers into CustStreet2 column
  - Follow-up prompt: On the customer tables, let's make the phone number formatting the same (xxx-xxx-xxxx) since these are all US customers - the area codes for phone numbers should align with the customer's defined addresses too. Only corporate customers should have a phone extension. Let's make the emails more realistic too, most people's emails include their own name (what you have provided does not match their names at all)
- New Prompt: Great, now let's move on to generating sales data. First we need to generate some information on PopUp events and discount codes. Let's do 5 pop-up events all within the past 2 years. Location should be business name and address. Let's do 3 in Greensboro (one at Cyclebar GSO), one in Charlotte and one in Raleigh. Let's make just a couple of themed discount codes including free shipping (amount can vary based on calculated shipping fee), and birthday discount. Again, let's aim to make realistic data. The tables should include the following fields. PopUp: PopUpID, EventName, Location, Organizer, EventDate, EventLength. DiscountCode: DiscountCode, DiscountType (can be % or \$), Value, DisStartDate, DisEndDate, DisUseLimit

- New Prompt: Now let's work on sales data, Sales and Sale Items. Sales: SaleID, CustomerID (optional FK), BillingAddress(optional FK), ShippingAddress (optional FK), SaleDate, SaleType (online, corporate, or popup), SaleAmount, ShippingFee, SalesTax, DiscountID (optional FK), FulfillmentMethod [Shipping, Delivery, or Pickup], PaymentMethod[Cash, Card or Venmo], PopUpID(optional FK). SaleItems: SaleItemID, SaleID (FK), ProductOfferingID (optional FK), BundleID (Optional FK), SaleQuantity. For sales at PopUps, no customer, address or fulfillment information is needed. Orders for Pickup or delivery, must be for customers local to Greensboro. Orders for pickup or delivery use the FreeShip discount. Pickup Orders do not need a shipping address. Sales can include ProductOfferings and/or bundles. Only corporate customers can order items with their corporate designs. The SaleAmount, should reflect the quantity and prices of the SaleItems. Customers can have more than one sale. Items cannot be sold before their launch date. Make the data realistic and use other logic (like popup sales should be on the date of a popup event etc.). Let's generate 250 Sales and their corresponding SaleItems.
- New Prompt: Great, now let's generate some fulfillment data. Packaging: PackagingID, PackagingName, PackagingDescription. Packaging should include things like boxes, bags, shipping labels, thankyou cards, tissue paper, bubble wrap etc. Fulfillment: FulfillmentID, SaleID (FK), PackDate, ShipDate, DeliveryDate, TrackingNumber, Carrier, ShippingCost. Popup sales do not have any Fulfillment info. Delivery and Pickup sales do not have ship date, tracking number carrier or shipping cost. ShippingCost should be similar to the ShippingFee, but does not have to exactly match. FulfillmentPackaging: FulfillmentID (FK), PackagingID (FK), FillPackQuantity. PopUp sales have no packaging. Make the packaging used realistic based on the items ordered
- This is great! Now let's generate some restock orders that would cover all the items sold in this dataset and their packaging (including consideration for the dates of sales and the dates of restocks) while leaving some inventory remaining in stock. Restock orders are placed through Suppliers: SupplierID, SupplierName, SupplierEmail, SupplierPhone, SupplierStreet, SupplierCity, SupplierState, SupplierZip. Let's use like 7 suppliers and have them somewhat specialized based on the type of products or packaging they are supplying. For each Restock, we should capture, RestockID, SupplierID (FK), RestockOrderDate, and RestockDeliveryDate. We also need to capture the items in each Restock: RestockItemID, RestockID (FK), PackagingID (optional FK), ProductOfferingID (optional FK), RestockQuantity, RestockPrice. Each Restock order is with one supplier. A restock order can include both packaging and packaging if a supplier sells both. The Restock price for ProductOfferings should be less than the selling price.
  - Follow-up prompt: Less packaging focused vendors, more product focused vendors please (additional tables attached might help) and make their emails more realistic. Update the restock tables as necessary as well. (attachments included ProductType and BaseProduct Tables).

- Follow-up prompt: Condense the restock orders to only do maybe 30ish restock days over this sales period. Let's also structure the restocks so that there is never negative inventory.

The output from these prompts was refined and used in the examples of database applications and insights in tableau.