

# CIS 3343 – Fall 2025 Case Study

As of September 15<sup>th</sup>, 2025



## Business Overview

**Emily Bakes Cake** was founded by Emily Boudreax in 2003 and is in Houston, Texas. Emily does have a physical storefront where she sells her standard products: cakes, cupcakes, cookies, and pastries. Emily's specialty is her work customizing and decorating her European-Style cakes for her customers.

Emily's love of baking started when she was a young girl. Her grandmother, whom she lovingly called "Mommie", would often include Emily whenever she was baking desserts for the family. Mommie always said "Everyone should have one special cake for their birthday or big event in their lives." Emily continues to honor her grandmother by continuing that tradition.

Later in life, Emily spent a few years in Europe developing her skills as a baker. She spent several years in Paris working for a Boulangerie (Bakery) and a year in Salzburg. In Salzburg, Emily learned Bavarian and Austrian baking techniques.

Emily Bakes Cakes prides itself on the fact that they bake from scratch using her family's recipes combined with her European baking skills that she learned in Europe. This has resulted in robust sales at their physical store location near the Galleria.

While Emily Bakes Cakes continues to follow these traditions for their baking, this traditional approach has also affected their business processes. Their paper-based custom order tracking system is inefficient and prevents them from maximizing their revenue. Emily Bakes Cakes' sales staff currently spends about half of their time manually writing down custom cake orders.

The bakery loses around 3 to 5 orders per month by misplacing or accidentally throwing away papers with order details or by letting an order slip through the cracks and not producing the product on the day it was needed. On average, it costs Emily Bakes Cakes around \$4,800 per year. This lack of organization causes both a loss in immediate revenue, as well as future customer orders because of the reduced customer satisfaction and harm to the company's reputation.

The company's revenue is also affected by their ability to store previous customer data and orders. As a result, inefficiency in anticipating the desires of their customers. According to Emily's estimations, Emily Bakes Cake loses approximately 15% of their potential returning customers due to the lack of stored customer data. In addition, their web-portal is old and fails to properly support access from mobile-devices which limits the number of potential customers looking for customized bake goods.

## **Business Project Objective**

### **Objective Statement**

**To:**

- Create a Customer and Order Web Database Application

**In A Way That:**

- Reduces customer order time creation
- Reduces lost and duplicate orders
- Increases customer retention

**So That:**

- Hours spent tracking customer orders is reduced by 25%
- Costs of lost products due to order mismanagement is reduced by 80%
- The number of returning customers is increased by 15%

**Can be Measured By:**

- Decrease salesperson time spent creating and handling orders from 20 hours per week to 15 hours per week which reduces yearly operational costs from \$40,000 to \$30,000 by the end of year 3.
- Reduced costs associated with lost products from \$4,800 per year to \$960 per year by the end of year 2.
- The total number of returning customers has increased from 700 per year to 805 per year by the end of year three resulting in \$8,400 of additional sales.

## **Business Roles and Business Processes**

### **Emily**

Emily's primary role is the overall business owner and project sponsor. Emily works closely with James, the Bakery Manager. In addition, Emily is the Chief Decorator. If not busy, she can also serve as a baker or as a member of the sales staff. Emily also serves as the Bakery Manager when James is on vacation or away from the bakery.

### **James (Bakery Manager)**

James' primary role is to manage the day-to-day business of the bakery. James is responsible for ordering whatever is needed from the company's various Suppliers. James will directly oversee the Sales, Baking, and Decorating Staff (except for Emily).

### **Sales Staff**

The Sales Staff is responsible for selling products to "walk-in" customers. The Sales Staff also fill out Custom Cake orders. Once a custom cake order is completed, the Sales Staff places the custom orders in the Pink "To Be Created" basket located in the baking area. The Sales Staff are also the ones who hand out the custom cakes when a customer returns to pick up their custom order. At the end of each shift, the sales staff gives the money from their cash registers along with the associated credit card receipts to James.

### **Bakers**

The baking staff's primary role is to bake and assemble the cakes and the other standard products that are sold in the physical store. Each week, the Bakers tell James what baking ingredients are needed for the week. Regarding Custom Cakes, the decorators give their finished work to the Bakers who in turn bring the custom cakes to James for final approval. Bakers, if not busy, can also serve as sales staff.

### **Decorators**

The decorators' job is to decorate the assembled cakes provided by the bakers. The decorators are frequently consulted on the taking of custom orders. The Decorators also may have additional questions for the customer before and once decorating begins. Decorators, if not busy, can also serve as sales staff.

### **Accountant / CPA**

Dan, who is also Emily's cousin, serves as a part-time accountant for the business. Dan is a registered CPA. Dan works with James in the handling of the business receipts and business documents. Dan also handles all banking transactions. Dan provides weekly and monthly reports to James and Emily.

## Business Rules

- Never buy “ready-made” cake mixes.
- Each unique person is a customer.
- Customers can either be Retail or Corporate, not both.
- Certain “Preferred” customers can receive a discount of 10% at the discretion of Emily or the Bakery Manager.
- Corporate Customers can have more than one location, but a corporation should be considered a single customer.
- One Cake or Product per Order.
- Customers must pay at least 50% deposit on all custom orders.
- Cash, Debit and Major Credit Cards are the valid forms of payment.
- Customers can customize any of the “standard” cakes.
- Cup Cakes can also be customized. However, all cupcake fillings are done in the top center portion of the cupcake.
- Customized cakes should be ordered at least 2 days in advance. Exceptions can be made at the Store Manager’s discretion.
- For multi-tiered cakes, Layer 1 is always the bottom-most layer.
- Products can only be in one category. Products are categorized as follows:
  - Cakes
  - Pastries
  - Cup Cakes
  - Cookies
  - Petit Fours
  - Pies
  - Breads
  - Seasonal Products (limited availability per season)
- One cake layer can have no filling, one filling, or at most two layers of the same filling.
- Prices for decorated cakes are negotiated at the time of ordering. This is because the customization work may be very extensive, time consuming and required specialized decorating skills.
- Cakes should be completed and fully decorated at least 4 hours before the customer’s scheduled pickup day/time.
- The Bakery Manager or Emily must approve all completed customized cakes.
- Cake Orders can be cancelled prior to baking beginning. Decorations can be modified before decorating begins. However, decorating changes could result in a change of the quoted price of the finished product.
- Customers can provide photos, clippings, or example copies of their desired finished product. These examples will be evaluated to determine the feasibility of being replicated by our Cake Decorators. Cake Decorators will make the final decision.

## **Business Requirements**

After an initial interview with Emily, the Project Sponsor, stated that she wants the project to focus on the Custom Cake Order side of the business. The standard walk-in side of the business is working well. Regarding custom cake ordering, she identified these **Initial High-Level Requirements** for the project

### **1. Customer Management**

The system should allow Emily Bakes Cake to input customer information and use this information as desired by the business. The system should provide additional marking functionality, such as the ability to pull up email lists and phone number lists. Overall, this requirement is one of the highest priorities and is categorized as mandatory by the Sponsor.

### **2. Order Creation and Tracking**

The system should enable the bakery to create orders for customized orders by selecting a product and a customer. The system should remind the bakery when orders need to be made and update the status of orders as needed. Finally, the order should track who was the last employee working on an order. Overall, this requirement has the second priority, and it is categorized as mandatory.

### **3. Product Management**

The system should allow the bakery to capture all their pricing information for their products and product options. The product data should be updatable as needed when prices change, or the products offered are changed. Overall, this requirement has the third level of priority. This requirement is categorized as key to the Sponsor.

### **4. Optional Updated Website**

A newly revised customer-facing website should be created that has an improved user interface and provides more information about the bakery and its products. This overall requirement has the fourth level of priority and is optional at this time.

**NOTE:** Inventory Management is NOT in scope.

## Product Options

### Standard Cakes

*Birthday Celebration*  
*Almond Delight*  
*Lemon and Cream Cheese*  
*Black Forest*  
*German Chocolate Cream Cheese*  
*Chocolate Ganache*  
*Italian Cream*  
*Lemon Doberge*  
*Chocolate Doberge*  
*½ & ½ Doberge Cake (Lemon and Chocolate)*  
*Pecan Praline Cream Cheese*  
*Chocolate Banana*  
*Strawberry Delight*  
*Cookies and Cream*

### Cake Flavors

*Vanilla, Almond, Yellow, Devil's Food Chocolate, Chocolate, Strawberry*

### Filling Flavors

*White Buttercream, Chocolate Buttercream, Almond Buttercream, Cream Cheese, Lemon Curd, Strawberry, Rum/Strawberry, Raspberry, Pecan Praline, Chocolate Mousse, Lemon Mousse, Strawberry Mousse, Raspberry Mousse, White Chocolate Mousse, and Mango Mousse.*

### Icing Flavors

*White Buttercream, Chocolate Buttercream, Almond Buttercream, White Chocolate Buttercream, Cream Cheese, Chocolate Ganache*

**Cake Sizes with prices as of 10/2/2024**

- 6-inch Round Double Layer (Serves 4-6) - **\$20**
- 8-inch Round Double Layer (Serves 12-15) - **\$30**
- 10-inch Round Double Layer (Serves 25-30) - **\$60**
- 12-inch Round Double Layer (Serves 35) - **\$100**
- 14-inch Round Double Layer (Serves 40) - **\$140**
- 16-inch Round Double Layer (Serves 85) - **\$180**
- $\frac{1}{4}$  Sheet Double Layer (Serves 15-20) - **\$40**
- $\frac{1}{2}$  Sheet Double Layer (Serves 30-50) - **\$100**
- Full Sheet Double Layer (Serves 90-100) - **\$200**

**Icing and Writing Colors**



### **Additional Cake Decorations**

- Buttercream Flowers
- Fondant Decorations
- Silk Flowers (Iris, Rose, Daisy, Lily)
- Silk Butterflies
- Edible Sugar-Based “Photos” (Customer Provided Photos)
- Toy Trains
- Plastic Dinosaurs
- Various Dolls
- Construction Toys
- Plastic Deer, Squirrels, Rabbits
- Camping Tent, Camping Fire
- Race Cars
- Plastic Ballet Slippers
- Plastic Baby Rattles
- Plastic Baby Bottle
- Plastic Fish
- Plastic Pine Trees
- Plastic Palm Trees
- Fleur-de-Lis pics
- Rock Candy
- Plastic Graduation Cap
- Plastic Balloons
- Plastic Firework Explosions
- Ribbons (Red, Blue, Pink, Purple, Gold, Silver, Yellow, White, Green, and Black)
- Plastic Star Explosion Insert
- Paper Parasols
- Plastic Pics (Flamingos, Fish, Mermaids, Flip Flops, Seashells)
- Flags (US, Canada, Mexico)
- Plastic Sports Equipment (Goal Posts, Soccer Nets, Basketball Nets)
- Rainbows

### High Level Project Timeline

Stage/Phase	Deadline
Project Initiation	Monday, October 13 <sup>th</sup> , 2025
Analysis	Monday, November 10 <sup>th</sup> , 2025
Required System Design	Monday, January 26 <sup>th</sup> , 2026
Application Coding/Testing	Monday, April 27 <sup>th</sup> , 2026
Implementation	Monday, May 11 <sup>th</sup> , 2026
Project Closure	Monday, May 18 <sup>th</sup> , 2026

### Current Technical Infrastructure

Currently, Emily Bakes Cakes' Internet Service Provider (ISP) is Comcast/Xfinity. The current monthly contract is for 800 Mbps speed. The company is also renting a modem and router from Xfinity. The company has one Windows-based desktop machine in the baking/decorating space. Emily and James have their own company-provided laptops which connect to the internet using their Wi-Fi access via their ISP. The desktop is 4 years old and the laptops are 3 years old. There is a basic Canon color multi-function printer.

Emily Bakes Cakes also has a Point-of-Sale Cash Register along with one Credit Card Processing machine.

The bakery also has 1 Icingsinks Cake Topper Image Printer.

### \*\*\* NOTE - Case Study Disclaimer

*The information contained in this case study is to be used only as a case study example for teaching purposes. The information in the case study is both factual and fictional. Statements and opinions formulated by the author are intended to stimulate class discussion for project completion purposes. Thanks goes out to my previous students whose past projects have contributed to this case study.*