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# SYD 366 Software Analysis and Design – I

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2023-12-06

Abstract

In pursuit of bolstering Victoria's Bakery's financial inflow, this assignment delves into a pivotal aspect of transitioning Victoria's business into the digital realm. Building on preceding assignments, the focus is on defining a critical missing component crucial for the successful migration online. The assignment further extends its scope by developing a robust framework for deploying promotional emails aimed at engaging and expanding the customer base. This strategic initiative aligns with the overarching goal of enhancing business revenue by leveraging digital channels and targeted promotional strategies.

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User Story

As a bakery owner, Victoria seeks to elevate sales by sending promotional emails that enhance customer satisfaction, provide discounts, and entice both new and existing customers to return. Her objective is for these emails to gain viral traction, attracting new customers while rekindling interest among existing ones. Victoria is keen on implementing a marketing strategy focused on sending targeted promotional emails to coincide with trending events and holidays. By offering discounts or free items tailored to each event, she aims to boost sales and acquire new customers effectively.

### Acceptance Criteria:

a) Must be able to create, modify, and delete an event.

b) Must be able to query a list of existing events between two specified dates

**Rational**

Promotional emails drive sales, boost brand awareness, and foster brand loyalty among current customers. This dynamic marketing method sparks creativity and sets a unique tone against competitors, achieving growth by allowing customers to access messages at their convenience. Targeting trending events and holidays enhances customer engagement, leading to increased purchases at discounted rates.

As the business landscape pivots towards the digital realm, maximizing profits through online platforms becomes essential. In a prior assignment, our team recommended that Victoria implement an online ordering system to broaden her reach, enhance planning, minimize food waste, and ensure food security for clients, both current and future.

With a diverse team of professionals—including developers, business administrators, healthcare experts, designers, linguists, and marketing specialists. —our collective insights identify the next crucial step for Victoria's digital transition: sending promotional emails. This strategy encourages customers to log in, use promo codes, and enjoy discounts during holidays and special events.

This approach not only holds the potential to amplify interest among current clients, promoting loyalty and savings, but also presents the opportunity to go viral. Customers can share these emails and promo codes, potentially attracting a larger influx of business.

Event Creation: Use Case

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **Add an event** | | |
| Triggering Event | Holiday, or trending event that increases traffic to Victoria’s business | | |
| Brief Description | Allows owner to create an event | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened main menu | | |
| Post Conditions | A new event is saved and added into events | | |
| Flow of activities | Actor | | System |
|  | 1 | Request to add a new event | * Displays a calendar. * Prompts user to select date for event. |
|  | 2 | Select start date, and end date.  Enters description, name. | * Verifies inputs are valid. * Prompts user to add products affected by event. |
|  | LOOP | Chooses a product | * Displays a list of products and prompts user for selection. |
|  | 3 | Selects a product | * Display product details. |
|  | 4 | Adds discount percentage and description | * Parallel to the selected product: * add discount rate for each item. * add description of discount. |
|  | END | When all products and associated discount rate and description added | * Prompt user to verify event and save. |
|  | 5 | Chooses to save. | * Saves the event and returns to main menu. |
| Exception Conditions | Owner decides to cancel event creation. | | |

Query an event: Use Case

|  |  |  |  |
| --- | --- | --- | --- |
| **Use Case Name** | **Query an event** | | |
| Triggering Event | Display event contents to be sent to customers | | |
| Brief Description | Allows the owner to view the contents of promotional email | | |
| Actors | Owner | | |
| Related Use Cases |  | | |
| Preconditions | Owner has opened main menu | | |
| Post Conditions | An event is retrieved and displayed | | |
| Flow of activities | Actor | | System |
|  | 1 | Request to query events | Displays calendar |
|  | 2 | Select date range | * Verify date selected. * Retrieve list of events for date range selected. * Calculates accumulated number of discounts. * Displays events and total discount to user. |
|  | 3 | Request to exit | Returns user to main menu. |
| Exception Conditions |  | | |

Class diagram

A screen shot of a computer code

Description automatically generated

A diagram of a project

Description automatically generatedSequence diagram: Create

A diagram of a computer program

Description automatically generated with medium confidenceSequence diagram: Query

Speech and Lineup

### Julia Alekseev

Hello everyone,

I'm Julia, and with our team—Audry, Minji, Evelyn, and Hyeri—we're excited to present a brief but impactful case study for Victoria's shop.

Building on our previous recommendation to move Victoria's business online, we propose adding promotional emails. These emails offer exclusive discounts, promoting new products, retaining customers, encouraging repeat business, and facilitating referrals. This strategy boosts visibility, engagement, and customer loyalty.

In a nutshell, by integrating promotional emails, Victoria can enhance her online business quickly and effectively.

### Audrey Duzon

So, our team designed the use cases and the sequence diagram for our client to support this strategy.

Our acceptance criteria ensures that our client will be able to create, modify, delete, and query events.

In this use case, creating an event:

Our client has the full control of the following:

* date range, description, name
* products and the specific discounts for each

Our second use case focuses on querying an event.

Our client must simply select a date range to show the event details and total calculated discount.

A 3rd potential use case for our client would focus on sending the email event to our client's customers.

Since our current system design allows for storage of customer information,

We will utilize these classes to implement this functionality in the future.

### Evelyn Kim

This is our team's class diagrams that we made for our client.

First, we have the Event class diagram. In this diagram, there are variables like integer eventID, string eventName, time\_t startDate and endDate which indicates the event's starting date and ending date. Also, there is a description string, an array list that stores the Products, and a double variable that stores the total discount amount for an event.

Next, for the Product class diagram, we have the product ID, product name, product's price, the discount rate for the product, and the description.

These diagrams have getters and setters for each of the variables, and the association of these class diagrams are that the Events have discount applied for Products in a 1 to 0 or greater relationship.

### Minji Kim

A user, identified as Victoria in this case, initiates the creation of an event through this sequence diagram. Upon entering the calendar, they provide event details. The system responds by creating an event object, returning it to the user.

Each event includes a product list for discounts. The user then requests a product list for inclusion in the event, prompting the system to retrieve products from the Entity Manager.

To facilitate the addition of selected products, we implement a loop that calls the product ID. As the user enters product information, including the discount rate and description for each item, the system calculates and applies the respective discounts and descriptions to the products.

Once all products, along with their associated discount rates and descriptions, are added, the system prompts the user to verify the event before saving. Upon the user's decision to save, the new event is stored, and the system returns to the main menu.

### Hyeri Jang

I’m going to walk you through our sequence diagram that illustrates the process of querying events over a specific period.

Firstly, the sequence begins when a user requests to query events. Upon this request, the system prompts the user with a calendar interface. This interface allows the user to input a start date and an end date for the query.

Once the user inputs these dates, the system retrieves events that fall within the specified period. The key functionality here is not just fetching the events, but also computing the extent of discounts applied on products during these events.

The system calculates the number of products that were discounted and presents this information to the user. Additionally, it sums up the total discounted prices of all products for the entire duration of the events.

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