Storing & Retrieving Data Project

Group 56

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Business Process Description

Since the outbreak of the COVID-19 pandemic, the number of digital solutions has increased significantly. Considering related challenges, in 2020 we developed a digital solution for the delivery of beverages called MARKET. We cooperate with various supermarkets of different characteristics and agreed contingents in Lisbon and Aveiro. Our turnover is generated by a 30% fee on every order. This income also pays our staff, drivers and other business expenses.

We are pursuing a long-term growth strategy with the goal of increasing our sales exponentially over the next 5 years by expanding into additional cities. Moreover our business concept is highly profitable, as we do not have any costs regarding rent for warehouses, material-management and procurement. Regardless of the pandemic, our app will remain highly relevant to customers of all ages as carrying drinks represents a high effort. On top of that, we remain highly competitive by offering high quality products for an affordable price in an remarkably inclusive application. Finally, our cutting edge algorithms communicate with a suitable driver already before an order is finished. This ensures minimal delivery times and a very high customer satisfaction at a very low margin of error.

Our digital solution can be obtained via any App-Store. After downloading MARKET, the consumers are asked if they would like to register only as a *user* or as a *driver* as well and then need to add mandatory information about their *location- contact- and payment-details*. Based on the *location*, available *supermarkets* are shown in the app filtered by *weekdays* and *opening hours*. This information is passed to the database to be associated with the available *items* and current *promotions*.

The database controls the availability of *supermarket items* through a stock that holds the agreed contingents with the supermarkets and the respective prices, as each supermarket that enters a partnership with us is allowed individual prices. This ensures competition on the app and thus low prices for our customers. Price updates are recorded together with the admin who triggered the change and the old price in the *log* table, to ensure traceability and to prevent fraud.

Before an order is placed a trigger makes sure that the desired supermarket is open. Then, after the desired items are chosen and an order is placed, the database triggers are executed. This updates the *payment* table, calculates the total order value and checks for the user's payment information. At this stage, a discount can be added and the service's fee will be charged. In parallel, the quantity of the *order items* are recorded and the stock is updated equivalently. Simultaneously, an *invoice* is generated that adopts all relevant information.

As soon as the driver receives the information about the *order* and *order items*, the beverages are collected from the selected supermarket and delivered to the customer's address.

After a successful delivery, the customer is able to leave a *rating* regarding the overall satisfaction of the order in the app. The personal data of our users and drivers is stored according to the GDPR standards and can be deleted upon request.

invoiceheader

invoicedetails

reviews
- Review_ID INT
- Order_ID INT
- Rating INT
- Comment VARCHAR(255)
- Indexes

payments
- Payment_ID INT
- Order_ID INT
- Total FLOAT(6,2)
- Fee FLOAT(6,2)
- Payment_info VARCHAR(255)
- Indexes

log
- log_ID INT
- admin_id VARCHAR(255)
- Change_time DATETIME
- Super_Item_ID INT
- Old_Price FLOAT(6,2)
- New_Price FLOAT(6,2)
- Indexes

users
- User_ID INT
- Contact_ID INT
- Indexes

orders
- Order_ID INT
- Supermarket_ID INT
- Promo_Code VARCHAR(255)
- User_ID INT
- Driver_ID INT
- Order_Date DATETIME
- Indexes
- Triggers

order_items
- Order_ID INT
- Super_Item_ID INT
- Quantity INT
- Indexes
- Triggers

drivers
- Driver_ID INT
- Contact_ID INT
- employment_start_date DATE
- Indexes

promotions
- Promo_Code VARCHAR(255)
- Promo_Name VARCHAR(255)
- Discount FLOAT(2,2)
- Start_Date DATE
- End_Date DATE
- Indexes

supermarket_items
- Super_Item_ID INT
- Item_ID INT
- Supermarket_ID INT
- Item_Price FLOAT
- Stock INT
- Indexes
- Triggers

supermarkets
- Supermarket_ID INT
- Location_ID INT
- Supermarket_NAME VARCHAR(40)
- Indexes

opening_hours
- Opening_ID INT
- Supermarket_ID INT
- Weekday_ID INT
- Opening_time TIME
- Closing_time TIME
- Indexes

country
- country_ID INT
- country_name VARCHAR(50)
- Indexes

items
- Item_ID INT
- Item_Name VARCHAR(50)
- Item_Brand VARCHAR(50)
- Item_Category VARCHAR(100)
- Indexes

weekdays
- Weekday_ID INT
- Weekday VARCHAR(9)
- Indexes

city
- city_ID INT
- city_name VARCHAR(50)
- country_ID INT
- Indexes

contact
- Contact_ID INT
- Location_ID INT
- First_Name VARCHAR(255)
- last_name VARCHAR(255)
- Gender VARCHAR(255)
- Phone_number VARCHAR(15)
- E_Mail VARCHAR(255)
- Bank_Info_MD5_Hash VARCHAR(255)
- Indexes

location
- Location_ID INT
- Street_Name VARCHAR(255)
- House_NR VARCHAR(5)
- Postal_Code_ID INT
- Indexes

postal_codes
- postal_code_id INT
- postal_code VARCHAR(7)
- city_id INT
- Indexes