**Scala project documentation**

 **Case Class:**

* Transaction: Represents a transaction with attributes like: timestamp, product name, expiry date, quantity, unit price, channel, and payment method.

 **Parsing Functions:**

* parseTimestamp: Converts a string timestamp to a LocalDateTime object.
* parseDate: Converts a string date to a LocalDate object.

 **toTransaction Function:**

* Parses a line from the CSV file and creates a corresponding Transaction object.

 **Functions that check for every rule:**

* islessThan30DaysRemaining: Checks if the expiry date is within 30 days from the transaction timestamp.
* isSpecialDate: Checks if the transaction date is March 23rd.
* isCheese : Check if the product name contains "cheese" .
* isWine : Check if the product name contains "wine" .
* isQuantityEligible: Checks if the quantity is greater than 5.
* isVisa : checks if the payment method is visa
* isApp : check if the transcation ‘s channel is app

 **calculateDiscount Function:**

* Calculates the discount for a transaction based on various rules:
  + Expiry discount based on days remaining to expiry (higher discount for closer expiry).
  + Special discount (50%) if the transaction date is March 23rd.
  + Quantity discount based on the number of items purchased (higher discount for larger quantities).
  + Cheese discount for cheese products (10%).
  + Wine discount for wine products (5%).
  + Visa discount (5%)
  + App discount ( based on the quantity : from 1 to 5 discount = 5%
  + And from 6 to 10 discount = 10 and etc ..)
* Sorts the discounts in descending order and takes the two largest discounts.
* Calculates the final discount as the average of the two largest discounts and divides it by 100 to be a percentage.

 **processTransaction Function:**

* Takes a Transaction object and calls calculateDiscount to get the discount.
* Formats a string with transaction details and the calculated discount.

 **Processing and Writing Data:**

* writeLine: Helper function to write a line to the output CSV file.
* Writes the header row with discount information to the output file.
* Processes each line by creating a Transaction object, calculating the discount using processTransaction, and writing the formatted data with discount to the output file.
* Closes the output file writer.