Instructions for Submission of Assignment

You are to submit the following documents by 18 Feb, 23:59:

a) Schema Diagram designed in Workbench
b) Schema Creation Script with Relevant Insert for tables in the schema
c) SQL Script with the statements for the two reports
d) A **pdf** copy of your schema.

The name of each file should be your name as per your NRIC.
Zip all the files into a single folder. The name of the zipfolder should be your name as per your NRIC.

Refer to the elearning package on Workbench to create create schema diagram, insert data into tables, generation of schema creation and saving of SQL scripts, and export of schema diagram as pdf document.

Late submission will result in 10% deduction of marks for each day late.

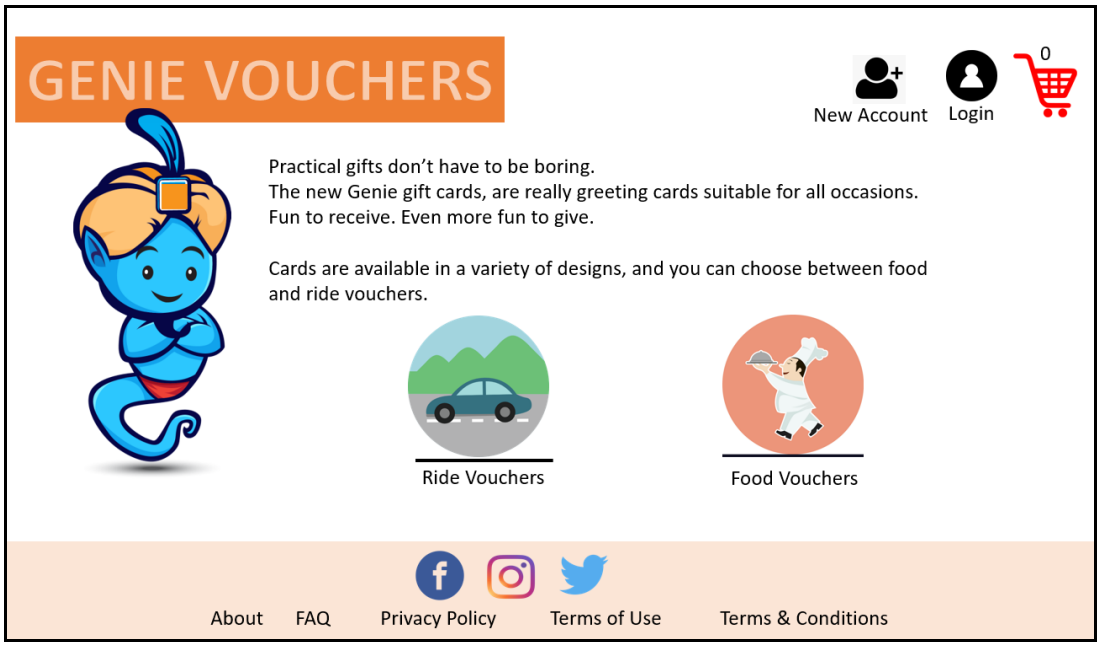
Assignment Question

1. Genie Technologies offers ride-hailing, food, and package delivery services. Customers use the Genie Logistics App to hail rides, rent vehicles, order food takeaways and request for package delivery services.

2. They have received feedback from its customers that they would like to buy vouchers as gifts for friends and loved ones where the vouchers can be used for services provided in the Genie's Logistics app. Hence, it was decided to develop the **Genie Voucher app** to meet the customers' request.

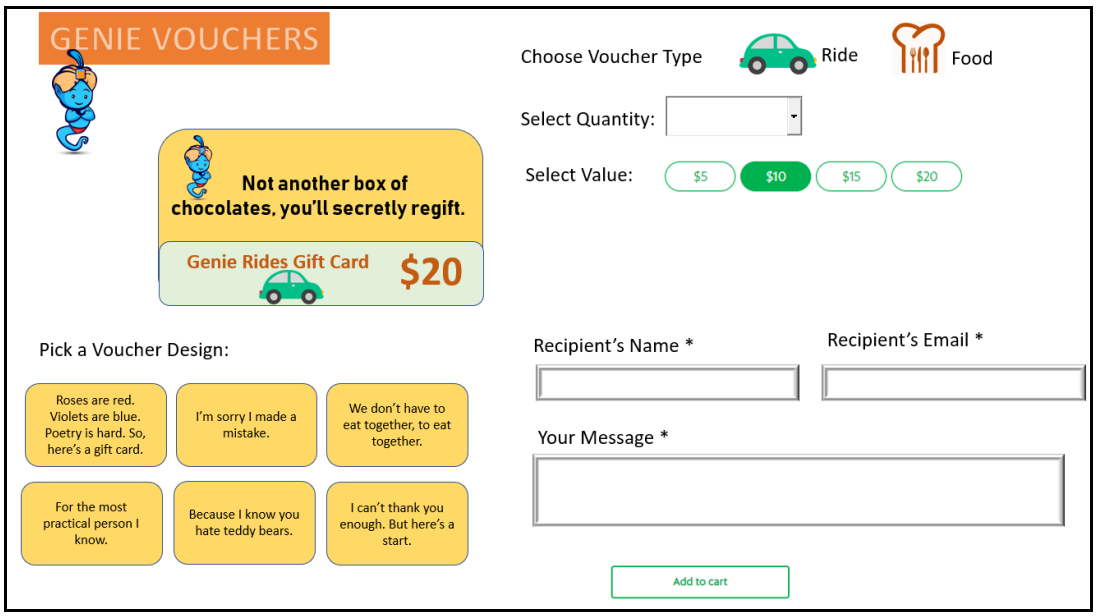
3. The project team for the Genie Vouchers app has completed designing the user interfaces for the app. As the member responsible for the database design, you are to draw an Entity Relationship Diagram (ERD) to support an e-voucher purchase app for Genie Technologies based on the user interfaces (UI) and business requirements given.

4. The first User Interface the customer sees is the home page.(Refer User Interface 1). From there the customer can select to purchase ride or food vouchers.



User Interface 1

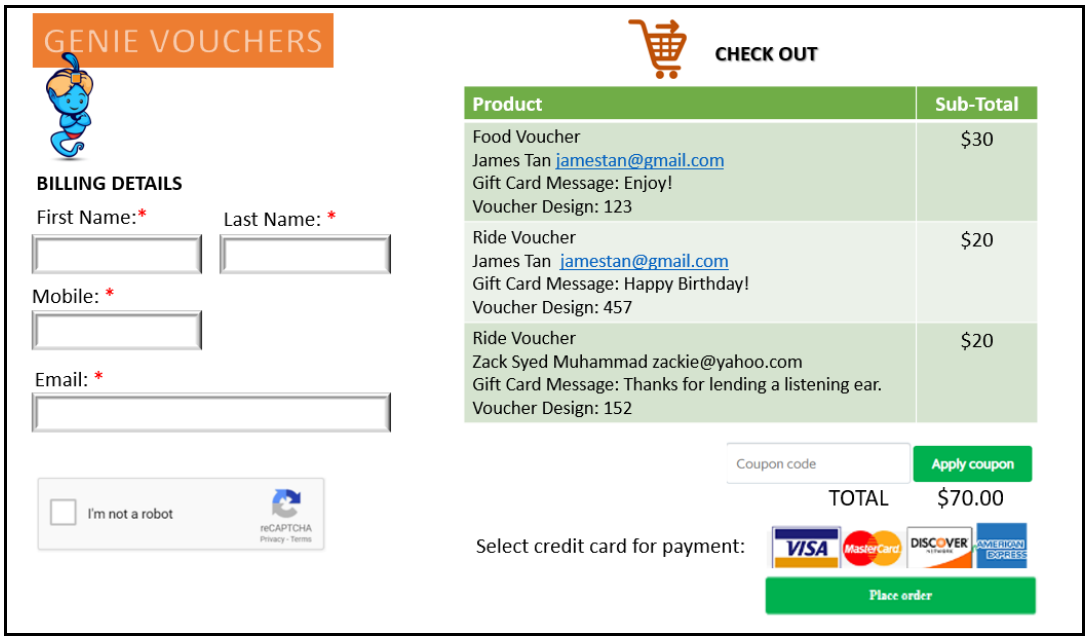
5. The customer will then decide on the details of the vouchers to purchase including its design, voucher value and quantity. The designs for ride vouchers may differ from food vouchers. The customer can add a personalized message for each gift card. Customers can choose to purchase multiple vouches and each voucher may be either for food or rides. (Refer User Interface 2)



User Interface 2

6. The customer can view his/her shopping cart at any time. (Refer User Interface 3) When ready, the customer will then proceed to check out the shopping cart. (Refer User Interface 4)

User Interface 3



User Interface 4

7. Occasionally, Genie Technologies incentivize customers to purchase vouchers by giving discounts in the form of coupons. The customer will enter the coupon code into the app during checkout to receive discounts for their orders. Coupon codes have start and end dates. If the customer enters the promotion code during its validity period, then the customer will be given the discount based on the coupon code entered. Only one coupon can be used per order.

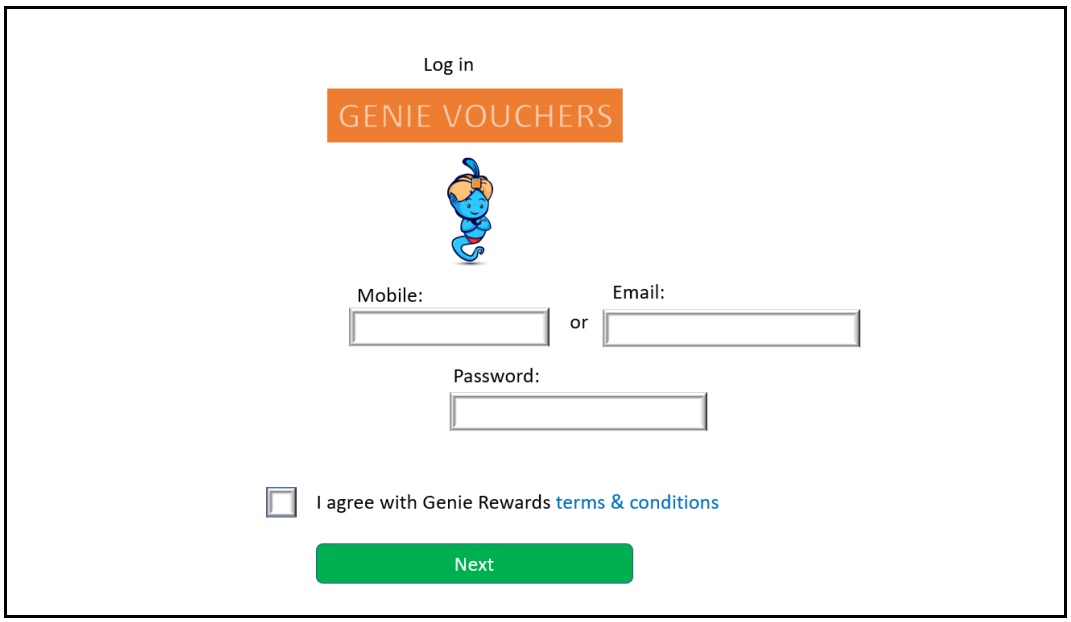
8. At checkout, the customer must provide his/her account details and decide which payment card he/she wishes to use to pay for the purchases.

9. Payment processing is done outside of the app via the payment card's authorization system. The URL for each of the payment mode's authorization system is kept in the database.

10. Once payment is confirmed, the payment mode's authorization system will return a payment reference number which serves as proof of payment of the transaction. An email with a unique transaction ID with details of the order including the timestamp of the order will be sent to the customer's email to confirm the order.

11. Customers also accumulate points for each order they place. However, the points for each order is not kept at the order level but summarized in the customers' profile. Customers redeem their accumulated points for rewards when they purchase rides or order food delivery at Genie's Logistics app.

12. The account details would be pre-populated if the customer has logged in successfully earlier with his/her email or Mobile, and password. (Refer User Interface 4) The authentication for access to the app and password management is managed by an external party and so passwords are not stored in the app's database.



User Interface 4

13. If this is the first time the customer is purchasing a voucher with Genie Vouchers, then the customer must register an account by providing the following data:

    a) Name

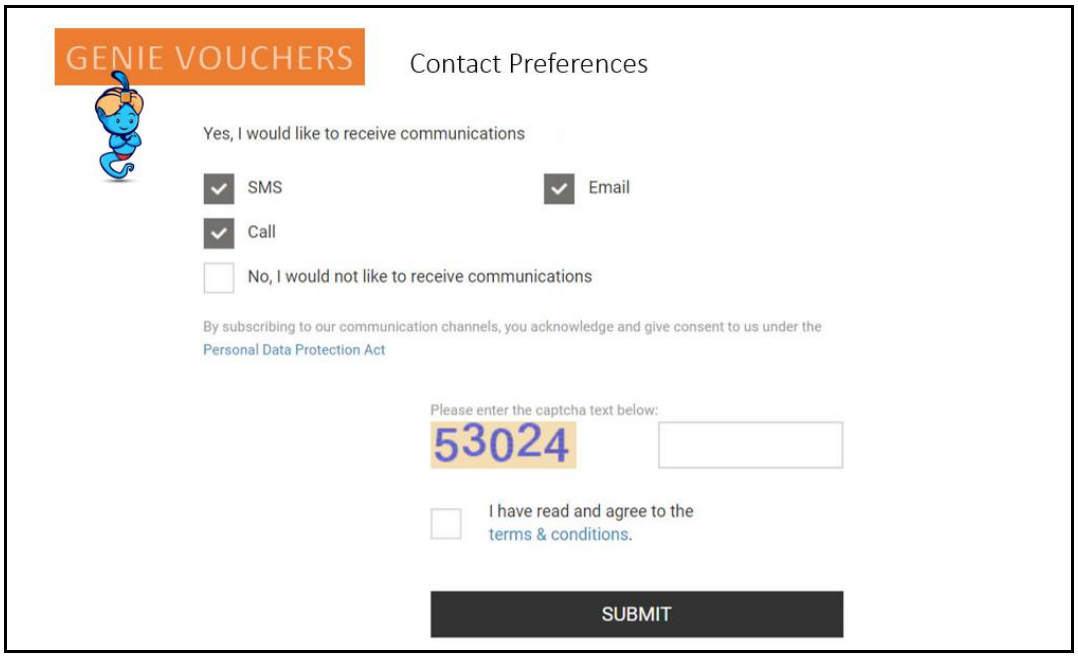
    b) Email

    c) Mobile Number

    d) Date of Birth

14. The customer's registration details are used to create the customer's account.

15. At account registration, the customer must also indicate his/her preferred mode of communication in User Interface 5.



User Interface 5

16. Customers can view the points accumulated by him/her for purchases in his/her profile summary.

17. A customer's account will be suspended if there was no activity during a 3-month period. The customer can re-activate his/her account by requesting a reset of his/her password.

18. Upon successful payment for the order, the app will generate vouchers for the products ordered. The number of vouchers generated will be based on the quantity number specified for each product in the order. To facilitate audit and prevent fraud, each voucher will have :

    a) a unique voucher ID

    b) the voucher's expiry date

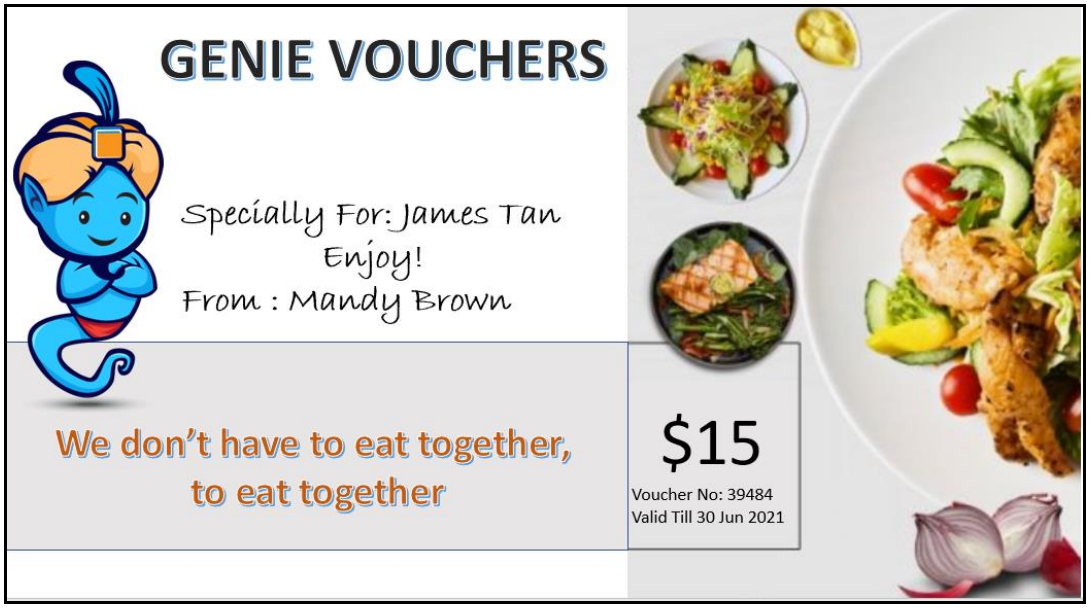
    c) the datetime stamp the voucher is issued

19. As illustration, based on the order placed in User Interface 3, the app would generate and send the following vouchers to the recipients with the design and message as indicated in the order:

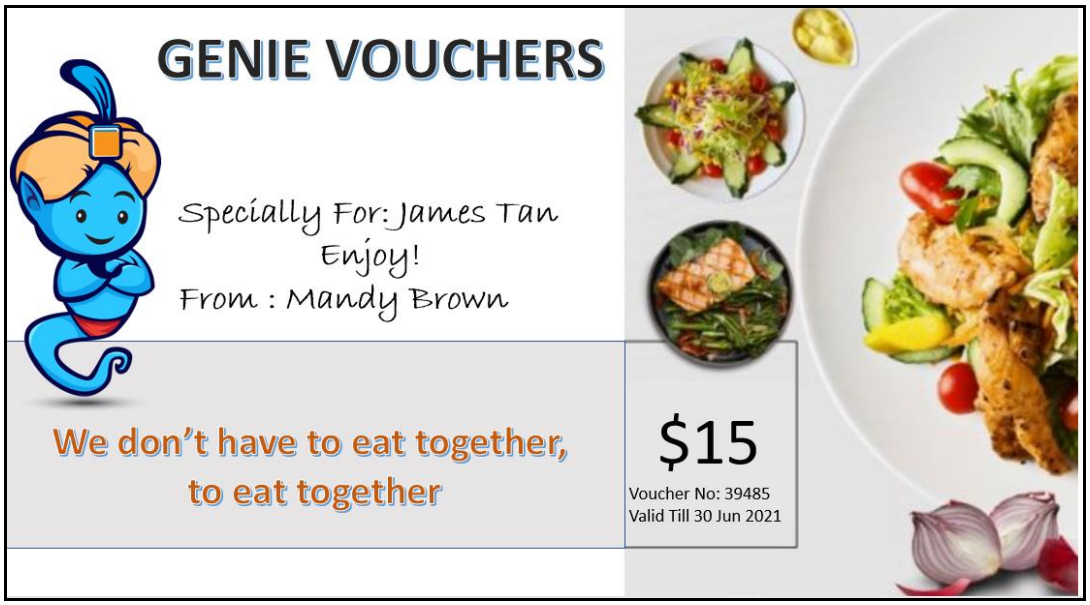
    a) Two food vouchers each worth $15; voucher IDs 39484 and 39485 for James Tan. (Refer User Interface 6 & 7).

    b) One ride voucher worth $20 with voucher ID 8881 for James Tan. (Refer User Interface 8).

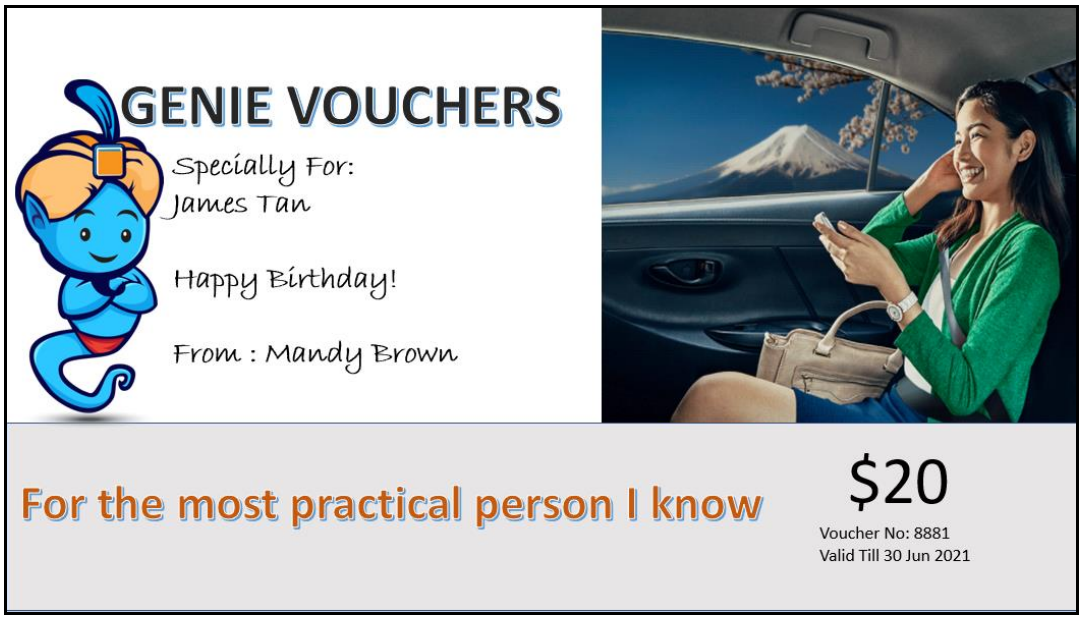
    c) One ride voucher worth $20 with voucher ID 8882 for Zack Syed Muhammad. (Refer User Interface 9).



User Interface 6



User Interface 7



User Interface 8

User Interface 9

20. You are also to write SQL to generate two queries which must meet the following requirements.

    a. A summary report that employs table and column aliases and minimially at least one filter, two INNER JOINS, one SQL Aggregate, GROUP BY functions. In the design of your report, you need to specify your target audience or role and how you envisage the report would be used by the target audience.

    b. A daily list of orders placed by customers providing details of the orders including order date, customer email, order number and details of each voucher in terms of the email of the voucher's recipient, type of voucher and the voucher's value. The list is to be sorted by voucher type and voucher ID.

21. You are expected to test the SQL you wrote for your reports based on your schema design. To do this you will have to:

    a. Populate relevant tables with data

    b. Generate the SQL schema creation script.

------- End of Assignment Question -------