BC2402
Business Case (Wk 9)

Question

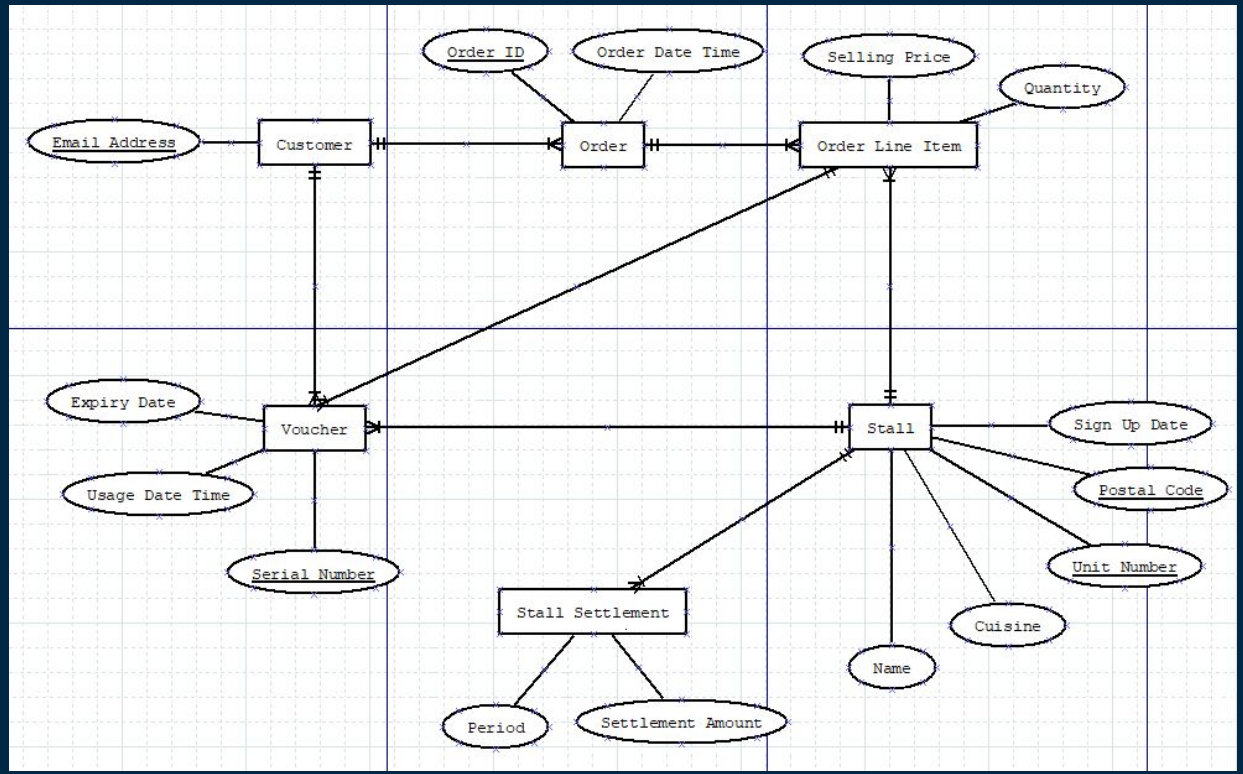
After the pre-paid voucher success, ShiokFood! has stepped up with another new initiative. This time partnering with students from institute of higher learning, ShiokFood! has launched a mobile application that allows customers to buy e-vouchers from their favourite hawker stall at a discount. **The more vouchers bought, the more discount the customer can get**!

Each set of e-vouchers comes with 5 e-voucher, with each valued at $2. The basic discount is 2%. So, if a customer purchase only one set of 5 e-vouchers, the customer will need to pay $9.80. If a customer buys 3 sets from the same stall in one transaction, the customer can enjoy a 5% discount. If the customer buys 5 sets from the same stall in one transaction, the customer will enjoy a 10% discount. To encourage hawker stalls to sign up, all proceeds gained in the first month on the platform will go to the hawker stall. Thereafter, ShiokFood! charges a **nominal 0.5%** to upkeep the service.

To use the voucher, the customer can simply display the QR code associated with the voucher redemption. The hawker operator can then scan the QR code to validate the e-voucher. E-voucher are **valid for one month** from the date of purchase. E-voucher **can be transferred to another user**. E-voucher **can only be utilized at the specified stall**

Unlike the previous pre-paid voucher program, this project is **opened to all hawker stalls island wide**.

Entity Relation Diagram



Consideration

Main use cases in real life

- We can see the settlements for each stall
- A customer can see their order history at a glance e.g. datetime and amount paid
- A customer can see all of their vouchers, regardless of whether they purchased it

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Design considerations and goals

- Minimum duplication of information
- Easy and computationally-light approach in retrieving data for the main use cases

Collection 1: **Stall**

```
{
    ID: "STORE_123",
    PostalCode: 123456,
    UnitNo: 1234,
    Name: "Yummy Noodles",
    Cuisine: "Chinese",
    SignUpDate: 2020/01/01,
    StallSettlement: [
        { Period: 1, Amount: 100 }
    ]
}
```

Collection 2: **Customer with embedded Orders & OrderLines**

```
# e.g. user purchased 1 sets of vouchers from STORE_123
{
    Email: "tom@gmail.com",
    Orders: [
        OrderID: 10001,
        OrderDateTime: "2021/10/10 12:34",
        OrderLine: [
            {
                SellingPrice: 9.8,
                Quantity: 1,
                StallID: "STORE_123",
                VoucherSerialNos: [
                    80000001, 80000002, 80000003, 80000004, 80000005
                ]
            }
        ]
    ]
}
```

Collection 2: **Customer with embedded Orders & OrderLines**

```
# e.g. user purchased 3 sets of vouchers from STORE_123 and 5 sets of
vouchers from STORE_456
{
    Email: "ricky@gmail.com",
    Orders: [
        OrderID: 10002,
        OrderDateTime: "2021/10/10 12:34",
        OrderLine: [
            {
                SellingPrice: 28.5,
                Quantity: 3,
                StallID: "STORE_123",
                VoucherSerialNos: [ ... ]
            },
            {
                SellingPrice: 45.0,
                Quantity: 5,
                StallID: "STORE_456",
                VoucherSerialNos: [ ... ]
            }
        ]
    ]
}
```

Collection 3: **Vouchers**

```
# original owner
{
    SerialNo: 80000001,
    ExpiryDate: 2021/11/09,
    OwnerEmail: "tom@gmail.com"
}

# voucher transferred to new owner peter@gmail.com
{
    SerialNo: 80000001,
    ExpiryDate: 2021/11/09,
    OwnerEmail: "peter@gmail.com"
}

# voucher used
{
    SerialNo: 80000001,
    ExpiryDate: 2021/11/09,
    OwnerEmail: "peter@gmail.com",
    UsageDateTime: "2021/10/10 12:34"
}
```

THANKS

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