

## CPT203 Software Engineering 1

### Tutorial – Sequence Diagram

#### Question 1: Badminton Course Reservation

Produce a sequence diagram for the following badminton course reservation process

Badminton court reservation involve the following process. The player calls up the stadium to make reservation. Only Member can make reservation. The player (who is also the Member) tell the clerk his preferred date and time. The player can also ask the clerk for available Time Slot in general. After the clerk response with the available Time Slots, the player decides and confirm his Reservation for the preferred Time Slot. Sometimes, a Reservation may consist of several Time Slots so that the Member can play for a longer time. The clerk will reserve a badminton court accordingly by updating the Reservation records.

#### Question 2: Checkout Counter

Below is the scenario for sales transaction in the checkout counter. Product a sequence diagram to illustrate the scenario.

1. The customer arrives at a POS checkout counter to pay for the goods (s)he wants to purchase.
2. The cashier starts a new sale.
3. When the system ready for the new sales, the cashier enters the item identifier for the item customer wants to buy.
4. The system records the sale line item and add the item total to the sales total.
5. The system presents the line item total and the running total (sales total) to the customer.
6. The cashier repeats steps 3-5 until all goods are counts.
7. The system calculates the taxes and presents the total.
8. The cashier tells the Customer the total and asks for payment.
9. The customer pay by presenting a payment QR code. A 3<sup>rd</sup> party online payment system scan the QR code, authorized the payment, and then inform the system about the payment status.
10. After the customer pays successfully, the cashier updates the sales record with payment.
11. The system sends print command and relevant information to a printer to produce a receipt.
12. The customer leaves with receipt and goods.

#### Question 3: Somestate Vehicle Registration Renewal

Below is the Normal Flow/Main Scenario for Renew vehicle registration, document the flow using a sequence diagram.

1. Registration administrator submit application for renewal to the Vehicles Registration.
2. The Vehicle Registration first finds the Registration Record in the system.
3. If found, the Vehicle Registration will check with Somestate Court System to

ensure no unpaid parking fines.

4. If unfound, the application will be rejected
5. If no unpaid parking fines, the Vehicle Registration will request for credit card information for the renewal payment
6. Registration administrator provides the credit card information to the Vehicle Registration. The Vehicle Registration will pay the correct amount to Welco Credit Card System by providing the credit card information and total amount
7. Once Welco provides the positive response, the Vehicle Registration will update Registration Record, and request the Printer to print a receipt and vehicle registration
8. If unpaid parking fines found, the application will be rejected