Task 1 Requirements elicitation

Question 1

"List 5 different requirements gathering techniques that you would use to find out more about the problem. Why would these 5 selected be appropriate to use in this situation?"

To find out more about the Campus Common System (CCS), documenting sampling, background reading, interviews, questionnaires and observation are recommended.

Background reading allows us to understand the scenario more deeply and gives us more insights on how to approach the topic. The us can include going to Macquarie University (MQ) website and gain more information about the Campus Common such as the number of shops in (CC) and its cuisine (i.e. what type of food are they offering?), their opening hours and location.

After the completion of background reading, document sampling is used to analyse of quantitative and quantitative documents. Example of quantitative documents includes reports, records and forms; while qualitative reports includes emails, signs, webpage and manuals. The use of document sampling allows us to find the any useful information before conducting both questionnaires and interviews. Such technique allows us to increase effectiveness and reduce biases in the project.

Interviewing key stakeholders such as students and staff members will express their needs and expectations of the CCS. A mixture of both open and closed-ended questions will be used to interview a random sample of respondents which contains domestic and international and males and females.

Questionnaires are used to gather information from the wider group of audience (i.e. students and staff members). The use of questionnaires will output quantitative data which will be useful for analysis. For instance, we can record the students and staff, age, ethnicity, what discipline are they in, favourite food to expand their knowledge about the needs and wants of these stakeholders.

Lastly, observation is used to observe any trends and patterns. We can go to CC and observe the buying habits, how much time they spend in CC. By recording these observations, it will also be useful to determine the attitudes and behaviour these stakeholders.

Question 2

"Outline a strategy (of between 3-4 requirements gathering stages) and detail which techniques you would use at each stage, and what data you would use from previous gathered information. Justify your approach."

We will implement a four-phrase strategy in his strategy gathering.

In the first phrase, background reading will be immediate take place once the problem statement is provided to us. It is important to note the date of the readings as he should be reading resources which less than 2 years ago as out of date data may harm in the later stages of the Systems Development Life Cycle (SDLC). As time proceeds, the habits of these stakeholders may change. For instance 2 years ago student A was buying lunch three days a week since she didn't have the time to cook before his classes start. Two years later, she decides to save some money to go on a vacation; as a result she decides to bring sandwiches to university. Besides background reading, the system can also undertake document sampling in the same phrase. We can ask each of the restaurants for their past records to find out what are the most popular restaurant in CC; they can also look for previous and current posters/signs in these restaurant and find out which type marketing campaigns did they use to use to attract and retain customers.

The next phrase is to send out surveys and tries to receive as many responses as we can. Surveys are distributed before they can reach a larger audience and questions can be more generalised. The questions in the surveys should be based on the background reading and the documenting that has been conducted in previous step.

After the completion of surveys, they us can conduct interviews to get an in-depth understanding of the stakeholders needs in CCS. The interview can consists of both open and closed questions. Funnel interview structure is recommended in this stage as it begins with generalised open-ended questions and it narrows the responses by using close-ended questions. Such method will help us to ensure the right questions are being asked and the accurate information being recorded. It is also an effective communication process in order to support the best possible outcomes of the information gathering process. To a further extent, a random sampling needs to be drawn to avoid biases such as random sampling error.

The last phrase is to conduct observation within the CC in the university. While observation is being taken place, we need to be aware of the ethical issues of observing. He needs to seek approval of the respondent being observed otherwise issues such as invasion of privacy. Obtaining consent from respondents may be challenging, therefore a small sample size (such as observing 3 people per restaurant) will be sufficient in this stage.

Task 2: Requirements specification

Question 3

"Write two user scenarios that would describe a typical usage over the course of a day (one from a CCS Delivery person's perspective and another from CCS manager's perspective.)

User Scenario for the CCS Delivery Person

On a typical Friday, the CCS delivery person receives the orders from CCS system. The orders can come from any restaurants within the CCS as they are auto-registered. The CCS delivery person can which order is he/she going to accept based on his/her availabilities. Once the CCS delivery person accepted and ready to delivery, he/she can change the status of the order from "Order Accepted" to "Delivering". Once the order has been delivered to the customer then the CCS delivery person can change the status the order from "Delivering" to "Delivered" to finish the order off.

User Scenario for the CCS Manager

On a typical Wednesday, the CCS manager logins to CCS system to see what is the daily schedule of the day. New bookings will come into the system automatically. If the CCS is full during a specific time then the manager can deny the booking and direct them to make a booking in another time. The manager will also able to resolve any disputes in the system regarding any issues/requests in their booking.

Question 4

"Provide four examples user stories from different actors"

1. As a student, I want to book a space at Campus Common for my society events so that I register for Campus Common System (CCS).
2. As a CCS Delivery person, I want to ensure the order is delivered in fast and efficient manner, so that I will update the status as delivered.
3. As a CCS manager, I want to help other users to deal with issues/requests regarding their event booking so that I set up a function called "raise a dispute" in the system.
4. As a CCS manager I can deny event booking request so that there will be no clashes between different events in the same location.

Question 5

"Write three functional requirements for the proposed system for different actors (1 example per each actor)"

Three functional requirements for the Campus Common Systems (CCS):

1. Enable a student to become a member
2. Enable a staff member to place an order for food.
3. Enable a CCS Delivery Person to accept an order.

Question 6

"Write three non-functional requirements for the proposed system (include the measures/limitations is part of the requirement not just the heading)

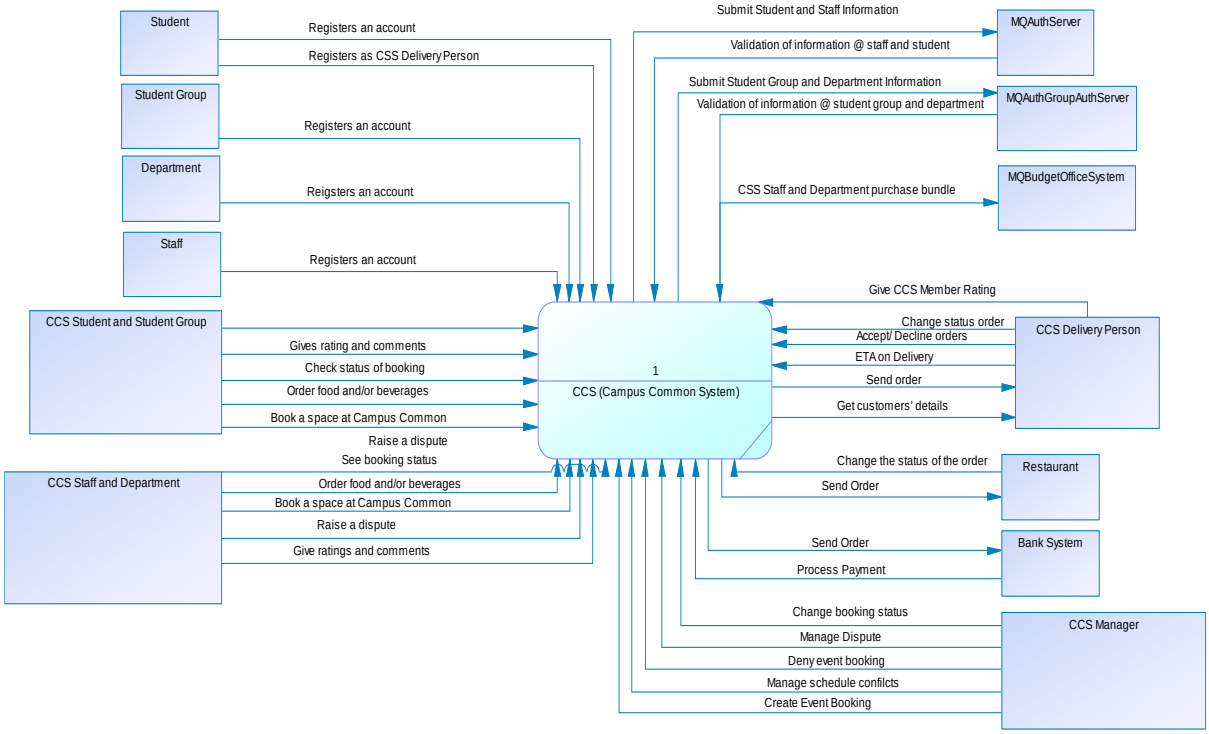
Three non-functional requirements for the Campus Common Systems (CCS):

1. The system to be encrypted all CCS members' bank information
2. The system to be allowed the maximum amount of 50 people entering the system.
3. The system to be updated every 2 weeks to minimise bugs and glitches.

Task 3: Diagrams for different systems

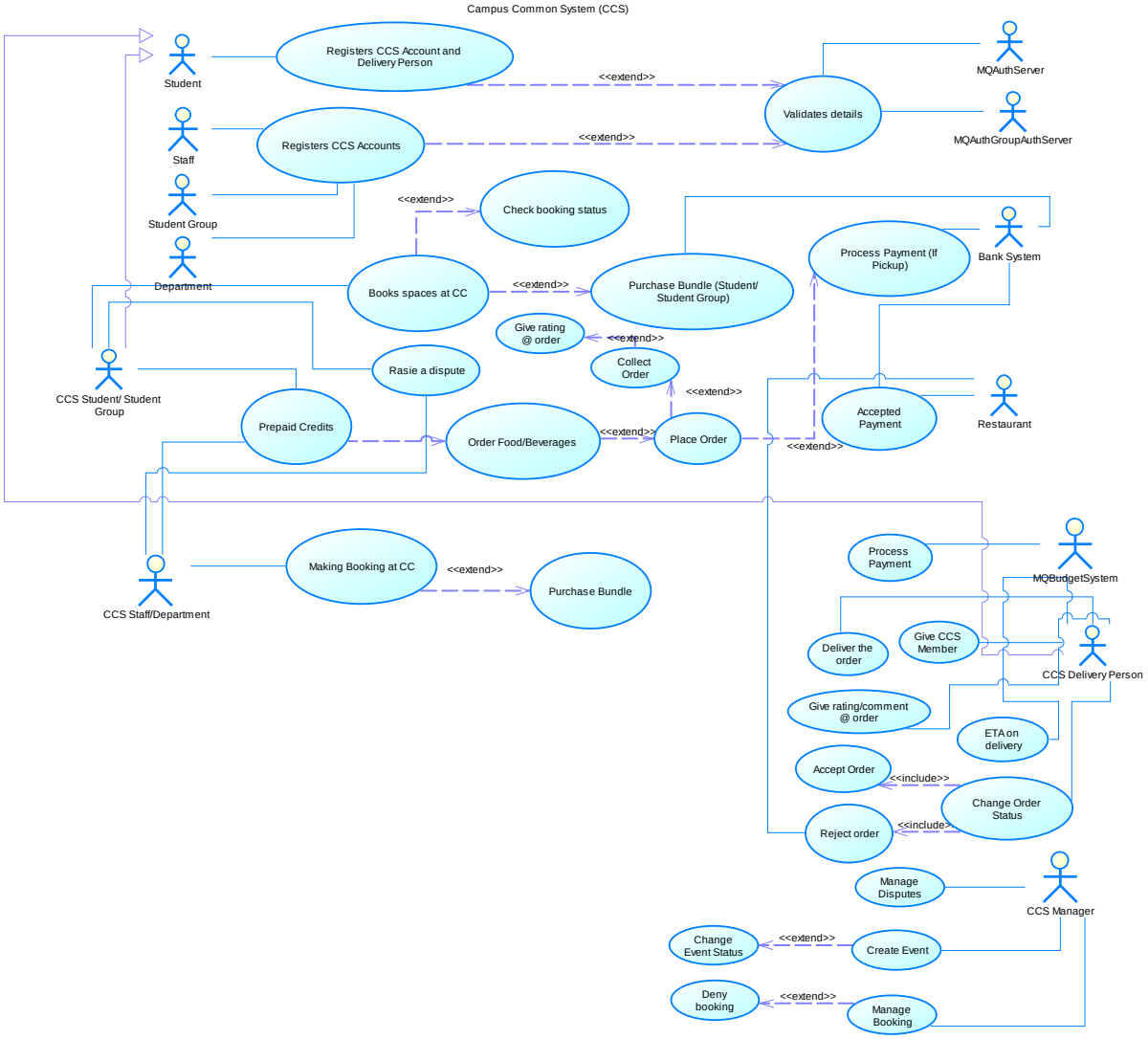
Question 7

*"Draw a Context Diagram **(Level 0 DFD)** for CCS*



Question 8

"Draw a use case diagram for CCS based on the problem statement and extract Also: You need to add two more use cases for CCS Delivery Person and add that to your diagram. Please add few sentences underneath explaining the newly added use cases. "



Assumptions:

1. *CCS Student and Student Group are expected to top on their prepaid credit before order their food and (or) beverages. Student and student group can prepay their credit without ordering food.*
2. *A new use case restaurant is created.*
3. *The restaurant is required to collect customer information after he/she finish his/her order.*
4. *The CCS Delivery Person can either accepts/rejects the order. If the order is rejected by the CCS delivery person then it will send back to the restaurant.*

The two (2) newly added use cases for CCS Delivery Person are as follows:

1. *The CCS Delivery Person will provide an estimate time of arrival of the CCS's member order such that it will maintain the productivity levels of CCS Delivery Person.*
2. *The CCS Delivery Person can also provide a customer rating to the CCS member who selected to deliver their order.*

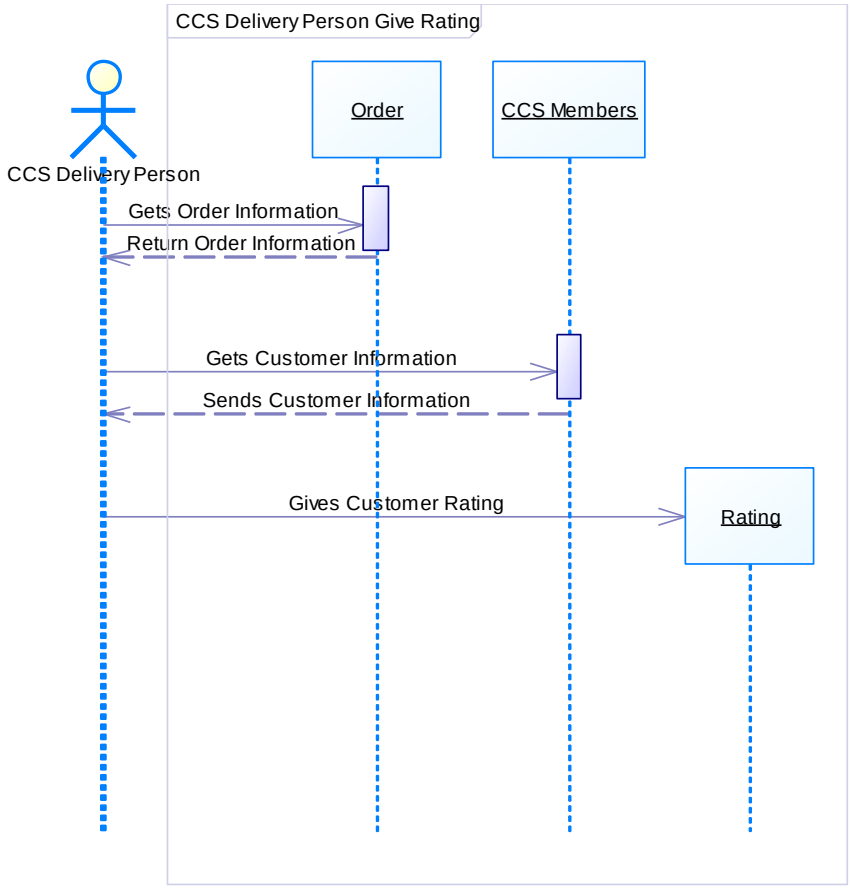
Question 9

"Write a use case description for one the use cases you created (choose on that meets the criteria in Q10)

Use Case	Give customer rating.	
Goal <a longer statement of the goal in context if needed>	To give customer a rating after the delivery.	
Preconditions <what we expect is already the state of the world>	The CCS delivery person successfully delivered the order to CCS Members.	
Success End Condition <the state of the world upon successful completion>	A rating is successfully given to CCS Member.	
Failed End Condition <the state of the world if goal abandoned>	The CCS Delivery Person failed to given to the CCS Member.	
Primary Actors; **Secondary Actors**	• CCS Delivery Person (PA) • CCS Members/CCS (SA)	
Trigger <the action upon the system that starts use case>	The CCS Delivery Person will click the "Customer Rating" button which is built into CCS.	
Description / Main Success Scenario <the steps of the scenario from trigger to goal delivery and any clean up after. Indicate sub-steps using numbering>	**Step**	**Action**
	1	CCS Delivery Person selects CCS Member to give rating.
	2	CCS provides CCS Delivery Person a rating scale (out of 5) to rate the customer.
	3	CCS Delivery Person selects the amount of stars that he/she wants to give to the CCS Member.
	4	CCS Delivery Person clicks the "Submit" button
	5	CCS processes the request.
	6	CCS displays a message saying that the rating is submitted successfully.
Alternative Flows <a: condition causing branching> <a1: action or name of sub use case>	**Step**	**Branching Action**
	A1	CCS Delivery Person selects the wrong CCS Member
	A2	CCS is down for maintenance.

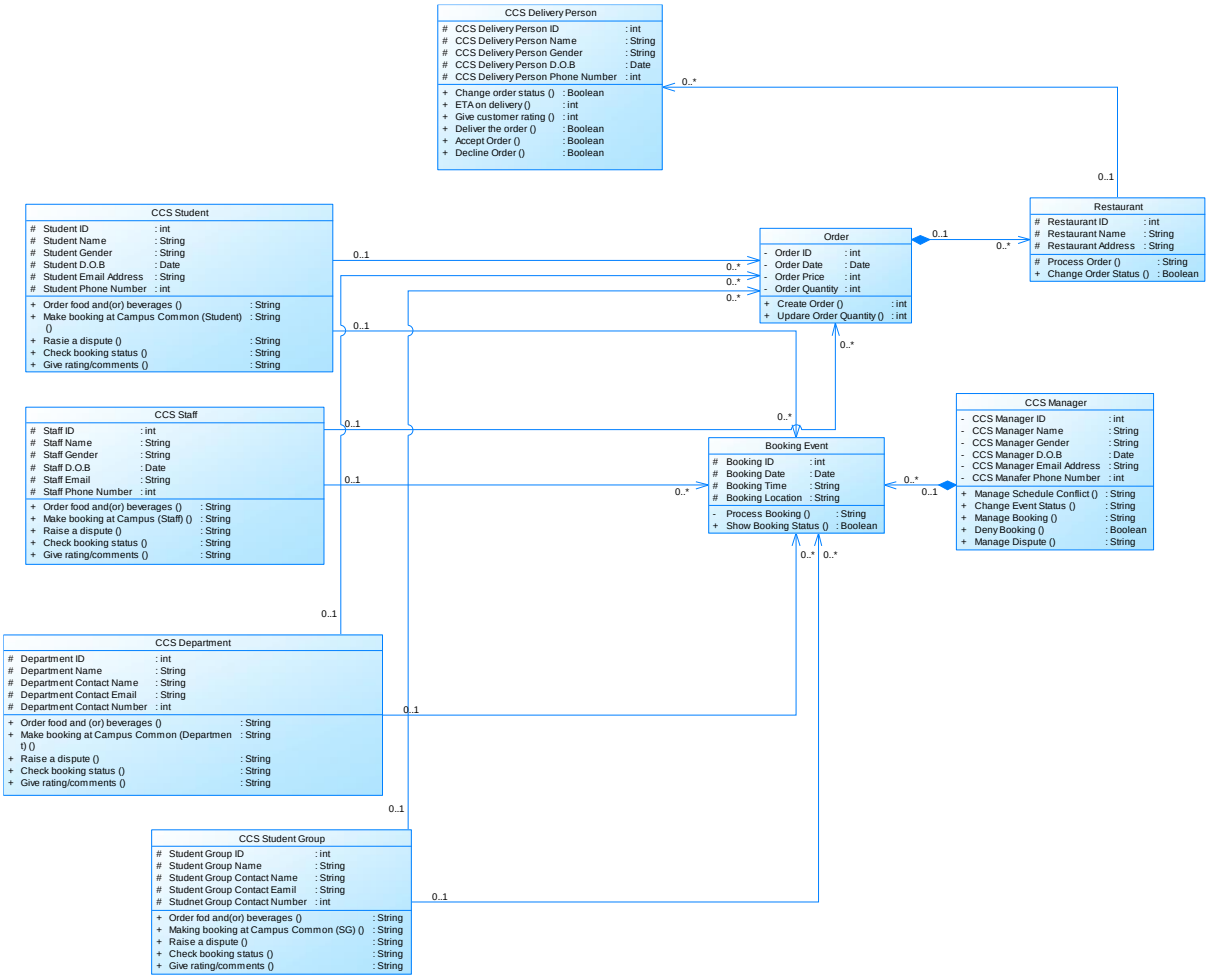
Question 10

"Draw a Sequence Diagram for the use case for the use case description from Q9. Be sure to select a use case that has at least one actor and a minimum of 3 entity objects (as lifelines) in the sequence diagram."



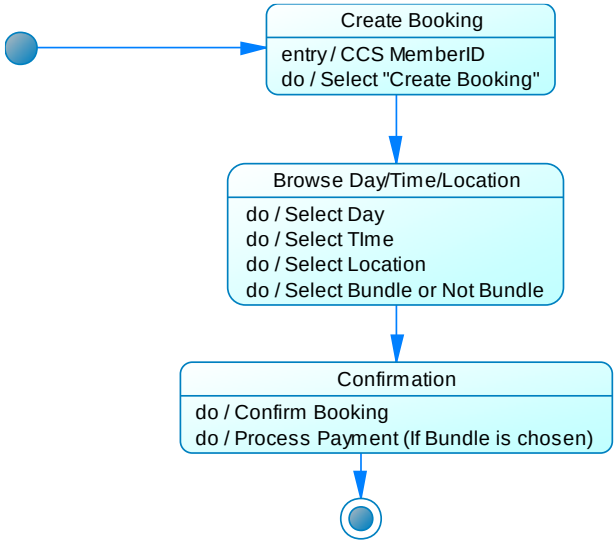
Question 11

“Draw an entity-class diagram for the entire problem statement.”



Question 12

"Select one class from your class diagram and draw a State Diagram for that class."



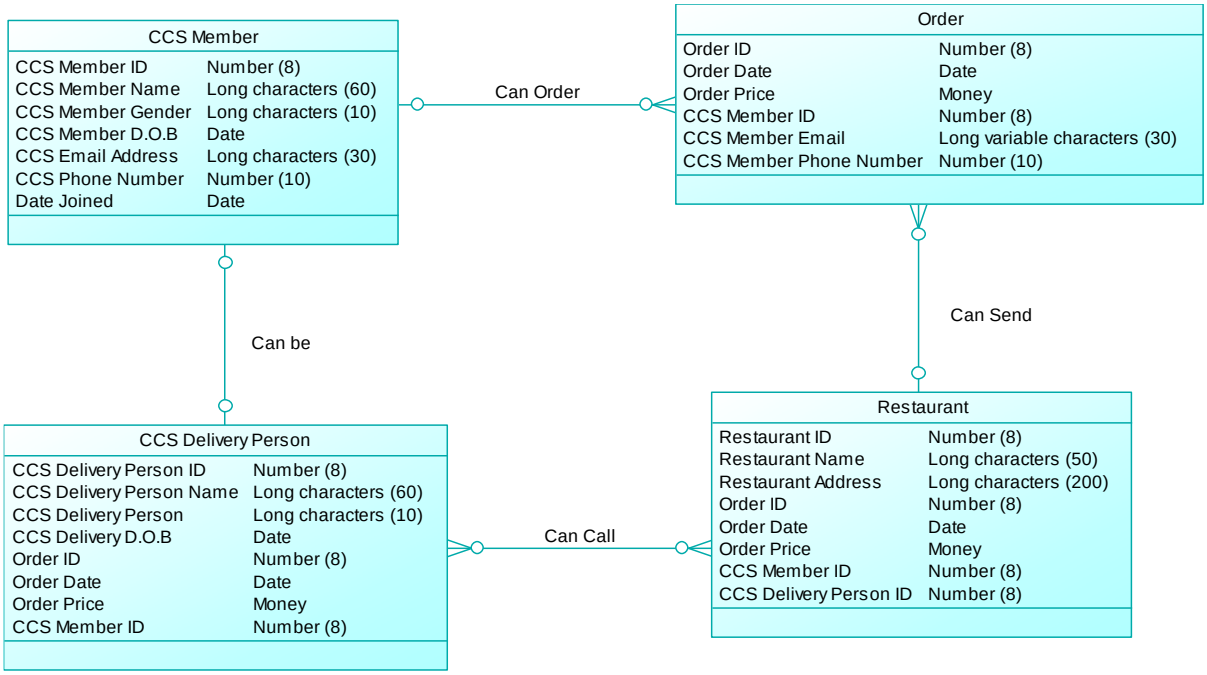
Task 4 Data and storage considerations

Question 13:

"Draw an ER Diagram using one of the following entities.

- *CCS Member, Order, Delivery Person, Restaurant*
- *Event Booking, Bundle Package, Department, Payment*

You need to have at least 3 attributes for each of the entities. You are allowed to have add extra entities, if you feel need. However you will need to provide a set of justifications to explain the choice of entities."



Question 14

"Provide a list of tables with primary and foreign keys, when ER model in Task 4 is transformed into tables."