SYD 366 - Sales and Scheduling Test (30% of final grade)

Please read the case study and answer the questions below.
This test is a take-home assessment, that must be completed individually.

Test starts on Thursday July 29, 2021 at 9:00 AM
Test is **due** Friday July 30, 2021 at 4:00 PM.

Submission notes:

- Submission will be via Blackboard
- **Submit one Word document** with UML diagrams included as screenshots in the document. The pictures must be legible. Your professor will not grade any work that is not easy to read and will received a grade of zero (0).
- **Submit one Visual Paradigm file (.vpp)** with all your UML diagrams included as well.
- Please note that submitted work, in any other format will not be graded and will received a grade of zero (0).

Marks will be deducted for any of the following:

- Files cannot be opened.
- Models and formatting do not follow course conventions.
- Missing screenshots, source files, or other required elements.
- Spelling or grammar errors, or unclear text content.
- PDF, ZIP, RAR, and other file formats will not be opened and will receive a mark of 0.

Work not properly referenced will be passed to the Academic Integrity Committee for review.

You will not share your answers with others, in person or through social/digital media.

Any outside help or sharing of answers is considered cheating and a major violation of Seneca College's Academic Honesty Policy.

You agree not to replicate, copy, print or record any questions or answers on this test to share with others.

SENECA'S ACADEMIC HONESTY POLICY
As a Seneca student, you must conduct yourself in an honest and trustworthy manner in all aspects of your academic career. A dishonest attempt to obtain an academic advantage is considered an offence and will not be tolerated by the College.
See Seneca Policies on Cheating and Plagiarism:
https://www.senecacollege.ca/about/policies/academic-integrity-policy.html

Part 1: Sales

Case Study

Halton Hills Tutors has been offering home tutoring services around the Halton Hills area since 2008. Rose Moore started the business from her home, setting up tutoring sessions for math, science, and computer-based subjects. She would visit the client's home and teach there, and her clients were mostly kids, whose parents decided they needed more instruction, or were struggling in school.

Since then, her company has expanded, and she now has a small office space, and number of tutors working for her. She has also expanded to online and teaches through zoom or other online tools. Most of the sessions are still for kids, although she of course bills the parents. Recently, Rose has started looking into helping college and university students with their tutoring needs, as well.

As part of the growth of the company, they are looking into a new management system. Ross Norton, the office manager, needs to be able to invoice clients quickly and easily for tutoring services completed during the week.

Clients are invoiced monthly, and clients are expected to pay upon receipt of their invoice.

Your team leader has written the following scenario to capture some of *Halton Hills Tutors'* **requirements.** Remember that an invoice is a request for payment.

Use Case Name	Create Invoice		
Triggering Event	At the end of each week, all tutoring sessions for the week have been evaluated.		
Brief Description	This use case enables the Office Manager to create an invoice for tutoring services rendered for a client during the week.		
Actors	Office Manager		
Related Use Cases			
Preconditions	The Office Manager has opened the Billing Menu.		
Post Conditions	The new invoice has been created, saved to the database, and emailed to the client.		
Flow of activities	Actor		System
	1	Requests to record a new invoice	Displays a list of active clients and prompts for selection.
	2	Selects a client	Applies the client information to a new invoice. Generates a unique invoice number and adds it, and today's date, to the invoice. Displays the (incomplete) invoice. Displays a list of all tutoring services, by name.
	3	Selects a service	Displays the hourly cost of that service and prompts for number of hours.

	4	Enters number of hours	Calculates the cost of the service as hourly cost * number of hours. Displays a list of tutors by name
	5	Selects the tutor who completed the service	Adds the invoice detail and the total cost of that line item.
	6	Repeats above 3 steps until all services for the week are added	Prompts to print or email
	7	Chooses to email	Saves the invoice and all line details. Emails the invoice to the client.
Exception Conditions	The Manager chooses to cancel adding the invoice.		

## Question 1 (worth 15 marks)

Complete a **class diagram** to support what your team has learned about invoicing for *Halton Hills Tutors*. Class diagrams must include any associations, association names, multiplicity, and reference attributes (including any sets).
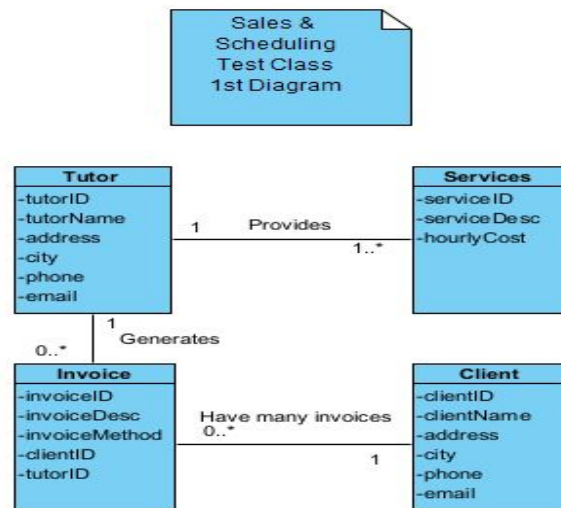
Question 2 (worth 20 marks)

Complete an **object level sequence** diagram for the above scenario.

Iam attaching two different pics for one diagram as in one picture they were not clear.
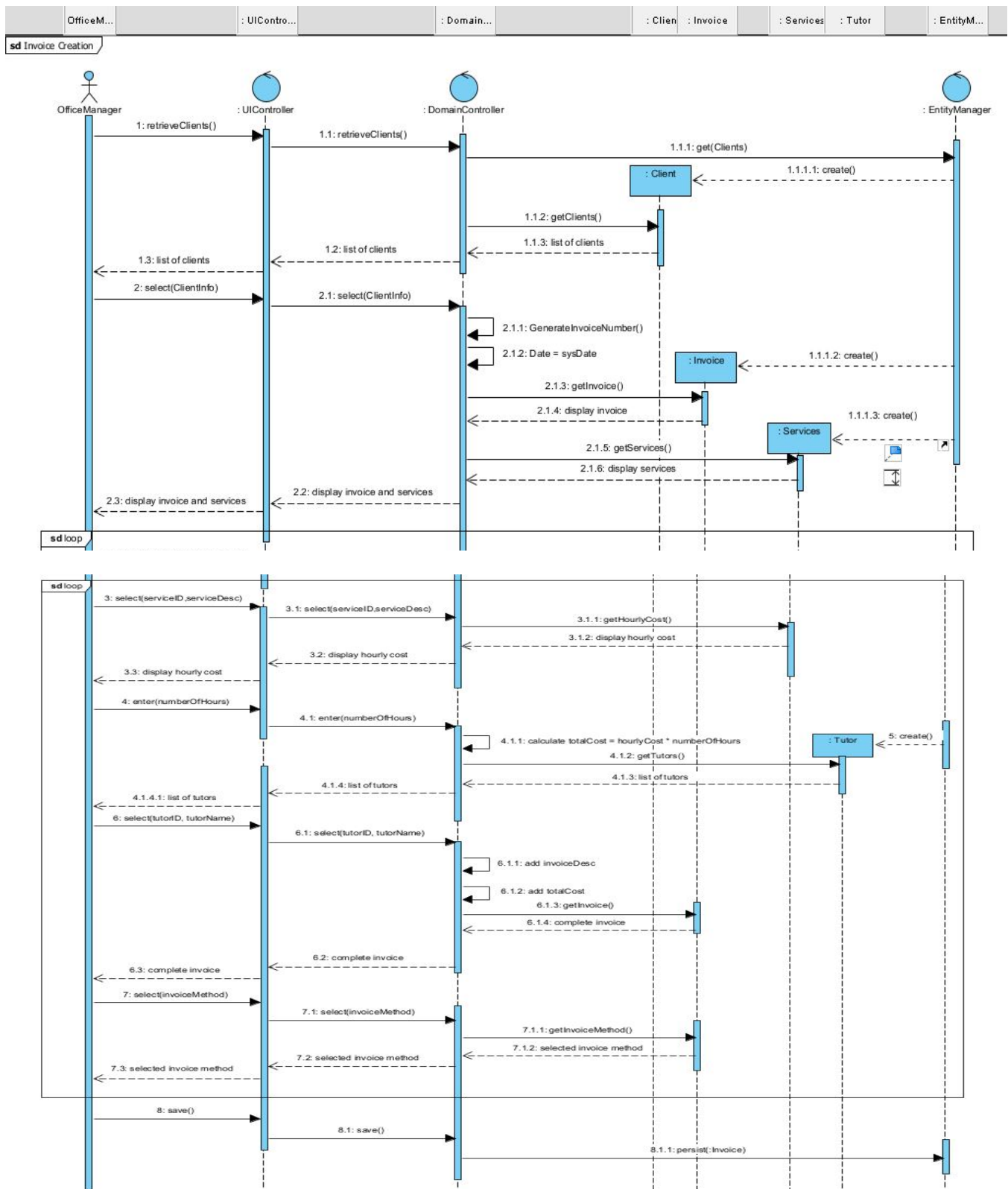
Answer all the following questions in clear English.

Question 3 (worth 2 marks)

The above scenario assumes that the hourly cost for a service is the same for each tutor. What would happen if the hourly cost changed for each tutor providing the tutoring service? How would you change your model?

Question 4 (worth 2 marks)

Halton Hills Tutors is thinking of offering a gift certificate for clients to purchase to give to their friends. How would you change your model to support this?
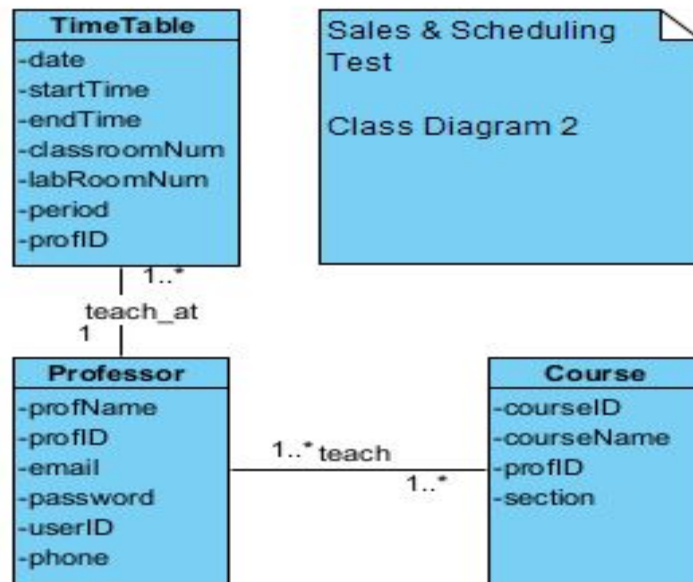
Part 2: Scheduling

You participated in a Scheduling Module Lab in Week 9. Please use that activity as the case study for this part of the test.

Use Case Name	Query Scheduled Classes for a Professor	
Triggering Event	Professor requests their schedule	
Brief Description	Allows a professor to request their scheduled with assigned classes and room numbers. The query must produce an online report displaying the professor's assigned classes for a week.	
Actors	Professor	
Related Use Cases		
Preconditions	Professor has opened the Employee Menu	
Post Conditions	Online report is displayed to the professor.	
Flow of activities	Actor	System
	1. Requests Schedule	Uses login information to retrieve a schedule for the professor
Exception Conditions	• Professor chooses to cancel retrieving their schedule	

Question 5 (worth 10 marks)

Create a **class diagram** to support the activity and the scenario described above. You may use implied data from the description and Schedule Module lab, as necessary.

TimeTable
-date
-startTime
-endTime
-classroomNum
-labRoomNum
-period
-profID

Sales & Scheduling Test

Class Diagram 2

1..*

teach_at

1

Professor
-profName
-profID
-email
-password
-userID
-phone

1..* teach

1..*

Course
-courseID
-courseName
-profID
-section

Question 6 (worth 5 marks)

Complete an **object level sequence** diagram for the above scenario.

Scheuled Classes Queries (Professor)

Participants: Professor, : UIController, : DomainController, : Professor, : TimeTable, : EntityManager

1: requestSchedule()
2: retrieveProfessor(userID,password)
2.1: retrieveProfessor(userID,password)
2.1.1: get(:Professor)
2.1.1.1: create()
2.1.2: getProfessor()
2.1.3: access to get schedule
2.1.4: access to get schedule
2.1.4.1: access to get schedule
3: retrieveSchedule(userID)
3.1: getTimeTable(userID)
3.1.1: getTimeTable(userID)
{}
3.1.1.1: create()
3.1.2: getTimeTable()
3.1.3: display schedule
3.1.4: display schedule
3.1.4.1: display schedule