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|  | **AMERICAN INTERNATIONAL UNIVERSITY – BANGLADESH (AIUB)**  **Faculty of Science and Technology (FST)**  **Department of Computer Science** |
| **Course Name**: Object Oriented Analysis and Design **Section**: [F] **Semester:** Spring 2020-2021  **Submission Date:** 14.03.2021 **Term:** Mid-Term **Faculty Name:** Mahfujur Rahman | |

1. **Draw a Use Case diagram for the following case study:**

Music Today is an audio recording company. There are several recordists in the company. Clients record their music with the help of the recordists. The recording is done in a session. A session is usually created by the office clerk. A session needs to be booked by the client beforehand and before booking the time needs to be verified by the booking clerk for availability. The company maintains a list of preferred clients who book sessions like regular clients but also can create sessions according to their needs. Clerks have to log in to use the system. Clients can pay in cash or card. The accountant deals with the payment. The payment is only cleared when the accountant receives clearance from the booking clerk.

1. **Draw appropriate class notation for the following class:**

In a Super Shop Management System, a class named Product is responsible for storing all the information regarding a product. The class has attributes: ProductId, ProductName, BuyingPrice, SellingPrice and profit. They are Text, Text, double, double and double in type respectively. First four are private and the last one is public. The attribute profit is a derived attribute and ProductId is unique and 8 in length. The class has the following operations: getProductName( ) that returns the name of the product, setSellingPrice(double price) that sets the selling price of a product and can only be accessed by the admin. The class also have a static operation enableDiscount(Boolean status). All the operations of the class is public.

1. **Draw a Class diagram for the following case study:**

Student may attend any number of courses. Every course may have any number of students. Instructors teach courses. For every course there is at least one instructor. Every instructor may teach zero or more courses. A school has zero or more students. Each student may be a registered member of one or more school. A school has one or more departments. Each department belongs to exactly one school. Every instructor is assigned to one or more departments. Each department has one or more instructors. For every department there is exactly one instructor acting as the department chair.

1. **Draw a Sequence diagram for the following case study:**

A doctor includes the instruction in the patient advice when a patient requires a bed or room in the hospital. The advice is then passed to the office clerk. The office clerk checks the present booking database to get the available room and bed list. Facilities of the rooms and the beds are then extracted from the room list. Available room and bed numbers and facilities are sent to the patient. The patient chooses a room or bed and then the office clerk writes patientID, room or bed no, doctorID and doctor advice in the booking database. Finally a copy of the admission is sent to the associated nurse and a copy is given to the patient.

**Group Information**

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| --- | --- | --- | --- |
| **SL No** | **Student ID** | **Name** | **Group No** |
| 1 | 18-36777-1 | AL RAJI SIDDIQUE | **1** |
| 2 | 18-37534-1 | SHAHRIAR FAHIM |
| 3 | 18-38707-3 | FARHAN AHMED ASHISH |
| 4 | 18-39160-3 | KAMAL UDDIN RAHAT |
| 5 | 18-39162-3 | FATAMA JANNAT |
| 6 | 19-39389-1 | MD. IMTIAZ HABIB | **2** |
| 7 | 19-39538-1 | API ADHIKARY |
| 8 | 19-39578-1 | MONOWARA PARVIN |
| 9 | 19-39581-1 | MAISHA TAHIAT |
| 10 | 19-39616-1 | TASNUBA KADER RAISHA |
| 11 | 19-39712-1 | KANIZ FATIMA | **3** |
| 12 | 19-39714-1 | A.S.M. FAZLE RABBI |
| 13 | 19-39861-1 | KHALED MANSUR |
| 14 | 19-39872-1 | YEASIN ELAHI |
| 15 | 19-39890-1 | SAIYDUR RAHMAN | **4** |
| 16 | 19-40068-1 | JIHAD SHAHARIAR JOY |
| 17 | 19-40195-1 | ASHFAT AL RASHID |
| 18 | 19-40226-1 | MD. MAHINUR RAHMAN |
| 19 | 19-40319-1 | SUMAIYA SARWAR | **5** |
| 20 | 19-40647-1 | RATUL HASAN RAHAT |
| 21 | 19-40767-2 | MOHAMMED IBRAHIM SHAWON |
| 22 | 19-40807-2 | SYED ZAYEED BIN TAYAB |
| 23 | 19-40811-2 | SHARANNAYA DEY SITHI | **6** |
| 24 | 19-40823-2 | HASIBUR RAHAMAN |
| 25 | 19-40829-2 | ARPON KUNDU |
| 26 | 19-40966-2 | FARZANA KARIM MIM |
| 27 | 19-41169-2 | ALFAJUL ALOM | **7** |
| 28 | 19-41208-2 | AKHIRUL ISLAM |
| 29 | 19-41239-2 | MD. METHUN |
| 30 | 19-41271-3 | MD. TAHMID ISLAM BHUIYAN |
| 31 | 19-41349-3 | MD. MEHEDI HASAN ZAMIL | **8** |
| 32 | 19-41354-3 | MD. EMRUL KAYES EMON |
| 33 | 19-41401-3 | MD. SIYAMUL BARI ABIR |
| 34 | 19-41408-3 | MOHAMMAD ZIAUL HAQUE ABBAS |
| 35 | 19-41714-3 | PRIYAM DAS | **9** |
| 36 | 19-41731-3 | MD. NAFIZ GAFFAR |
| 37 | 20-41845-1 | MD. HAFIZUR RAHMAN NAYAN |
| 38 | 20-42061-1 | MD. TAHMID ALAM |
| 39 | 20-42153-1 | MD. RAZIB MOLLAH | **10** |
| 40 | 20-42195-1 | NAFINUR LEO |
| 41 | 20-42737-1 | MD. TANZIB HOSAIN |
| 42 | 20-43028-1 | MD. TAOHID HASAN ANIK |

**Instructions For Preparing Your Assignment:**

- Your assignment can be in both the form of **handwritten copy / Software simulated copy.**

- You can use a **scanner to create a PDF file** of your completed handwritten assignment, or you can **use your smartphone to take images of your work that can be compiled in a Word document and convert it into PDF.** Please check the video tutorial who cannot understand how to make a PDF.

~ Scanner: (<https://www.youtube.com/watch?v=fPp8Ox7qfCM>)

~ Images: (<https://www.youtube.com/watch?v=5K7xxQ8np90>)

- Rename the PDF as your Group \_ Group No \_ OOAD \_ Asg \_ Mid \_ Sec **(Example: Group\_3\_OOAD\_Asg\_Mid\_F.pdf)**

- **Copy and paste is prohibited.** I will check everyone's assignment carefully.

- Submit the assignment on 14 March 2021 (Sunday) 10:00 AM. **Deadline will be strictly followed** and marks will be deducted who misses submission deadline.

- You must **add a cover page which I uploaded in your section.**

**Instructions For Submitting Your Assignment:**

1. Complete all the tasks and create a PDF of your assignment.
2. ​Rename the PDF as your Group \_ Group No \_ OOAD \_ Asg \_ Mid \_ Sec (Example: Group\_3\_OOAD\_Asg\_Mid\_F.pdf)
3. Attach the file here **(Add Work).**
4. **Turn in / Hand in.**
5. **Submit the assignment on 14 March 2021 (Sunday) 10:00 AM.**
6. For Submission Instruction, please check the video tutorial (https://www.youtube.com/watch?v=hgJAUupKkfM)