

UNIVERSITI TUNKU ABDUL RAHMAN



Faculty of Information and Communication Technology (FICT)





UCCD2203 DATABASE SYSTEMS
Group Assignment
Session 202101

Deadline: Saturday 27 March 2021 (Week 10)

Time: before 5.00 pm

Submission channel: a hyperlink on WBLE

Programme (IA/IB/CS/CN/CT):	CS
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Note:

The assignment grouping can be from different tutorial groups but must be from the same programme i.e. IA student work with IA student

**All members should attach their individual signature confirming that the report is not plagiarized

Assignment Marking Scheme					
PART 1: (Group Assessment - 50%)					Marks
1.	Scope of Work (5 marks) Analyse requirements study (briefly explain the requirements/ office / business rules in the system). <u>PLEASE INCLUDE ANY ASSUMPTIONS THAT YOU MAKE.</u>				
2.	ER model (10 marks) You are required to design an ER diagram for the case study given, identify entities, identify relationships, identify associate attribute and determine keys. Check your ERD with the transaction requirements stated in the case.				
3.	Redesign and EER (10 marks) Redesign your ER diagram with the new requirements and extending the ERD to EER model, if any.				
4.	Data Dictionary (10 marks) Based on EER diagram that you created in part 4, create a data dictionary for the solution. (Make sure the data types (Oracle) selected are appropriate)				
5.	Tables and records (5 marks) Create all relations in ERD and insert the necessary records (Minimum 5 record for each table)				
6.	Script (10 marks) You are required to submit the SQL schema script with proper codes. Should include Integrity and referential integrity constraints. Softcopy: <i>Include the scripts in the submission</i>				
PART 1: Total Group Assessment - 50%					
PART 2: (Individual Assessment - 50%) (Filled in all your group members name and ID)					
Student Name	1. Jacynth Tham Ming Quan	2. Tan Jing Jie	3. Tan Wei Mun	4. Yap Jheng Khin	
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Queries (30 marks)					
Stored Procedure (10 marks)					
Function (10 marks)					
PART 2: Total Individual Assessment – 50 marks					
PART 1 + PART 2 = 100 marks					

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1.0 Scope of Work

ABC Hospital is a multi-disciplinary tertiary care hospital that offers a vast range of services to the public. To accommodate and cope with the data retrieval needs of the many daily transactions, ABC Hospital uses a hospital management system with many useful functionalities. However, as the hospital continues to expand, a more advanced database system is needed. In this project, an advanced hospital management database system is proposed to facilitate data retrieval and time savings across ABC Hospital's clinical routine. In this section, the assumptions and business rules of the proposed hospital database system are listed down.

1.1 Assumption

1. The hospital does not need to keep track of previous employee managers for any given date range.
2. The hospital does not need to keep track of previous department heads for any given date range.
3. Employees do not return to the same hospital that they are working in if they are ill.
4. A new patient's information is recorded when first admitted to the hospital or making appointment for the first time. The term "Admission" refers to any patient entering the hospital, not necessarily an inpatient that will stay overnight.
5. Patients will only be assigned to one hospital bed throughout the entire duration of their hospitalization.
6. Patients can pay Bills for each Admission in installments, hence the one-to-many relationship between the Admission and Bill entities.
7. Each Bill record has a total amount that is inclusive of the medical fees, service fees and room price, if any. This total amount is tallied by the Employee that is in charge of that particular Admission.
8. Each Doctor only has one main qualification and one main expertise.
9. Each Nurse only has one main specialty.
10. At any given date and time, one Doctor can only be involved in one ServiceRecord.
11. At any given date and time, one Nurse can only be involved in one ServiceRecord.
12. At any given date and time, one Room can only have a maximum of one ServiceRecord performed in it.
13. Each Department can only be managed by one Employee or one Nurse or one Doctor.

14. Every Doctor, Nurse and Employee shall only belong to one Department.
15. The biggest room in the hospital holds 6 Beds, hence the 0..6 multiplicity between the Bed and Room entities.
16. There are four types of Medicaequipment – blood bag, medicine, organ and vaccine.
17. Each ServiceRecord can be performed by a nurse, a doctor or both a nurse and a doctor.
18. The Rh type is not considered in determining the donor's compatibility of the organs and blood bags with the recipient. Therefore, it is assumed that AB type patients can accept all blood types; A type patients can only accept A, O blood types; B type patients can only accept B, O blood type; whereas O type patients can only accept O blood types.
19. It is assumed that the hospital management can decide who to vaccinate first upon receiving the COVID-19 vaccines.
20. The vaccine, blood bags and organs are stored separately per record. Blood bags and organs are tracked individually in separate records because the values in the expiration date attribute can't be shared. COVID-19 Vaccines are also tracked individually because knowing of which particular vaccine that has given to the recipient is important for determining many important information like vaccination appointment and vaccination efficacy.
21. Repeated diseases suffered by patients are considered as new disease. However, the doctor still can use past diseases as references
22. Every admission record has a status, which can be one of the following:
 - I – Inpatient (patient staying in hospital)
 - D – Dead
 - R – Recovered (Can be discharged or still in hospital)
 - O – Others, namely Appointments

The status for appointments will start off with 'O'. It is assumed that the employee in charge of a particular admission will manually change the status to 'I' or 'R' during and after the admission had been completed.
23. If a Patient's bill had past the due date, a new due date – (current due date +14 days) –will replace the current due date and the current payable amount will have 5% of the existing payable amount added to it.
24. Dead patients will not occupy beds anymore as the responsibility of disposing of the bodies will be passed on to the families of the patients. Therefore, if a patient's admission record has a status of 'D', the bed would immediately be sanitized and made available to other patients.

25. The hospital performs frequent disease analysis to raise awareness of highly contagious diseases and stock up on the related medicine.
26. Some rooms in the hospital have wall partitioning set up. Therefore, two ServiceRecords may be performed in the same room but different partitioned sections of it.

1.2 Business Rule

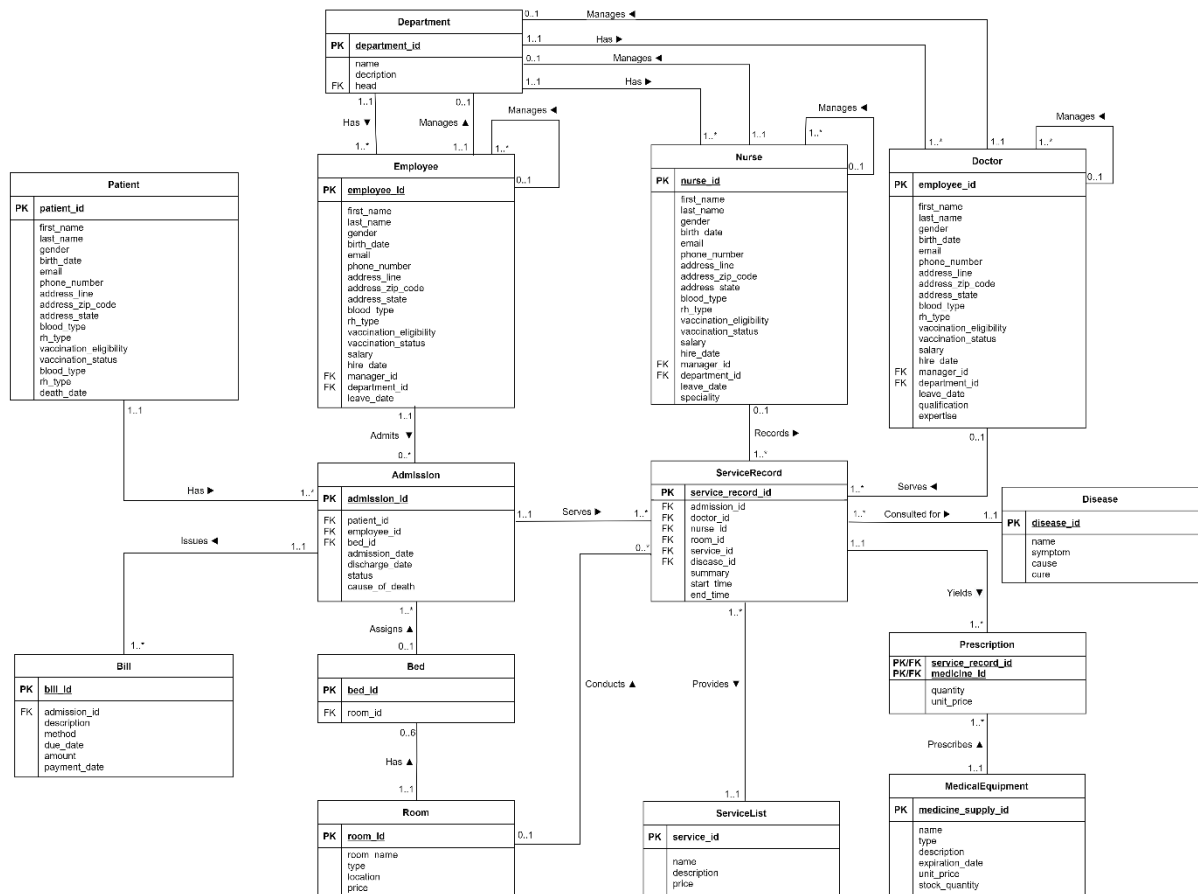
A business rule is defined as a statement that imposes any form of constraint on a specific part of a database system. Listed below are the business rules of the proposed hospital management system for ABC Hospital:

1. Each Doctor manages zero or one Department. Each Department is managed by zero or one Doctor.
2. Each Nurse can manage zero or one Department. Each Department is managed by zero or one Nurse.
3. Each Employee can manage zero or one Department. Each Department is managed by zero or one Employee.
4. Each Department can have one or many Doctors. Each Doctor belongs to one and only one Department.
5. Each Department can have one or many Nurses. Each Nurse belongs to one and only one Department.
6. Each Department can have one or many Employees. Each Employee belongs to one and only one Department.
7. Each Employee (Supervisor) manages one or many other Employees (Supervisees). Each Employee (Supervisee) is managed by zero or one Employee (Supervisor).
8. Each Doctor (Supervisor) manages one or many other Doctors (Supervisees). Each Doctor (Supervisee) is managed by zero or one Doctor (Supervisor).
9. Each Nurse (Supervisor) manages one or many other Nurses (Supervisees). Each Nurse (Supervisee) is managed by zero or one Nurse (Supervisor).
10. Each Employee admits zero or many Admissions. Each Admission is admitted by one and only one Employee.
11. Each Patient can have one or many Admissions. One Admission belongs to one and only one Patient.

12. Each Admission can have one or many Bills. One Bill can belong to one and only one Admission.
13. Each Admission can have one or many ServiceRecords. Each ServiceRecord can only belong to one and only one Admission.
14. Each Admission can be assigned to zero or one Bed. Each Bed can be assigned to one or many Admissions.
15. Each Bed belongs to one and only one Room. Each Room can have zero to six Beds.
16. Each ServiceRecord can be performed in zero or one Room. Each Room can have zero or many ServiceRecords performed in it.
17. Each ServiceRecord can have one and only one ServiceList. Each ServiceList can have one or many ServiceRecords.
18. Each ServiceRecord can have one or many Prescriptions. Each Prescription can belong to one and only one ServiceRecord.
19. Each Prescription can consist of one and only one Medicine. One Medicine can be a part of one or many Prescriptions.
20. Each ServiceRecord can have zero or one Doctor. Each Doctor can perform one or many ServiceRecords.
21. Each ServiceRecord can have zero or one Nurse. Each Nurse can perform one or many ServiceRecords.
22. Each ServiceRecord is consulted for one and only one disease. Each disease has one to many ServiceRecords.

2.0 ER Model

The figure below shows the ERD of the proposed hospital database system.



3.0 Redesign and EER

During the redesigning of the ERD into the EERD, the Person entity is added into the final version of the EERD, along with aggregation, composition and generalization relationships. The additional business rules corresponding to the new additions of entities and relationships are listed below:

1. Each Person must be either a Patient or an Employee or both (mandatory, and)
2. Each Employee can be a Doctor or a Nurse or none (optional, or)
3. Each Employee can manage one to many other Employees. Each Employee can be managed by zero or one other Employee.
4. Each ServiceRecord can be performed on either a patient, an employee, a doctor, or a nurse. When the ServiceRecord is performed on an employee, doctor, or nurse, a new record will be created in the Patient table.
5. The composition relationships in the EER are listed below:
 - a. Patient – Admission
 - b. ServiceRecord – Prescription
 - c. Admission – ServiceRecord
6. The aggregation relationships in the EER are listed below:
 - a. Department – Employee
 - b. Room – Bed

4.0 Data Dictionary

The data dictionaries for the 15 tables in the proposed database system is shown below in the sequence of table creation. The sequence of table creation is as below. Tables within the same layer can be created in any order, regardless of precedence. Tables in the top layer have to be created before the tables in the lower layers.

Table Creation Precedence

Person, Room, Disease, Medicaequipment, Servicelist, Department
Employee, Patient, Bed
Nurse, Doctor, Admission
Bill, Servicerecord
Prescription

4.1 Person

Person							
Column Name	Description	Data Type	Length /size	Nulls	PK /F K	Reference to	Sample Data
person_id	A 6-character unique identifier that begins with the letter “P” for “Person”	Varchar 2	6	No	PK	-	P00001
first_name	The first name of the person.	Varchar 2	15	No	-	-	Kevin
last_name	The last name of the person.	Varchar 2	15	No	-	-	Owens
gender	The gender of the person, where ‘M’ is for male, ‘F’ is for female and ‘O’ is for other.	Varchar 2	1	No	-	-	M
birth_date	The birth date of the person.	Date	-	No	-	-	2000-12-20

email	The email address of the person.	Varchar 2	30	Yes	-	-	kevin_owen s@gmail.com
phone_number	The phone number is in the international format, it consists of country code (+60), and the rest of the numbers.	Varchar 2	15	No	-	-	+6016151517
address_line	The address of the person.	Varchar 2	50	Yes	-	-	12A, Jalan Prime, Taman IT
address_zip_code	The zip code of the person's address.	Varchar 2	5	Yes	-	-	88000
address_state	The state of the person's address.	Varchar 2	25	Yes	-	-	Sabah
blood_type	The blood type of the person	Varchar 2	2	Yes	-	-	AB
rh_type	The RH type of the person's blood.	Char	1	Yes	-	-	+
vaccination_eligibility	The eligibility of a person to get a COVID-19 vaccine. 'y' represents yes and 'n' represent no.	Char	1	No	-	-	y
vaccination_status	The status indicating whether a person has already got the	Char	1	No	-	-	n

	COVID-19 vaccine. 'y' represents yes and 'n' represent no.						
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4.2 Room

Room							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
room_id	A 4-character unique identifier that begins with the letter "R" for "Room"	Varchar2	4	No	PK	-	R001
room_name	The general name of a particular room	Varchar2	30	No	-	-	Kid's Ward
type	The room type of a particular room	Varchar2	30	No	-	-	Operating Theatre
location	The physical location of the room in the hospital	Varchar2	30	No	-	-	L1 (West Wing)
price	The cost of a particular room in Ringgit Malaysia (RM)	Number	(10, 2)	No	-	-	1000.00

4.3 Disease

Disease							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data

disease_id	A 6-character unique identifier that begins with the letter “G”	Varchar 2	6	No	PK	-	G00001
name	The name of the disease.	Varchar 2	20	No	-	-	COVID-19
symptom	The symptom of the disease.	Varchar 2	75	No	-	-	Fever, Dry cough, Loss of taste or smell, Nasal congestion
cause	The cause of the disease.	Varchar 2	50	No	-	-	SARS-CoV-2
cure	The cure of the disease.	Varchar 2	50	No	-	-	Dexamethasone

4.4 Medicalediupment

Medicalediupment							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
medicalediupment_id	A 6-character unique identifier that begins with the letter "M" for "Medical Equipment".	Varchar2	6	No	PK	-	M00001
name	Name of the medical equipment.	Varchar2	30	No	-	-	Paracetamol 500mg
type	Type of the medical equipment.	Varchar2	25	No	-	-	medicine
description	Description of medical equipment.	Varchar2	50	No	-	-	For cough
expiration_date	Expiration date of the medical equipment.	Date	-	Yes	-	-	2021/11/20
unit_price	The unit_price of the medicine	Number	(10,2)	No	-	-	1.20
stock_quantity	Quantity of the stock left	Integer	-	No	-	-	20

4.5 Servicelist

Servicelist							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
service_id	A 6-character unique identifier that begins with the letter “L” for “List”	Varchar2	6	No	PK	-	L00001
name	Name of the service	Varchar2	30	No	-	-	X-ray
description	Description of service	Varchar2	50	No	-	-	Chest photo
price	The unit_price of the service	Number	(10,2)	No	-	-	120.00

4.6 Department

Department							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
department_id	A 6-character unique identifier that begins with the letter “D” for “Department”.	Varchar2	6	No	PK	-	D00001
name	The name of the department.	Varchar2	25	No	-	-	Admission
description	The brief description of the department.	Varchar2	150	No	-	-	A place to collect patient's informatio

							n and signcon se nt forms before being taken to the hospital unit or ward.
head	The head of the department.	Varchar 2	6	Yes	FK	Employee (employee_i d)	P00001

4.7 Employee

Employee							
Column Name	Descripti on	Data Type	Length /size	Null s	P K /F K	Reference to	Sample Data
employee_i d	A 6- character unique identifier that begins with the letter “P”	Varchar 2	6	No	PK , FK	Person (person_id)	P00001
salary	The salary of the employee.	Numbe r	(9,2)	Yes	-	-	7000.90
hire_date	The hire date of the employee.	Date	-	No	-	-	2021/11/2 0
manager_i d	The manager of the employee.	Varchar 2	6	Yes	FK	Employee (employee_id)	P00001
department _id	The departmen t that the employee belongs to.	Varchar 2	6	Yes	FK	Department (department_i d)	D00001

leave_date	The leave date of the employee.	Date	-	Yes	-	-	2021/11/20
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4.8 Patient

Patient							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
patient_id	A 6-character unique identifier that begins with the letter "P"	Varchar2	6	No	PK, FK	Person (person_id)	P00001
Death_date	The date of death if the patient dies in the hospital.	Timestamp	-	Yes	-	-	10-Jan-13 21:39:10.123000

4.9 Bed

Bed							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
bed_id	A 4-character unique identifier that begins with the letter "B" for "Bed"	Varchar2	4	No	PK	-	B001
room_id	A 4-character unique identifier that begins with the letter "R" for "Room"	Varchar2	4	No	FK	Room (room_id)	R001

4.10 Nurse

Nurse							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data

nurse_id	A 6-character unique identifier that begins with the letter “P”	Varchar2	6	No	PK, FK	Employee (employee_id)	P00001
speciality	The expertise of the nurse.	Varchar2	30	No	-	-	ICU

4.11 Doctor

Doctor							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
doctor_id	A 6-character unique identifier that begins with the letter “P”	Varchar2	6	No	PK, FK	Employee(employee_id)	P00001
qualification	The qualification of the doctor.	Varchar2	20	No	-	-	MMSc
expertise	The expertise of the doctor.	Varchar2	30	Yes	-	-	Obstetrics and gynecology

4.12 Admission

Admission							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
admission_id	A 6-character unique identifier that begins with the	Varchar2	6	No	PK	-	A00001

	letter “A” for “Admission”						
patient_id	A 6-character unique identifier that begins with the letter “P” for “Patient”	Varchar2	6	No	FK	Patient (patient_id)	P00001
employee_id	A 6-character unique identifier that begins with the letter “P” for “Employee”	Varchar2	6	No	FK	Employee (employee_id)	P00001
admission_date	The date and time in which the Patient is admitted into the hospital	Timestam p	-	No	-	-	10-Sep-02 14:10:10.123 000
discharge_date	The date and time in which the Patient is discharged from the hospital	Timestam p	-	Yes	-	-	11-Sep-02 14:10:10.123 000
bed_id	A 4-character unique identifier that begins with the letter “B” for “Bed”	Varchar2	4	Yes	FK	Bed (bed_id)	B001
status	The status of the patient in which the	Varchar2	1	Yes	-	-	R

	patient recovered, inpatient or dead in the hospital. 'R' represents recovered, 'I' represents inpatient, 'D' represents dead, 'O' represents others.						
summary	The brief description of the patient's admission.	Varchar2	100	Yes	-	-	Contracted COVID-19

4.13 Bill

Bill							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
bill_id	A 6-character unique identifier that begins with the letter "I" for "Invoice"	Varchar2	6	No	PK	-	I00001
admission_id	A 6-character unique identifier that begins with the letter "A"	Varchar2	6	No	FK	Admission (Admission_id)	A00001

	for “Admission”						
description	A description of the bill’s contents	Varchar2	50	No	-	-	General checkup, antibiotics dosage X2 bottles, cough medicine
method	The payment method used for a particular bill	Varchar2	20	Yes	-	-	Credit card
due_date	The latest date by which the Patient has to pay a particular bill	Date	-	No	-	-	2021/11/2 0
amount	The total costs of an admission in Ringgit Malaysia (RM), manually calculated and entered by Employees	Number	(10, 2)	No	-	-	1000.00
payment_date	The date in which the Patient pays for a particular bill	Timestamp	-	Yes	-	-	2021/11/2 0

4.14 ServiceRecord

ServiceRecord							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
service_record_id	A 6-character unique identifier that begins with the letter “S” for “ServiceRecord”	Varchar2	6	No	PK	-	S00001
admission_id	A 6-character unique identifier that begins with the letter “A” for “Admission”	Varchar2	6	Yes	FK	Admission (admission_id)	A00001
doctor_id	A 6-character unique identifier that begins with the letter “P”	Varchar2	6	Yes	FK	Doctor (doctor_id)	P00001
nurse_id	A 6-character unique identifier that begins with the letter “P”	Varchar2	6	Yes	FK	Nurse (nurse_id)	P00001
room_id	A 4-character unique identifier that begins with the letter “R” for “Room”	Varchar2	4	Yes	FK	Room (room_id)	R001
service_id	A 4-character unique identifier that begins with the letter “L” for “List”	Varchar2	6	Yes	FK	ServiceList (service_id)	L00001
disease_id	A 4-character unique identifier that	Varchar	6	Yes	FK	Disease(disease_id)	G00001

	begins with “G”						
summary	The summary of the service record	Varchar	60	Yes	-	-	The patient is healthy.
start_time	The time in which the Patient get the service from the hospital	Timesta mp	-	Yes	-	-	21-MAR-21 06.00.39.808 000 PM
end_time	The time in which the Patient get the service from the hospital	Timesta mp	-	Yes	-	-	21-MAR-21 06.00.39.808 000 PM

4.15 Prescription

Prescription							
Column Name	Description	Data Type	Length /size	Nulls	PK /FK	Reference to	Sample Data
service_record_id	A 6-character unique identifier that begins with the letter “S” for “ServiceRecord”	Varchar 2	6	No	PK, FK	-	S00001
medicalequipment_id	A 6-character unique identifier that begins with the letter “M” for “Medicalequipment”	Varchar 2	6	No	PK, FK	Room (room_id)	M00001
quantity	Quantity of medical supply in the prescription	Integer	-	No	-	-	10
unit_price	The unit price of that medical supply	Number	(10,2)	No	-	-	30.20

5.0 Tables and Records

Listed below are the 5 sample records for the 15 tables in the proposed database system.

5.1 Person

Person					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
person_id	P00001	P00002	P00003	P00004	P00005
first_name	Jheng Khin	Haryati	Kevin	Merry	Puspa
last_name	Yap	Izzati	Owens	Yeung	Sangkara
gender	M	F	M	F	F
birth_date	20-NOV-66	02-DEC-87	31-OCT-00	07-JUL-95	31-MAY-79
email	polarbearyap2@gmail.com	jasonlim2@gmail.com	kevin_owens@gmail.com	merry_yeung@gmail.com	Puspa_sangkara@gmail.com
phone_number	+60164220081	+60161811344	+6016151517	+60164227373	+60164220081
address_line	31 Jln Sibu 16 Taman Wahyu Shah Alam	16 Jln Zabadah 83000 Batu Pahat Johor Bahru	21 Jln Haji Yaakub Kampung Air Kota Kinabalu	No. 74 Stadium Sultan Jln Mahmood Kota Bahru	1064 1 Jln Bintang Jaya 1 Bintang Jaya Kuching
address_zip_code	66663	83000	88000	15200	98000
address_state	Selangor	Johor	Sabah	Kelantan	Sarawak
blood_type	NULL	B	A	O	AB
rh_type	NULL	-	+	+	+
vaccination_eligibility	y	y	n	y	y
vaccination_status	n	n	n	y	n

5.2 Room

Room					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5

room_id	R001	R002	R003	R004	R005
room_name	Kid's Ward	General Ward 1	Operation Theatre 1	Operation Theatre 2	Consultation Room 1
type	Patient Ward	Patient Ward	Operation	Operation	Consultation
location	West Wing L2	West Wing L2	East Wing L1	East Wing L1	West Wing LG
price	300	500	1000	1500	150

5.3 Disease

Disease					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
disease_id	G00001	G00002	G00003	G00004	G00005
name	COVID-19	Cancer	Dengue fever	Heart disease	AIDS
symptom	Fever, Dry cough, Loss of taste or smell, Nasal congestion	Cough, hoarseness, Anemia, Bleeding, Bruising, Weight change	Headache, Muscle, bone, joint pain, nausea, Vomiting, Rash	Chest pain, Chest tightness, Shortness of breath	Swollen lymph nodes, Tuberculosis, Bacterial infections
cause	SARS-CoV-2	Gene mutation	Dengue virus	Smoking, Diabetes, Stress	HIV, STI, unsafe tissue transplantati on
cure	Dexamethas one	Chemothera py, Immunother apy, Gene therapy	Acetaminop hen	Mechanical assist device, Heart transplant	Antiretrovira l treatment

5.4 Medicaequipment

Medicaequipment					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
medicalequi pment_id	M00001	M00002	M00003	M00004	M00005
name	Paracetamol 500mg	Paracetamol 1000mg	Aspirin 500mg	Aspirin 1000mg	Ibuprofen 400mg
type	medicine	medicine	medicine	medicine	medicine

description	Cure fever	Cure fever	Acetylsalicylic acid, reduce pain	Acetylsalicylic reduce pain	Treating pain, fever, and inflammation
expiration_date	01-JAN-22	31-DEC-23	08-JUL-21	01-MAR-28	22-FEB-26
unit_price	1.5	2.5	3.1	4.2	3.5
stock_quantity	50	50	51	170	200

5.5 Servicelist

Servicelist					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
service_id	L00001	L00002	L00003	L00004	L00005
name	X-ray Chest	X-ray body	CT scan	Blood-Type Test	Health Check
description	For lungs	For organ	body 360 xray	Check blood test	Check health annually
price	70	100	251	20	200

5.6 Department

Department					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
department_id	D00001	D00002	D00003	D00004	D00005
name	Diagnostic Imaging	Intensive Care Unit (ICU)	General Surgery	Admission	Finance
description	A place to conduct X-Ray and radiology.	A special department of a hospital or health care facility that provides intensive treatment medicalequipment.	A place to conduct a wide range of types of surgery and procedures on patients.	A place to collect patient's information and sign consent forms before being taken to the hospital unit or ward	A place in hospitals and other health care facilities that performs sterilization and other actions on medical equipment, devices, and

					consumables
head	P00024	P00016	P00025	P00015	NULL

5.7 Employee

Employee					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
employee_id	P00006	P00007	P00008	P00009	P00010
salary	5800.9	4800.78	6000.9	5000.78	4000.67
hire_date	14-JUL-11	30-SEP-12	10-OCT-16	27-JAN-14	29-APR-18
manager_id	NULL	NULL	NULL	NULL	P00008
department_id	D00004	D00005	D00004	D00005	D00004
leave_date	31-DEC-16	20-SEP-14	NULL	NULL	NULL

5.8 Patient

Patient					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
patient_id	P00001	P00002	P00003	P00004	P00027
Death_date	NULL	NULL	NULL	NULL	22-MAR-02 03.10.10.123 000 AM

5.9 Bed

Bed					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
bed_id	B001	B002	B003	B004	B005
room_id	R001	R001	R002	R002	R002

5.10 Nurse

Nurse					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
nurse_id	P00013	P00014	P00015	P00016	P00017
speciality	Dermatology	Developmental Disability	Pediatrics	ICU	Surgery

5.11 Doctor

Doctor					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
doctor_id	P00020	P00021	P00022	P00023	P00024
qualification	MCh	MMSc	DSurg	MCh	MBBS
expertise	Internal medicine	Allergy and immunology	Anesthesiology	Dermatology	Diagnostic radiology

5.12 Admission

Admission					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
Admission_id	A00001	A00002	A00003	A00004	A00005
Patient_id	P00001	P00002	P00003	P00003	P00004
Employee_id	P00008	P00009	P00009	P00010	P00010
Admission_date	10-JAN-20 02.10.10.123 000 PM	12-FEB-20 11.10.10.123 000 PM	22-FEB-20 04.11.10.123 000 PM	21-MAR-20 05.10.10.123 000 PM	22-MAR-20 05.10.10.123 000 PM
Discharge_date	26-MAR-21 10.10.10.123 000 PM	17-FEB-20 11.10.10.123 000 PM	28-FEB-20 04.11.10.123 000 PM	NULL	NULL
Bed_id	B001	B002	B003	B004	B005
Status	R	R	R	R	R
Summary	Discharged	Discharged	Discharged	In coma	In coma

Bill					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
Bill_id	I00001	I00002	I00004	I00005	I00006
Admission_id	A00001	A00001	A00003	A00004	A00004
Description	General check-up, antibiotics	Heart transplant	Anti-diarrhea pills X2 boxes	Neuroendosc opy	General ward 3 nights with meals
Method	Credit Card	NULL	NULL	Debit Card	Debit Card
Due_date	10-JAN-20	10-JAN-20	13-MAR-20	14-DEC-20	14-DEC-21
Amount	300	3000	100	5000	5000
Payment_date	14-MAR-20 12.00.00.000 000 AM	NULL	NULL	16-DEC-20 05.10.10.123 000 PM	22-MAR-21 05.10.10.123 000 PM

Servicerecord					
Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
service_record_id	S00001	S00002	S00003	S00004	S00005
admission_id	A00001	A00002	A00003	A00003	A00002
doctor_id	P00025	P00026	P00024	P00021	P00026
nurse_id	P00015	P00016	P00013	P00017	P00016
room_id	R005	R0005	R007	R006	R005
Service_id	L00005	L00006	L00003	L00004	L00006
Disease_id	G00002	G00003	G00004	G00005	G00003
Summary	Normal consult	Normal consult	Normal consult	O-	Normal consult
Start_time	21-MAR-21 02.10.10.123 000 PM	21-MAR-21 02.10.10.123 000 PM	21-MAR-21 02.10.10.123 000 PM	21-MAR-21 10.10.10.123 000 PM	21-MAR-21 03.10.10.123 000 PM
End_time	21-MAR-21 03.10.10.123 000pm	NULL	NULL	22-MAR-21 10.58.10.123 000pm	NULL

Prescription

Column Name	Record 1	Record 2	Record 3	Record 4	Record 5
service_record_id	S00003	S00006	S00006	S00006	S00005
Medicalequipment_id	M00001	M00001	M00006	M00007	M00008
quantity	20	20	5	8	10
unit_price	1.5	1.5	3.5	5	5

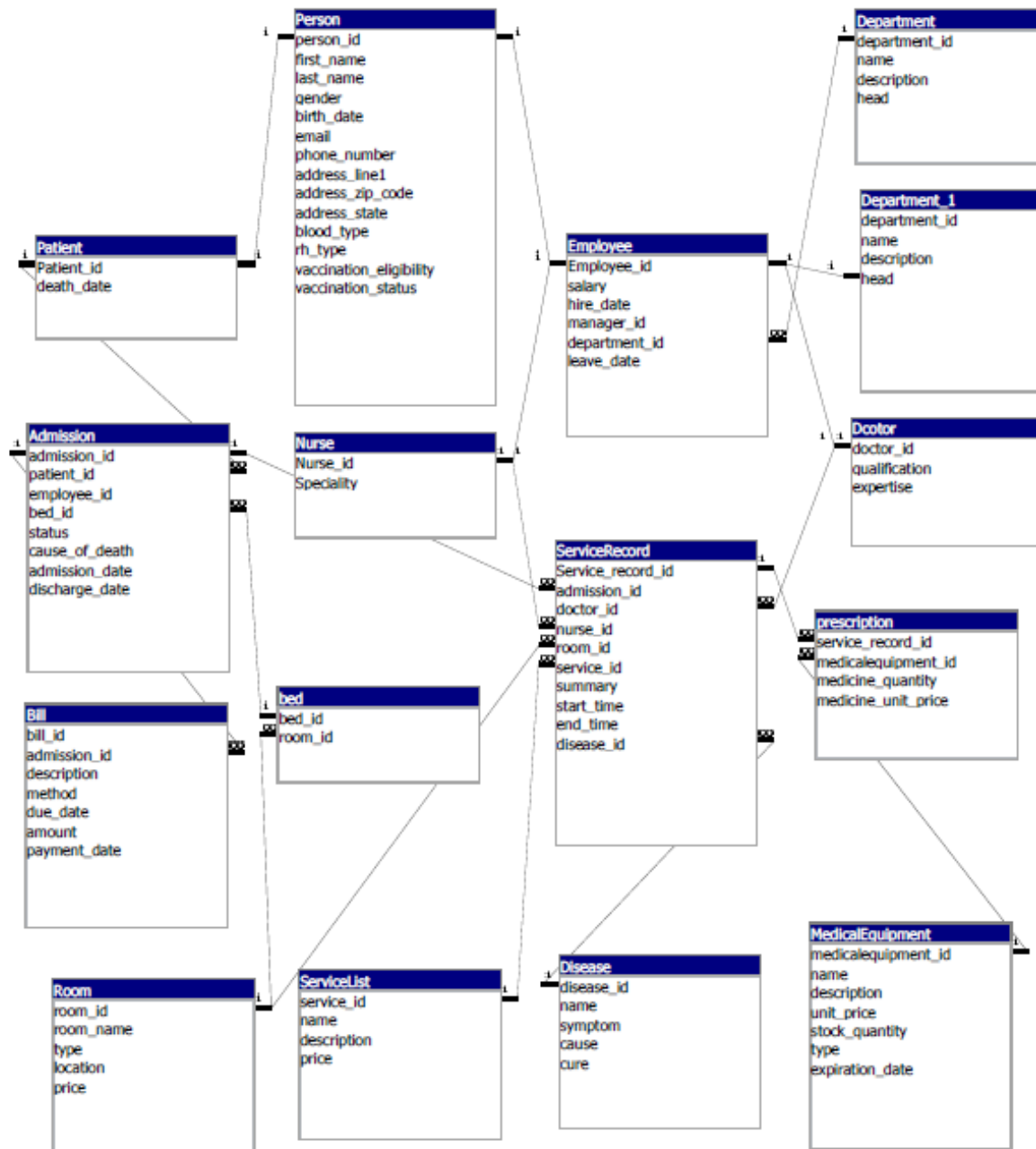
6.0 SQL Script and Implementation

This section includes the Microsoft Access implementation, user privileges implementation and the actual SQL script of the proposed hospital database system.

6.1 Microsoft Access Implementation

To test the proposed hospital database system, all the tables and the relationships were entered into a blank Microsoft Access file. In Microsoft Access, if the relationships of our proposed EERD were not valid, then we would not be able to create the tables. However, as shown in the figure below, we are able to create the full 15-table EERD as per our EERD design. All the one to many, zero to many and one to one relationships were set according by referencing the **foreign keys** to the **primary keys** of their respective parent tables. As for the relationship between the Person, Patient, Employee, Nurse and Doctor tables, we chose to use one-to-one relationships to portray the inheritance. This means that the Person table and the Patient table has a one-to-one relationship between them, and so on and so forth for the rest of the tables mentioned earlier. We encountered no errors and were able to create the entire proposed hospital database EERD.

In the figure below, there are two department tables because there are two relationships from Employee to Department. The first one represents “Each Employee belongs to zero or one Department” and the other relationships represents “Each Department is managed by one and only one Manager (Employee). Therefore, when we implemented this in Microsoft Access, an additional table was automatically created for Department to show the two relationships between the tables clearly.



6.2 User Privilege Implementation

The proposed hospital management database system will be used by doctors, nurses as well as the admin staff at the hospital. Therefore, user privileges have to be defined in the proposed database SQL script.

A total of three roles will be created, each with their own set of user privileges. The three roles along with their respective privileges are listed below:

- Admin – This role has the highest level of privileges among all the roles within this database system. This role is to be granted to the four of us in this group assignment as well as future admins of the hospital. Privileges for this role include the system privileges to create tables, views and sessions with the admin option enabled. This means that admins may grant other users these system privileges. Moreover, the admin role has the object privileges to select, insert, update and delete records in every entity in the database.
- Doctor – The doctor role has the system privilege to create views and the object privileges to select records from the person, employee, nurse, doctor, servicerecord, servicelist, medicalequipment, prescription, disease and patient entities. This role is to be granted to all doctors in the hospital so that they may retrieve information regarding the patients, medicines and services to be performed. The doctor role is not allowed to insert records as all new records would have to be approved by the hospital admins before they can be added to the database system.
- Nurse – The nurse role has the system privilege to create views and the object privileges to select records from the person, employee, nurse, doctor, servicerecord, servicelist, medicalequipment, prescription, disease and patient entities. This role is to be granted to all nurses in the hospital so that they may retrieve information regarding the patients, medicines and services to be performed. Similar to the doctor role, the nurse role is not allowed to insert records as all new records would have to be approved by the hospital admins before they can be added to the database system.

Moreover, all three roles were granted unlimited tablespace. The figure below shows the creation of the three roles and the granting of system and object privileges.

```

1988
1989
1990 -- System Priviledges
1991
1992 GRANT create table, create view, create session TO admin WITH ADMIN OPTION;
1993 GRANT create view TO doctor, nurse;
1994
1995 --Object Priviledges
1996
1997
1998 GRANT SELECT, INSERT, UPDATE, DELETE ON person TO admin;
1999 GRANT SELECT, INSERT, UPDATE, DELETE ON doctor TO admin;
2000 GRANT SELECT, INSERT, UPDATE, DELETE ON nurse TO admin;
2001 GRANT SELECT, INSERT, UPDATE, DELETE ON employee TO admin;
2002 GRANT SELECT, INSERT, UPDATE, DELETE ON patient TO admin;
2003 GRANT SELECT, INSERT, UPDATE, DELETE ON admission TO admin;
2004 GRANT SELECT, INSERT, UPDATE, DELETE ON servicerecord TO admin;
2005 GRANT SELECT, INSERT, UPDATE, DELETE ON servicelist TO admin;
2006 GRANT SELECT, INSERT, UPDATE, DELETE ON medicalequipment TO admin;
2007 GRANT SELECT, INSERT, UPDATE, DELETE ON prescription TO admin;
2008 GRANT SELECT, INSERT, UPDATE, DELETE ON bed TO admin;
2009 GRANT SELECT, INSERT, UPDATE, DELETE ON room TO admin;
2010 GRANT SELECT, INSERT, UPDATE, DELETE ON disease TO admin;
2011 GRANT SELECT, INSERT, UPDATE, DELETE ON department TO admin;
2012 GRANT SELECT, INSERT, UPDATE, DELETE ON bill TO admin;
2013
2014 GRANT SELECT ON nurse TO nurse;
2015 GRANT SELECT ON doctor TO doctor;
2016 GRANT SELECT ON servicerecord TO doctor, nurse;
2017 GRANT SELECT ON servicelist TO doctor, nurse;
2018 GRANT SELECT ON medicalequipment TO doctor, nurse;
2019 GRANT SELECT ON prescription TO doctor, nurse;
2020 GRANT SELECT ON patient TO doctor, nurse;
2021 GRANT SELECT ON disease TO doctor, nurse;
2022
2023 GRANT UNLIMITED TABLESPACE TO admin, nurse, doctor;

```

Next, a list of users was created, and the respective roles were granted to them. This is shown in the figure below.

```

-----
--Create Users
-----

CREATE USER yapjhenkhin IDENTIFIED BY abc123;
CREATE USER jacynththam IDENTIFIED BY abc1234;
CREATE USER tanjingjie IDENTIFIED BY abc12345;
CREATE USER tanweimun IDENTIFIED BY abc123456;

CREATE USER dodefarre IDENTIFIED BY abcd;
CREATE USER janesilverstone IDENTIFIED BY hfyr;
CREATE USER loriannebrak IDENTIFIED BY iwhf;
CREATE USER nollipeynn IDENTIFIED BY abcee;
CREATE USER kayfedoronko IDENTIFIED BY abc1233d;
CREATE USER erwin IDENTIFIED BY abdjeo;

GRANT admin to yapjhenkhin;
GRANT admin to jacynththam;
GRANT admin to tanjingjie;
GRANT admin to tanweimun;

GRANT admin to dodefarre;
GRANT admin to janesilverstone;
GRANT admin to loriannebrak;

GRANT nurse to nollipeynn;
GRANT nurse to kayfedoronko;

GRANT doctor to erwin;

```

After the script was run, the `SELECT * FROM USER_ROLE_PRIVS;` command was used to check the presence of the three newly created roles. The results are shown as below:

```
SQL> SELECT * FROM USER_ROLE_PRIVS;
```

USERNAME	GRANTED_ROLE	ADM	DEF	OS_
SYSTEM	ADMIN	YES	YES	NO
SYSTEM	AQ_ADMINISTRATOR_ROLE	YES	YES	NO
SYSTEM	DBA	YES	YES	NO
SYSTEM	DOCTOR	YES	YES	NO
SYSTEM	NURSE	YES	YES	NO

Next, using the `SELECT * FROM all_users;` command, the list of newly created users can be viewed. The results are shown below. Bounded by the red box are the names of the group members.

USERNAME	USER_ID	CREATED
ERWIN	479	22-MAR-21
JADABIRMINGHAM	219	21-MAR-21
KAYFEDORONKO	478	22-MAR-21
NOLLIEPYNN	477	22-MAR-21
LORIANNEBRAK	476	22-MAR-21
JANESILVERSTONE	475	22-MAR-21
DODEFARRE	474	22-MAR-21
TANWEIMUN	473	22-MAR-21
TANJINGJIE	472	22-MAR-21
JACYNTHTHAM	471	22-MAR-21
YAPJHENKHIN	470	22-MAR-21

The system privileges of the three roles can be checked using the `SELECT * FROM DBA_SYS_PRIVS` command, using the `WHERE` clause to filter for the admin, nurse and doctor's system privileges respectively. The results are shown below:

```
SQL> SELECT * FROM DBA_SYS_PRIVS WHERE Grantee='ADMIN';
```

GRANTEE	PRIVILEGE	ADM
ADMIN	CREATE TABLE	YES
ADMIN	CREATE VIEW	YES
ADMIN	CREATE SESSION	YES
ADMIN	UNLIMITED TABLESPACE	NO

```
SQL> SELECT * FROM DBA_SYS_PRIVS WHERE Grantee='NURSE';
```

GRANTEE	PRIVILEGE	ADM
NURSE	CREATE VIEW	NO
NURSE	UNLIMITED TABLESPACE	NO

```
SQL> SELECT * FROM DBA_SYS_PRIVS WHERE Grantee='DOCTOR';
```

GRANTEE	PRIVILEGE	ADM
DOCTOR	CREATE VIEW	NO
DOCTOR	UNLIMITED TABLESPACE	NO

```
SQL>
```

Similarly, the roles' object privileges can be viewed using the SELECT * FROM DBA_TAB_PRIVS. The figure below shows the results when the WHERE Grantee='ADMIN' is used as an example (only partial output shown).

```
SQL> SELECT * FROM DBA_TAB_PRIVS WHERE Grantee='ADMIN';
```

GRANTEE	OWNER	TABLE_NAME	GRANTOR	PRIVILEGE	GRA	HIE
ADMIN	SYSTEM	PATIENT	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	PATIENT	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	PATIENT	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	PATIENT	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	PERSON	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	PERSON	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	PERSON	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	PERSON	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	PRESCRIPTION	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	PRESCRIPTION	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	PRESCRIPTION	SYSTEM	INSERT	NO	NO

GRANTEE	OWNER	TABLE_NAME	GRANTOR	PRIVILEGE	GRA	HIE
ADMIN	SYSTEM	PRESCRIPTION	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	ROOM	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	ROOM	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	ROOM	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	ROOM	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	SERVICELIST	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	SERVICELIST	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	SERVICELIST	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	SERVICELIST	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	SERVICERECORD	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	SERVICERECORD	SYSTEM	SELECT	NO	NO

GRANTEE	OWNER	TABLE_NAME	GRANTOR	PRIVILEGE	GRA	HIE
ADMIN	SYSTEM	SERVICERECORD	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	SERVICERECORD	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	MEDICINE	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	MEDICINE	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	MEDICINE	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	MEDICINE	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	NURSE	SYSTEM	UPDATE	NO	NO
ADMIN	SYSTEM	NURSE	SYSTEM	SELECT	NO	NO
ADMIN	SYSTEM	NURSE	SYSTEM	INSERT	NO	NO
ADMIN	SYSTEM	NURSE	SYSTEM	DELETE	NO	NO
ADMIN	SYSTEM	ADMISSION	SYSTEM	UPDATE	NO	NO

6.3 SQL Script

```
-----

--PROGRAMME (IA/IB/CS): CS
--GROUP NUMBER e.g. G01: G08
--GROUP LEADER NAME & EMAIL: TAN JING JIE  tanjingjie@lutar.my
--MEMBER 2 NAME: JACYNTH THAM MING QUAN
--MEMBER 3 NAME: TAN WEI MUN
--MEMBER 4 NAME: YAP JHENG KHIN
--Submission date and time (DD-MON-YY): 27-MAR-21

--GROUP ASSIGNMENT SUBMISSION
--Submit one individual report with partial/full output screenshot (*.docx)
--and one sql script (*.sql for oracle 11g)

--Template save as "G??_group_script.sql" e.g. G01_group_script.sql
--Part 1 script only.
--Refer to the format of Northwoods.sql as an example for group sql script submission

--Your GROUP member information should appear in both files one individual report docx &
one individual sql script, then save as UCCD2203_Assignment_CS_G01.zip

-----

-----

--                Welcome to Hospital Database                --
-----

--Jacynth Tham Ming Quan 1801600
--Tan Jing Jie 1804560
--Tan Wei Mun 1803705
--Yap Jheng Khin 1800224
```

--The sequence of creating tables

--Person, Room, MedicalEquipment, ServiceList, Department

--Employee, Patient, Bed

--Nurse, Doctor, Admission

--Bill, ServiceRecord

--Prescription

--Set Display

SET FEEDBACK 1

SET NUMWIDTH 10

SET LINESIZE 20000

SET TRIMSPPOOL ON

SET TAB OFF

SET PAGESIZE 100

SET ECHO OFF

--Drop Tables

DROP TABLE disease CASCADE CONSTRAINTS;

DROP TABLE prescription CASCADE CONSTRAINTS;

DROP TABLE bill CASCADE CONSTRAINTS;

DROP TABLE servicerecord CASCADE CONSTRAINTS;

DROP TABLE admission CASCADE CONSTRAINTS;

DROP TABLE bed CASCADE CONSTRAINTS;

DROP TABLE person CASCADE CONSTRAINTS;

DROP TABLE patient CASCADE CONSTRAINTS;

DROP TABLE employee CASCADE CONSTRAINTS;

```
DROP TABLE nurse CASCADE CONSTRAINTS;
DROP TABLE doctor CASCADE CONSTRAINTS;
DROP TABLE department CASCADE CONSTRAINTS;
DROP TABLE medicalequipment CASCADE CONSTRAINTS;
DROP TABLE room CASCADE CONSTRAINTS;
DROP TABLE servicelist CASCADE CONSTRAINTS;
```

```
DROP USER yapjhengkhin CASCADE;
DROP USER jacynththam CASCADE;
DROP USER tanjingjie CASCADE;
DROP USER tanweimun CASCADE;
```

```
DROP USER dodefarre CASCADE;
DROP USER janesilverstone CASCADE;
DROP USER loriannebrak CASCADE;
DROP USER nolliepynn CASCADE;
DROP USER kayfedoronko CASCADE;
DROP USER erwin CASCADE;
```

```
DROP ROLE admin;
DROP ROLE nurse;
DROP ROLE doctor;
```

```
-----
--CREATE TABLE (Refer to top for adding sequence)
-----
```

```
--Person
```

```
CREATE TABLE person
```

```
(
    person_id VARCHAR2(6),
    first_name VARCHAR2(15) CONSTRAINT person_first_name_nn NOT NULL,
    last_name VARCHAR2(15) CONSTRAINT person_last_name_nn NOT NULL,
```

```

gender VARCHAR2(1) CONSTRAINT person_gender_nn NOT NULL,
birth_date DATE CONSTRAINT person_birth_date_nn NOT NULL,
email VARCHAR2(30),
phone_number VARCHAR2(15) CONSTRAINT person_phone_number_nn NOT
NULL,
address_line VARCHAR2(50),
address_zip_code VARCHAR2(5),
address_state VARCHAR2(25),
blood_type VARCHAR2(2),
rh_type CHAR(1),
vaccination_eligibility CHAR(1) CONSTRAINT person_vaccination_eligible_nn
NOT NULL,
vaccination_status CHAR(1) CONSTRAINT person_vaccination_status_nn NOT
NULL,
CONSTRAINT person_person_id_pk PRIMARY KEY (person_id),
CONSTRAINT person_email_uq UNIQUE (email),
CONSTRAINT person_person_id_check
CHECK(REGEXP_LIKE(person_id, '^P\d{5}$')),
CONSTRAINT person_gender_check CHECK(gender IN ('M', 'F', 'O')),
CONSTRAINT person_address_zip_code_check
CHECK(LENGTH(address_zip_code) = 5),
CONSTRAINT person_blood_type_check CHECK(blood_type IN ('A', 'B', 'O', 'AB')),
CONSTRAINT person_RH_type_check CHECK(rh_type IN ('+', '-')),
CONSTRAINT person_vaccination_eligible_ck CHECK(vaccination_eligibility IN
('y', 'n')),
CONSTRAINT person_vaccination_status_ck CHECK(vaccination_status IN ('y',
'n'))
);

```

--Room

CREATE TABLE room

```

(
    room_id VARCHAR2(4),
    room_name VARCHAR2(30) CONSTRAINT room_room_name_nn NOT NULL,

```

```

type VARCHAR2(30) CONSTRAINT room_type_nn NOT NULL,
location VARCHAR2(30) CONSTRAINT room_location_nn NOT NULL,
price NUMERIC(10, 2) CONSTRAINT room_price_nn NOT NULL,
CONSTRAINT room_room_id_pk PRIMARY KEY (room_id),
CONSTRAINT room_room_name_uq UNIQUE (room_name),
CONSTRAINT room_room_id_check
CHECK(REGEXP_LIKE(room_id, '^R\d{3}$'))
);

```

--Disease

```
CREATE TABLE disease
```

```

(
    disease_id VARCHAR2(6),
    name VARCHAR(20) CONSTRAINT disease_name_nn NOT NULL,
    symptom VARCHAR(75) CONSTRAINT disease_symptom_nn NOT NULL,
    cause VARCHAR(50) CONSTRAINT disease_cause_nn NOT NULL,
    cure VARCHAR(50) CONSTRAINT disease_cure_nn NOT NULL,
    CONSTRAINT disease_disease_id_pk PRIMARY KEY (disease_id),
    CONSTRAINT disease_disease_id_check
CHECK(REGEXP_LIKE(disease_id, '^G\d{5}$'))
);

```

--MedicalEquipment

```
CREATE TABLE medicalequipment
```

```

(
    medicalequipment_id VARCHAR2(6),
    name VARCHAR2(30) CONSTRAINT medicalequipment_name_nn NOT NULL,
    type VARCHAR2(25) CONSTRAINT medicalequipment_type_nn NOT NULL,
    description VARCHAR2(50) CONSTRAINT medicalequipment_desc_nn NOT
NULL,
    expiration_date DATE,
    unit_price Number(10,2) CONSTRAINT medicalequipment_unit_price_nn NOT
NULL,

```

```

        stock_quantity Integer CONSTRAINT medicalequipment_quantity_nn NOT NULL,
        CONSTRAINT medicalequipment_type_check CHECK(type IN ('medicine',
'organ_a', 'organ_b', 'organ_o', 'organ_ab', 'blood_bag_a', 'blood_bag_b', 'blood_bag_o',
'blood_bag_ab',
'vaccine_astra_zeneca','vaccine_pfizer_biontech','vaccine_sinovac','vaccine_cansino_biologic
s','vaccine_sputnik_v')),
        CONSTRAINT medicalequipment_id_pk PRIMARY KEY (medicalequipment_id),
        CONSTRAINT med_med_id_check
CHECK(REGEXP_LIKE(medicalequipment_id, '^M\d{5}$'))
);

```

--ServiceList

```

CREATE TABLE servicelist
(
    service_id Varchar2(6),
    name Varchar2(30) CONSTRAINT service_list_name_nn NOT NULL,
    description VARCHAR2(50) CONSTRAINT service_list_description_nn NOT
NULL,
    price Number(10,2) CONSTRAINT service_list_price_nn NOT NULL,
    CONSTRAINT service_list_service_id_pk PRIMARY KEY (service_id),
    CONSTRAINT service_list_id_check
CHECK(REGEXP_LIKE(service_id, '^L\d{5}$'))
);

```

--Department

```

CREATE TABLE department
(
    department_id VARCHAR2(6),
    name VARCHAR2(25) CONSTRAINT department_name_nn NOT NULL,
    description VARCHAR2(150) CONSTRAINT department_description_nn NOT
NULL,
    head VARCHAR2(6),
    CONSTRAINT department_department_id_pk PRIMARY KEY (department_id),
    CONSTRAINT department_name_uq UNIQUE (name),
    CONSTRAINT department_head_uq UNIQUE (head),

```

```

        CONSTRAINT department_id_check
CHECK(REGEXP_LIKE(department_id,'^D\d{5}$'))
);

--Employee
CREATE TABLE employee
(
    employee_id VARCHAR2(6),
    salary NUMBER(9, 2),
    hire_date DATE CONSTRAINT employee_hire_date NOT NULL,
    leave_date DATE,
    manager_id VARCHAR2(6),
    department_id VARCHAR2(6),
    CONSTRAINT employee_employee_id_fk FOREIGN KEY (employee_id)
REFERENCES person(person_id),
    CONSTRAINT employee_employee_id_pk PRIMARY KEY (employee_id),
    CONSTRAINT employee_manager_id_fk FOREIGN KEY (manager_id)
REFERENCES employee(employee_id),
    CONSTRAINT employee_department_id_fk FOREIGN KEY (department_id)
REFERENCES department(department_id),
    CONSTRAINT employee_salary_check CHECK(salary > 0)
);

ALTER TABLE employee
MODIFY hire_date DEFAULT sysdate;

ALTER TABLE department
ADD CONSTRAINT department_head_fk
FOREIGN KEY (head) REFERENCES employee(employee_id);

--hire date default constraint not set yet
--CONSTRAINT employee_hire_date_df DEFAULT sysdate

--Patient

```

```

CREATE TABLE patient
(
    patient_id VARCHAR2(6),
    death_date TIMESTAMP,
    CONSTRAINT patient_patient_id_fk FOREIGN KEY (patient_id) REFERENCES
person(person_id),
    CONSTRAINT patient_patient_id_pk PRIMARY KEY (patient_id)
);

```

--Bed

```

CREATE TABLE bed
(
    bed_id VARCHAR2(4) CONSTRAINT bed_bed_id_nn NOT NULL,
    room_id VARCHAR2(4) CONSTRAINT bed_room_id_nn NOT NULL,
    CONSTRAINT bed_bed_id_pk PRIMARY KEY (bed_id),
    CONSTRAINT bed_room_id_fk FOREIGN KEY (room_id) REFERENCES
room(room_id),
    CONSTRAINT bed_bed_id_check CHECK(REGEXP_LIKE(bed_id,'^B\d{3}$'))
);

```

--Nurse

```

CREATE TABLE nurse
(
    nurse_id VARCHAR2(6),
    speciality VARCHAR2(30) CONSTRAINT nurse_speciality_nn NOT NULL,
    CONSTRAINT nurse_nurse_id_fk FOREIGN KEY (nurse_id) REFERENCES
employee(employee_id),
    CONSTRAINT nurse_nurse_id_pk PRIMARY KEY (nurse_id)
);

```

--Doctor

```

CREATE TABLE doctor
(

```

```

        doctor_id VARCHAR2(6),
        qualification VARCHAR2(20) CONSTRAINT doctor_qualification_nn NOT NULL,
        expertise VARCHAR2(30),
        CONSTRAINT doctor_doctor_id_fk FOREIGN KEY (doctor_id) REFERENCES
employee(employee_id),
        CONSTRAINT doctor_doctor_id_pk PRIMARY KEY (doctor_id)
);

```

--Admission

```

CREATE TABLE admission
(
        admission_id VARCHAR2(6),
        patient_id VARCHAR2(6) CONSTRAINT admission_patient_id_nn NOT NULL,
        employee_id VARCHAR2(6) CONSTRAINT admission_employee_id_nn NOT
NULL,
        admission_date TIMESTAMP CONSTRAINT admission_admission_date_nn NOT
NULL,
        discharge_date TIMESTAMP,
        bed_id VARCHAR2(4),
        status VARCHAR2(1)CONSTRAINT admission_admission_status_nn NOT NULL,
        summary VARCHAR(100),
        CONSTRAINT admission_admission_id_pk PRIMARY KEY (admission_id),
        CONSTRAINT admission_bed_id_fk FOREIGN KEY (bed_id) REFERENCES
bed(bed_id),
        CONSTRAINT admission_employee_id_fk FOREIGN KEY (employee_id)
REFERENCES employee(employee_id),
        CONSTRAINT admission_patient_id_fk FOREIGN KEY (patient_id)
REFERENCES patient(patient_id),
        CONSTRAINT admission_id_check
CHECK(REGEXP_LIKE(admission_id,'^A\d{5}$')),
        CONSTRAINT admission_status_check CHECK(status IN('R','T','D','O'))
);

```



```

ALTER TABLE admission
MODIFY admission_date DEFAULT sysdate;
--default value for admission date sysdate

--Bill
CREATE TABLE bill
(
    bill_id VARCHAR2(6),
    admission_id VARCHAR2(6) CONSTRAINT bill_admission_id_nn NOT NULL,
    description VARCHAR2(50) CONSTRAINT bill_description_nn NOT NULL,
    method VARCHAR2(20),
    due_date DATE CONSTRAINT bill_due_date_nn NOT NULL,
    amount NUMBER(10, 2) CONSTRAINT bill_amount_nn NOT NULL,
    payment_date TIMESTAMP,
    CONSTRAINT bill_bill_id_pk PRIMARY KEY (bill_id),
    CONSTRAINT bill_admission_id_fk FOREIGN KEY (admission_id)
REFERENCES admission(admission_id),
    CONSTRAINT bill_id_check CHECK(REGEXP_LIKE(bill_id, '^I\d{5}$'))
);

--ServiceRecord
CREATE TABLE servicerecord
(
    service_record_id VARCHAR2(6),
    admission_id VARCHAR2(6),
    doctor_id VARCHAR2(6),
    nurse_id VARCHAR2(6),
    room_id VARCHAR2(4),
    service_id VARCHAR2(6),
    disease_id VARCHAR2(6),

```

```

summary VARCHAR2(60),
start_time TIMESTAMP,
end_time TIMESTAMP,
CONSTRAINT service_record_id_pk PRIMARY KEY (service_record_id),
CONSTRAINT admission_id_fk FOREIGN KEY (admission_id) REFERENCES
admission(admission_id),
CONSTRAINT doctor_id_fk FOREIGN KEY (doctor_id) REFERENCES
doctor(doctor_id),
CONSTRAINT nurse_id_fk FOREIGN KEY (nurse_id) REFERENCES
nurse(nurse_id),
CONSTRAINT room_id_fk FOREIGN KEY (room_id) REFERENCES
room(room_id),
CONSTRAINT service_id_fk FOREIGN KEY (service_id) REFERENCES
servicelist(service_id),
CONSTRAINT disease_id_fk FOREIGN KEY (disease_id) REFERENCES
disease(disease_id),
CONSTRAINT service_rec_id_check
CHECK(REGEXP_LIKE(service_record_id,'^S\d{5}$'))
);

```

```

ALTER TABLE servicerecord
MODIFY start_time DEFAULT sysdate;
--start date default sysdate

```

--Prescription

```

CREATE TABLE prescription
(
    service_record_id VARCHAR2(6),
    medicalequipment_id VARCHAR2(6),
    quantity INTEGER CONSTRAINT prescription_quantity_nn NOT NULL,
    unit_price NUMBER(10,2) CONSTRAINT prescription_unit_price_nn NOT NULL,
    CONSTRAINT Prescription_pk PRIMARY KEY
(service_record_id,medicalequipment_id),
CONSTRAINT service_record_id_fk FOREIGN KEY (service_record_id)
REFERENCES servicerecord(service_record_id),

```

```
        CONSTRAINT medicalequipment_id_fk FOREIGN KEY (medicalequipment_id)
REFERENCES medicalequipment(medicalequipment_id)
);
```

```
-----
--Insert Record
-----
```

```
-- Disease
```

```
INSERT INTO disease(disease_id, name, symptom, cause, cure)
VALUES ('G00001', 'COVID-19', 'Fever, Dry cough, Loss of taste or smell, Nasal
congestion', 'SARS-CoV-2', 'Dexamethasone');
```

```
INSERT INTO disease(disease_id, name, symptom, cause, cure)
VALUES ('G00002', 'Cancer', 'Cough, hoarseness, Anemia, Bleeding, Bruising, Weight
change', 'Gene mutation', 'Chemotherapy, Immunotherapy, Gene therapy');
```

```
INSERT INTO disease(disease_id, name, symptom, cause, cure)
VALUES ('G00003', 'Dengue fever', 'Headache, Muscle, bone, joint pain, nausea, Vomiting,
Rash', 'Dengue virus', 'Acetaminophen');
```

```
INSERT INTO disease(disease_id, name, symptom, cause, cure)
VALUES ('G00004', 'Heart disease', 'Chest pain, Chest tightness, Shortness of breath',
'Smoking, Diabetes, Stress', 'Mechanical assist device, Heart transplant');
```

```
INSERT INTO disease(disease_id, name, symptom, cause, cure)
VALUES ('G00005', 'AIDS', 'Swollen lymph nodes, Tuberculosis, Bacterial infections', 'HIV,
STI, unsafe tissue transplantation', 'Antiretroviral treatment');
```

```
--Department
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00001',
'Diagnostic Imaging', 'A place to conduct X-Ray and radiology.');
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00002',  
'Intensive Care Unit (ICU)', 'A special department of a hospital or health care facility that  
provides intensive treatment medicalequipment.');
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00003', 'General  
Surgery', 'A place to conduct a wide range of types of surgery and procedures on patients.');
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00004',  
'Admission', 'A place to collect patient's information and sign consent forms before being  
taken to the hospital unit or ward');
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00005', 'Finance',  
'A place in hospitals and other health care facilities that performs sterilization and other  
actions on medical equipment, devices, and consumables.');
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00006',  
'Nursing', 'A place to provide comprehensive, safe, effective and well-organized nursing care  
through the personnel of the department.');
```

```
INSERT INTO department(department_id, name, description) VALUES ('D00007',  
'Research', 'Doing bio research');
```

```
--Person related and its inheritance (Patient, Employee -->Nurse, Doctor)
```

```
-----  
-- Insert patient a.k.a person
```

```
-- P00001 P00002 P00003 P00004 P00005  
-----  
-----
```

```
-- Insert employee a.k.a person
```

```
-- P00006 P00007 P00008 P00009 P00010 P00011 P00012  
-----  
-----
```

```
-- Insert nurse a.k.a employee a.k.a person
```

```
-- P00013 P00014 P00015 P00016 P00017 P00018 P00019  
-----  
-----
```

-- Insert doctor a.k.a employee a.k.a person

-- P00020 P00021 P00022 P00023 P00024 P00025 P00026

--Patient -- P00001 P00002 P00003 P00004 P00005

INSERT INTO person

VALUES ('P00001',

'Jheng Khin',

'Yap',

'M',

TO_DATE('1966/11/20', 'yyyy/mm/dd'),

'polarbearyap2@gmail.com',

'+60164220081',

'31 Jln Sibu 16 Taman Wahyu Shah Alam',

'66663',

'Selangor',

null,

null,

'y',

'n');

INSERT INTO person

VALUES ('P00002',

'Haryati',

'Izzati',

'F',

TO_DATE('1987/12/02', 'yyyy/mm/dd'),

'jasonlim2@gmail.com',

'+60161811344',

'16 Jln Zabedah 83000 Batu Pahat Johor Bahru',

'83000',

'Johor',

```
'B',  
'-',  
'y',  
'n');
```

INSERT INTO person

```
VALUES ('P00003',  
       'Kevin',  
       'Owens',  
       'M',  
       TO_DATE('2000/10/31', 'yyyy/mm/dd'),  
       'kevin_owens@gmail.com',  
       '+6016151517',  
       '2 1 Jln Haji Yaakub Kampung Air Kota Kinabalu',  
       '88000',  
       'Sabah',  
       'A',  
       '+',  
       'n',  
       'n');
```

INSERT INTO person

```
VALUES ('P00004',  
       'Merry',  
       'Yeung',  
       'F',  
       TO_DATE('1995/07/07', 'yyyy/mm/dd'),  
       'merry_yeung@gmail.com',  
       '+60164227373',  
       'No. 74 Stadium Sultan Jln Mahmood Kota Bahru',  
       '15200',  
       'Kelantan',
```

'O',
'+',
'y',
'y');

INSERT INTO person

VALUES ('P00005',
 'Puspa',
 'Sangkara',
 'F',
 TO_DATE('1979/05/31', 'yyyy/mm/dd'),
 'Puspa_sangkara@gmail.com',
 '+60164220081',
 '1064 1 Jln Bintang Jaya 1 Bintang Jaya Kuching',
 '98000',
 'Sarawak',
 'AB',
 '+',
 'y',
 'n');

INSERT INTO person

VALUES ('P00027',
 'LEE',
 'Bruce',
 'M',
 TO_DATE('1955/06/06', 'yyyy/mm/dd'),
 'LEEBRUSE@gmail.com',
 '+666666666',
 '28216 Sunbrook Court Kuantan',
 '39001',
 'Kuala Lumpur',

```
'A',  
'-',  
'n',  
'n');
```

```
INSERT INTO person  
VALUES ('P00028',  
      'Zaria',  
      'Altham',  
      'M',  
      TO_DATE('1978/12/16', 'yyyy/mm/dd'),  
      'zaltham0@gmail.com',  
      '+5504876057',  
      '245 Maryland Drive Kota Bahru',  
      '15744',  
      'Kelantan',  
      'AB',  
      '-',  
      'y',  
      'n');
```

```
INSERT INTO person  
VALUES ('P00029',  
      'Umberto',  
      'Pinnington',  
      'F',  
      TO_DATE('1967/09/07', 'yyyy/mm/dd'),  
      'upinnington4@gmail.com',  
      '+1843838225',  
      '64 Sommers Circle Ipoh',  
      '98000',  
      'Perak',
```


'O',
'+',
'n',
'n');

INSERT INTO person

VALUES ('P00030',
 'Ardella',
 'Rickett',
 'F',
 TO_DATE('1955/06/06', 'yyyy/mm/dd'),
 'arickett8@gmail.com',
 '+4811556120',
 '71 Lakewood Parkway Johor Bahru',
 '83000',
 'Johor',
 'O',
 '-',
 'y',
 'n');

INSERT INTO person

VALUES ('P00031',
 'Upton',
 'Tipler',
 'M',
 TO_DATE('1988/04/13', 'yyyy/mm/dd'),
 'utipler9@gmail.com',
 '+9335446705',
 '6 Dryden Court Kuala Lumpur',
 '39001',
 'Wilayah Persekutuan',

'B',
'+',
'y',
'n');

INSERT INTO person

VALUES ('P00032',
 'Rickey',
 'Liles',
 'M',
 TO_DATE('2000/01/12', 'yyyy/mm/dd'),
 'rliles7@gmail.com',
 '+2666996833',
 '28216 Sunbrook Court Johor Bahru',
 '83000',
 'Johor',
 'AB',
 '-',
 'y',
 'n');

INSERT INTO person

VALUES ('P00033',
 'Izak',
 'Sivour',
 'M',
 TO_DATE('1985/05/08', 'yyyy/mm/dd'),
 'isivour1@gmail.com',
 '+1129652205',
 '39 Nevada Way Kuantan',
 '02224',
 'Pahang',

```
'AB',  
'-',  
'y',  
'n');
```

```
INSERT INTO patient VALUES ('P00001', null);
```

```
INSERT INTO patient VALUES ('P00002', null);
```

```
INSERT INTO patient VALUES ('P00003', null);
```

```
INSERT INTO patient VALUES ('P00004', null);
```

```
INSERT INTO patient VALUES ('P00005', null);
```

```
INSERT INTO patient VALUES ('P00027', TO_TIMESTAMP ('22-Mar-02  
03:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));
```

```
INSERT INTO patient VALUES ('P00028', null);
```

```
INSERT INTO patient VALUES ('P00029', TO_TIMESTAMP ('27-Feb-21  
03:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));
```

```
INSERT INTO patient VALUES ('P00030', null);
```

```
INSERT INTO patient VALUES ('P00031', null);
```

```
INSERT INTO patient VALUES ('P00032', null);
```

```
INSERT INTO patient VALUES ('P00033', null);
```

```
--Employee -- P00006 P00007 P00008 P00009 P00010 P00011 P00012
```

```
INSERT INTO person
```

```
VALUES ('P00006',  
        'Dode',  
        'Farre',  
        'M',  
        TO_DATE('1978/01/16', 'yyyy/mm/dd'),  
        'dfarre0@gmail.com',  
        '+3887808052',  
        '84636 Cody Plaza Kuala Lumpur',  
        '58000',  
        'Wilayah Persekutuan',  
        'O',  
        '+',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00007',  
        'Jane',  
        'Silverstone',  
        'F',  
        TO_DATE('1974/03/04', 'yyyy/mm/dd'),  
        'jsilverstone4@gmail.com',  
        '+4572423572',  
        '38611 Clyde Gallagher Court Klang',  
        '42100',  
        'Selangor',  
        'A',  
        '-',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00008',  
        'Lorianne',  
        'Braksper',  
        'F',  
        TO_DATE('1963/11/11', 'yyyy/mm/dd'),  
        'lbrakspere@gmail.com',  
        '+4069022734',  
        '3 Claremont Avenue Kuantan',  
        '02224',  
        'Pahang',  
        'B',  
        '+',  
        'y',  
        'y');
```

INSERT INTO person

```
VALUES ('P00009',  
        'Annie',  
        'Leonhart',  
        'M',  
        TO_DATE('1963/11/11', 'yyyy/mm/dd'),  
        'annie_op@gmail.com',  
        '+3701441224',  
        '02662 Prentice Road Kota Bahru',  
        '15744',  
        'Kelantan',  
        'A',  
        '+',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00010',  
        'Edith',  
        'Wearn',  
        'M',  
        TO_DATE('1983/04/07', 'yyyy/mm/dd'),  
        'ewearnc@gmail.com',  
        '+5935448404',  
        '871 Buena Vista Drive Johor Bahru',  
        '86555',  
        'Johor',  
        'AB',  
        '+',  
        'y',  
        'y');
```

INSERT INTO person

```
VALUES ('P00011',  
        'Teena',  
        'Swindles',  
        'F',  
        TO_DATE('1994/10/28', 'yyyy/mm/dd'),  
        'tswindles2@gmail.com',  
        '+1794873794',  
        '8889 Ryan Pass Melaka',  
        '77999',  
        'Melaka',  
        'A',  
        '+',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00012',  
        'Hange',  
        'Zoe',  
        'M',  
        TO_DATE('1994/04/01', 'yyyy/mm/dd'),  
        'love_titans@gmail.com',  
        '+60164220081',  
        '8095 Lake View Trail Ipoh',  
        '98000',  
        'Perak',  
        'AB',  
        '+',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00034',  
        'Han',  
        'Park',  
        'M',  
        TO_DATE('1994/04/01', 'yyyy/mm/dd'),  
        'han_parks@gmail.com',  
        '+60164220089',  
        '8095 Lake View Trail Ipoh',  
        '98000',  
        'Perak',  
        'AB',  
        '+',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00035',  
        'Rosie',  
        'Park',  
        'M',  
        TO_DATE('1997/04/01', 'yyyy/mm/dd'),  
        'bp_love@gmail.com',  
        '+60168820081',  
        '8095 Lake View Trail Ipoh',  
        '98000',  
        'Korea',  
        'AB',  
        '+',  
        'y',  
        'n');
```

INSERT INTO person

```
VALUES ('P00036',  
        'Lisa',  
        'Monaban',  
        'M',  
        TO_DATE('1997/07/01', 'yyyy/mm/dd'),  
        'dancingQueen@gmail.com',  
        '+60168820555',  
        '8095 Lake View Trail Ipoh',  
        '98000',  
        'Bangkok',  
        'AB',  
        '+',  
        'y',  
        'n');
```



```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00006', 5800.90, TO_DATE('2011/07/14', 'yyyy/mm/dd'),
TO_DATE('2016/12/31', 'yyyy/mm/dd'), null, 'D00004');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00007', 4800.78, TO_DATE('2012/09/30', 'yyyy/mm/dd'),
TO_DATE('2014/09/20', 'yyyy/mm/dd'), null, 'D00005');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00008', 6000.90, TO_DATE('2016/10/10', 'yyyy/mm/dd'), null, null, 'D00004');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00009', 5000.78, TO_DATE('2014/01/27', 'yyyy/mm/dd'), null, null, 'D00005');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00010', 4000.67, TO_DATE('2018/04/29', 'yyyy/mm/dd'), null, 'P00008',
'D00004');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00011', 3450.17, TO_DATE('2019/06/01', 'yyyy/mm/dd'), null, 'P00009',
'D00005');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00012', 3400.56, TO_DATE('2020/09/17', 'yyyy/mm/dd'), null, 'P00009',
'D00005');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
```

```
VALUES('P00034', 3405.56, TO_DATE('2015/09/17', 'yyyy/mm/dd'), null, null, null);
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
VALUES('P00035', 3777.56, TO_DATE('2017/09/17', 'yyyy/mm/dd'), null, null, null);
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,
department_id)
VALUES('P00036', 3956.56, TO_DATE('2016/09/17', 'yyyy/mm/dd'), null, null, null);
```

```
INSERT INTO patient VALUES ('P00008', null);
```

```
INSERT INTO patient VALUES ('P00009', null);
```

```
INSERT INTO patient VALUES ('P00010', null);
```

```
--Nurse -- P00013 P00014 P00015 P00016 P00017 P00018 P00019
```

```
INSERT INTO person
```

```
VALUES ('P00013',
        'Nollie',
        'Pynn',
        'F',
        TO_DATE('2007/11/08', 'yyyy/mm/dd'),
        'npynn8@gmail.com',
        '+4032782762',
        '93671 Kensington Park Teluk Intan',
        '36000',
        'Perak',
        'AB',
        '-',
        'y',
        'n');
```

```
INSERT INTO person
```

```
VALUES ('P00014',
```

```
'Steve',  
'Mityashev',  
'F',  
TO_DATE('2004/07/08', 'yyyy/mm/dd'),  
'smityashev5@gmail.com',  
'+5124796213',  
'2621 Bellgrove Crossing Sungai Buloh',  
'47000',  
'Selangor',  
'O',  
'-',  
'y',  
'n');
```

```
INSERT INTO person  
VALUES ('P00015',  
      'Constancia',  
      'Ready',  
      'F',  
      TO_DATE('2002/05/14', 'yyyy/mm/dd'),  
      'creadya@gmail.com',  
      '+4069022734',  
      '4 Mifflin Hill Kuantan',  
      '02344',  
      'Pahang',  
      'A',  
      '+',  
      'y',  
      'n');
```

```
INSERT INTO person  
VALUES ('P00016',
```

```
'Kay',  
'Fedoronko',  
'M',  
TO_DATE('2004/02/22', 'yyyy/mm/dd'),  
'kfedoronkod@gmail.com',  
'+3701441224',  
'41180 Shoshone Way Kota Bahru',  
'15774',  
'Kelantan',  
'O',  
'+',  
'y',  
'y');
```

```
INSERT INTO person  
VALUES ('P00017',  
      'Maggi',  
      'Nairn',  
      'F',  
      TO_DATE('1990/06/18', 'yyyy/mm/dd'),  
      'maggi@gmail.com',  
      '+9464871353',  
      '31 Delaware Drive George Town',  
      '14250',  
      'Pulau Penang',  
      'AB',  
      '+',  
      'y',  
      'y');
```

```
INSERT INTO person  
VALUES ('P00018',
```

```
'Genni',  
'Rhys',  
'F',  
TO_DATE('1994/10/28', 'yyyy/mm/dd'),  
'glettington0@gmail.com',  
'+1794873794',  
'8889 Ryan Pass Melaka',  
'77999',  
'Melaka',  
'O',  
'+',  
'y',  
'n');
```

```
INSERT INTO person  
VALUES ('P00019',  
      'Berkie',  
      'Damrell',  
      'M',  
      TO_DATE('2010/12/13', 'yyyy/mm/dd'),  
      'bdamrelld@gmail.com',  
      '+5935448404',  
      '02846 Kinsman Park Johor Bahru',  
      '86741',  
      'Johor',  
      'AB',  
      '+',  
      'n',  
      'n');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00013', 7000.90, TO_DATE('2000/12/11', 'yyyy/mm/dd'),  
TO_DATE('2001/01/30', 'yyyy/mm/dd'), null, 'D00006');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00014', 6800.78, TO_DATE('2000/12/11', 'yyyy/mm/dd'),  
TO_DATE('2005/11/18', 'yyyy/mm/dd'), 'P00013', 'D00006');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00015', 7000.90, TO_DATE('2000/12/11', 'yyyy/mm/dd'), null, null, 'D00006');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00016', 6800.78, TO_DATE('2005/02/17', 'yyyy/mm/dd'), null, 'P00015',  
'D00006');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00017', 5500.67, TO_DATE('2009/12/04', 'yyyy/mm/dd'), null, 'P00015',  
'D00006');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00018', 5400.17, TO_DATE('2012/08/01', 'yyyy/mm/dd'), null, 'P00015',  
'D00006');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00019', 5400.56, TO_DATE('2019/07/31', 'yyyy/mm/dd'), null, 'P00015',  
'D00006');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00013', 'Dermatology');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00014', 'Developmental Disability');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00015', 'Pediatrics');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00016', 'ICU');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00017', 'Surgery');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00018', 'Psychology');
```

```
INSERT INTO nurse(nurse_id, speciality)
```

```
VALUES ('P00019', 'Cardiology');
```

```
INSERT INTO patient VALUES ('P00016', null);
```

```
INSERT INTO patient VALUES ('P00017', null);
```

```
--Doctor -- P00020 P00021 P00022 P00023 P00024 P00025
```

```
INSERT INTO person
```

```
VALUES ('P00020',
```

```
    'Tan',
```

```
    'Jing Jie',
```

```
    'M',
```

```
    TO_DATE('2000/08/17', 'yyyy/mm/dd'),
```

```
    '2000tanjingjie@gmail.com',
```

```
    '+8973723278',
```

```
    '96089 Cody Junction Kuala Lumpur',
```

```
    '50300',
```

```
'Wilayah Persekutuan',  
'AB',  
'-',  
'y',  
'n');
```

```
INSERT INTO person  
VALUES ('P00021',  
      'Sasha',  
      'Braus',  
      'F',  
      TO_DATE('2000/10/30', 'yyyy/mm/dd'),  
      'sasha_rip@gmail.com',  
      '+4069022734',  
      '666 Mid Valley Alor Setar',  
      '02224',  
      'Kedah',  
      'AB',  
      '-',  
      'y',  
      'n');
```

```
INSERT INTO person  
VALUES ('P00022',  
      'Eren',  
      'Yeager',  
      'M',  
      TO_DATE('1987/10/12', 'yyyy/mm/dd'),  
      'eren_yeager@gmail.com',  
      '+3701441224',  
      '94 Mandrake Alley Kuching Kota Bahru',  
      '15744',
```


'Kelantan',
'AB',
'+',
'y',
'n');

INSERT INTO person
VALUES ('P00023',
 'Mikasa',
 'Ackerman',
 'F',
 TO_DATE('1987/10/18', 'yyyy/mm/dd'),
 'mikasa_ackerman@gmail.com',
 '+5935448404',
 '871 Buena Vista Drive Johor Bahru',
 '86555',
 'Johor',
 'B',
 '+',
 'y',
 'n');

INSERT INTO person
VALUES ('P00024',
 'Erwin',
 'Smith',
 'M',
 TO_DATE('1994/07/11', 'yyyy/mm/dd'),
 'erwin@gmail.com',
 '+4483545904',
 '871 Buena Vista Drive Johor Bahru',
 '86555',

'Johor',
'A',
'+',
'y',
'n');

```
INSERT INTO person
VALUES ('P00025',
       'Zeke',
       'Yeager',
       'M',
       TO_DATE('1977/12/10', 'yyyy/mm/dd'),
       'monke@gmail.com',
       '+1794873794',
       '4444 Monkey Island Kuching',
       '77999',
       'Sarawak',
       'O',
       '+',
       'y',
       'y');
```

```
INSERT INTO person
VALUES ('P00026',
       'Reiner',
       'Braun',
       'M',
       TO_DATE('1966/06/06', 'yyyy/mm/dd'),
       'reiner_cant_die@gmail.com',
       '+3667452666',
       '28216 Sunbrook Court Kuantan',
       '39001',
```

```
'Pahang',  
'AB',  
'-',  
'n',  
'n');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00020', 11000.00, TO_DATE('2010/03/11', 'yyyy/mm/dd'),  
TO_DATE('2013/12/10', 'yyyy/mm/dd'), null, 'D00001');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00021', 12345.89, TO_DATE('2013/09/10', 'yyyy/mm/dd'), null, null, 'D00001');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00022', 9539.78, TO_DATE('2014/04/25', 'yyyy/mm/dd'), null, null, 'D00002');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00023', 9807.67, TO_DATE('2018/01/11', 'yyyy/mm/dd'), null, null, 'D00003');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00024', 8400.56, TO_DATE('2019/08/13', 'yyyy/mm/dd'), null, 'P00021',  
'D00001');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00025', 8831.71, TO_DATE('2020/07/28', 'yyyy/mm/dd'), null, 'P00022',  
'D00002');
```

```
INSERT INTO employee(employee_id, salary, hire_date, leave_date, manager_id,  
department_id)
```

```
VALUES('P00026', 7871.12, TO_DATE('2021/02/20', 'yyyy/mm/dd'), null, 'P00023',  
'D00003');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00020', 'MCh', 'Internal medicalequipment');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00021', 'MMSc', 'Allergy and immunology');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00022', 'DSurg', 'Anesthesiology');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00023', 'MCh', 'Dermatology');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00024', 'MBBS', 'Diagnostic radiology');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00025', 'MMed', 'Pathology');
```

```
INSERT INTO doctor(doctor_id, qualification, expertise)  
VALUES('P00026', 'MPhil', 'Preventive medicalequipment');
```

```
INSERT INTO patient VALUES ('P00025', null);
```

```
--Department manager
```

```
UPDATE department SET head='P00025'  
WHERE department_id='D00003';
```

```
UPDATE department SET head='P00019'  
WHERE department_id='D00006';
```

```
UPDATE department SET head='P00016'  
WHERE department_id='D00002';
```

```
UPDATE department SET head='P00015'  
WHERE department_id='D00004';
```

```
UPDATE department SET head='P00024'  
WHERE department_id='D00001';
```

--Room

```
INSERT INTO room VALUES  
(R001, 'Kid"s Ward', 'Patient Ward', 'West Wing L2', 300);
```

```
INSERT INTO room VALUES  
(R002, 'General Ward 1', 'Patient Ward', 'West Wing L2', 500);
```

```
INSERT INTO room VALUES  
(R003, 'Operation Theatre 1', 'Operation', 'East Wing L1', 1000);
```

```
INSERT INTO room VALUES  
(R004, 'Operation Theatre 2', 'Operation', 'East Wing L1', 1500);
```

```
INSERT INTO room VALUES  
(R005, 'Consultation Room 1', 'Consultation', 'West Wing LG', 150);
```

```
INSERT INTO room VALUES  
(R006, 'Lab', 'Consultation', 'West Wing LG', 30);
```

```
INSERT INTO room VALUES  
(R007, 'CT room', 'CT Scan, X-ray', 'West Wing LG', 50);
```

INSERT INTO room VALUES

('R008', 'General Ward 2', 'Patient Ward', 'West Wing L2', 500);

INSERT INTO room VALUES

('R009', 'General Ward 3', 'Patient Ward', 'West Wing L3', 500);

INSERT INTO room VALUES

('R010', 'General Ward 4', 'Patient Ward', 'West Wing L3', 500);

INSERT INTO room VALUES

('R011', 'General Ward 5', 'Patient Ward', 'West Wing L3', 500);

INSERT INTO room VALUES

('R012', 'General Ward 6', 'Patient Ward', 'West Wing L4', 500);

INSERT INTO room VALUES

('R013', 'General Ward 7', 'Patient Ward', 'West Wing L4', 500);

INSERT INTO room VALUES

('R014', 'General Ward 8', 'Patient Ward', 'West Wing L4', 500);

INSERT INTO room VALUES

('R015', 'General Ward 9', 'Patient Ward', 'West Wing L4', 500);

INSERT INTO room VALUES

('R016', 'General Ward 10', 'Patient Ward', 'West Wing L4', 500);

INSERT INTO room VALUES

('R017', 'General Ward 11', 'Patient Ward', 'West Wing L4', 500);

INSERT INTO room VALUES

('R018', 'Vaccination Room 1', 'Vaccination Room', 'East Wing L2', 0);

INSERT INTO room VALUES

('R019', 'Vaccination Room 2', 'Vaccination Room', 'East Wing L2', 0);

INSERT INTO room VALUES

('R020', 'General Ward 12', 'Patient Ward', 'West Wing L4', 0);

--MedicalEquipment

INSERT INTO medicalequipment VALUES

('M00001', 'Paracetamol 500mg', 'medicine', 'Cure fever', TO_DATE('2022/01/01', 'yyyy/mm/dd'), 1.50, 50);

INSERT INTO medicalequipment VALUES

('M00002', 'Paracetamol 1000mg', 'medicine', 'Cure fever', TO_DATE('2023/12/31', 'yyyy/mm/dd'), 2.50, 50);

INSERT INTO medicalequipment VALUES

('M00003', 'Aspirin 500mg', 'medicine', 'Acetylsalicylic acid, reduce pain', TO_DATE('2021/07/08', 'yyyy/mm/dd'), 3.10, 51);

INSERT INTO medicalequipment VALUES

('M00004', 'Aspirin 1000mg', 'medicine', 'Acetylsalicylic reduce pane', TO_DATE('2028/03/01', 'yyyy/mm/dd'), 4.20, 170);

INSERT INTO medicalequipment VALUES

('M00005', 'Ibuprofen 400mg', 'medicine', 'Treating pain, fever, and inflammation', TO_DATE('2026/02/22', 'yyyy/mm/dd'), 3.50, 200);

INSERT INTO medicalequipment VALUES

('M00006', 'Ibuprofen 1000mg', 'medicine', 'Treating pain, fever, and inflammation', TO_DATE('2022/08/28', 'yyyy/mm/dd'), 4.00, 40);

INSERT INTO medicalequipment VALUES

('M00007','Antibiotics 1000mg','medicine','Stop infections',TO_DATE('2027/04/19',
'yyyy/mm/dd'),5.00,9);

INSERT INTO medicalequipment VALUES

('M00008','Anti diarrhea pills 300mg','medicine','Treating severe
diarrhea',TO_DATE('2025/09/30', 'yyyy/mm/dd'),2.00,66);

INSERT INTO medicalequipment VALUES

('M00009','Antibiotics 1500mg','medicine','Stop infections',TO_DATE('2028/04/19',
'yyyy/mm/dd'),7.00,4);

INSERT INTO medicalequipment VALUES

('M00010','Heart','organ_a','Donated by deceased patient, Encik Hassan',
TO_DATE('2021/09/30', 'yyyy/mm/dd'), 119000.00, 1);

INSERT INTO medicalequipment VALUES

('M00011','Intestine','organ_a','Donated by Katijah binti Johan',TO_DATE('2021/05/01',
'yyyy/mm/dd'), 2519.00, 1);

INSERT INTO medicalequipment VALUES

('M00012','Liver','organ_ab','Donated by Rabinder Govindasamy a/l
Marimuthu',TO_DATE('2021/07/19', 'yyyy/mm/dd'), 157000.00, 1);

INSERT INTO medicalequipment VALUES

('M00013','Lung','organ_ab','Donated by Lok Hew May',TO_DATE('2021/09/30',
'yyyy/mm/dd'), 100000.00, 1);

INSERT INTO medicalequipment VALUES

('M00014','Heart','organ_b','Bought from organ transplant centre',TO_DATE('2021/04/30',
'yyyy/mm/dd'), 119000.00, 1);

INSERT INTO medicalequipment VALUES

('M00015','Pancreas','organ_o','Donated by Rabinder Govindasamy a/l
Marimuthu',TO_DATE('2021/10/13', 'yyyy/mm/dd'), 500.00, 1);

INSERT INTO medicalequipment VALUES

('M00016','Pancreas','organ_b','Donated by Lee Sia Lok',TO_DATE('2021/03/31',
'yyyy/mm/dd'), 500.00, 1);

INSERT INTO medicalequipment VALUES

('M00017','Lung','organ_o','Donated by deceased patient,
Puteri bin Mara',TO_DATE('2021/06/30', 'yyyy/mm/dd'), 100000.00, 1);

INSERT INTO medicalequipment VALUES

('M00018','Kidney','organ_o','Donated by deceased patient, Swarna
Prakash',TO_DATE('2021/11/13', 'yyyy/mm/dd'), 200000.00, 1);

INSERT INTO medicalequipment VALUES

('M00019','Pancreas','organ_o','Bought from organ transplant centre',TO_DATE('2021/12/03',
'yyyy/mm/dd'), 500.00, 1);

INSERT INTO medicalequipment VALUES

('M00020','Blood','blood_bag_a','Obtained from blood donation centre',
TO_DATE('2021/05/03', 'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00021','Blood','blood_bag_ab','Bought from the market',TO_DATE('2021/06/30',
'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00022','Blood','blood_bag_ab','Obtained from blood donation
centre',TO_DATE('2021/07/05', 'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00023','Blood','blood_bag_a','Bought from the market',TO_DATE('2021/09/24',
'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00024','Blood','blood_bag_b','Bought from the market',TO_DATE('2021/11/27',
'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00025','Blood','blood_bag_b','Bought from the market',TO_DATE('2021/10/13',
'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00026','Blood','blood_bag_o','Obtained from blood donation
centre',TO_DATE('2021/06/01', 'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00027','Blood','blood_bag_o','Bought from the market',TO_DATE('2021/08/20',
'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00028','Blood','blood_bag_o','Bought from the market',TO_DATE('2022/01/15',
'yyyy/mm/dd'), 250.00, 1);

INSERT INTO medicalequipment VALUES

('M00029','COVID-19 Vaccine','vaccine_astra_zeneca','Get from the government',null, 0.00,
0);

INSERT INTO medicalequipment VALUES

('M00030','COVID-19 Vaccine','vaccine_sinovac','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00031','COVID-19 Vaccine','vaccine_astra_zeneca','Get from the government',null, 0.00,
0);

INSERT INTO medicalequipment VALUES

('M00032','COVID-19 Vaccine','vaccine_cansino_biologics','Get from the government',null,
0.00, 0);

INSERT INTO medicalequipment VALUES

('M00033','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null,
0.00, 0);

INSERT INTO medicalequipment VALUES

('M00034','COVID-19 Vaccine','vaccine_astra_zeneca','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00035','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00036','COVID-19 Vaccine','vaccine_sinovac','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00037','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00038','COVID-19 Vaccine','vaccine_sputnik_v','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00039','COVID-19 Vaccine','vaccine_cansino_biologics','Get from the government',null, 0.00, 0);

INSERT INTO medicalequipment VALUES

('M00040','COVID-19 Vaccine','vaccine_sputnik_v','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00041','COVID-19 Vaccine','vaccine_astra_zeneca','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00042','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00043','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00044','COVID-19 Vaccine','vaccine_astra_zeneca','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00045','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00046','COVID-19 Vaccine','vaccine_cansino_biologics','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00047','COVID-19 Vaccine','vaccine_sputnik_v','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00048','COVID-19 Vaccine','vaccine_cansino_biologics','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00049','COVID-19 Vaccine','vaccine_pfizer_biontech','Get from the government',null, 0.00, 1);

INSERT INTO medicalequipment VALUES

('M00050','Dexamethasone','medicine','Bought from the market',null, 2.00, 50);

--ServiceList

INSERT INTO ServiceList VALUES

('L00001','X-ray Chest','For lungs',70);

```
INSERT INTO ServiceList VALUES  
( 'L00002','X-ray body','For organ',100);
```

```
INSERT INTO ServiceList VALUES  
( 'L00003','CT scan','body 360 xray',251);
```

```
INSERT INTO ServiceList VALUES  
( 'L00004','Blood-Type Test','Check blood test',20);
```

```
INSERT INTO ServiceList VALUES  
( 'L00005','Health Check','Check health annually',200);
```

```
INSERT INTO ServiceList VALUES  
( 'L00006','Urine check','Check urine content',50);
```

```
INSERT INTO ServiceList VALUES  
( 'L00007','General Check-Up','A faster health checkup',80);
```

```
INSERT INTO ServiceList VALUES  
( 'L00008','Heart transplant','For patients with failing or weak hearts',3000);
```

```
INSERT INTO ServiceList VALUES  
( 'L00009','Neuroendoscopy','A type of brain surgery',7000);
```

```
INSERT INTO ServiceList VALUES  
( 'L00010','Normal consultation','Fewer, etc.',70);
```

```
INSERT INTO ServiceList VALUES  
( 'L00011','COVID-19 Vaccination','Receives vaccine.',0);
```

```
--Bed
```

```
INSERT INTO bed VALUES  
( 'B001', 'R001');
```

```
INSERT INTO bed VALUES  
( 'B002', 'R001');
```

```
INSERT INTO bed VALUES  
( 'B003', 'R002');
```

```
INSERT INTO bed VALUES  
( 'B004', 'R002');
```

```
INSERT INTO bed VALUES  
( 'B005', 'R002');
```

```
INSERT INTO bed VALUES  
( 'B006', 'R002');
```

```
INSERT INTO bed VALUES  
( 'B007', 'R008');
```

```
INSERT INTO bed VALUES  
( 'B008', 'R008');
```

```
INSERT INTO bed VALUES  
( 'B009', 'R008');
```

```
INSERT INTO bed VALUES  
( 'B010', 'R009');
```

```
INSERT INTO bed VALUES  
( 'B012', 'R010');
```

```
INSERT INTO bed VALUES  
('B013', 'R010');
```

```
INSERT INTO bed VALUES  
('B014', 'R011');
```

```
INSERT INTO bed VALUES  
('B015', 'R011');
```

```
INSERT INTO bed VALUES  
('B016', 'R011');
```

```
INSERT INTO bed VALUES  
('B017', 'R012');
```

```
INSERT INTO bed VALUES  
('B018', 'R013');
```

```
INSERT INTO bed VALUES  
('B019', 'R014');
```

```
INSERT INTO bed VALUES  
('B020', 'R015');
```

```
INSERT INTO bed VALUES  
('B021', 'R016');
```

```
INSERT INTO bed VALUES  
('B022', 'R020');
```

```
--Admission
```

INSERT INTO admission VALUES

('A00001', 'P00001', 'P00008', TO_TIMESTAMP ('10-Jan-20 14:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('26-MAR-21 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B001', 'R', 'Discharged');

INSERT INTO admission VALUES

('A00002', 'P00002', 'P00009', TO_TIMESTAMP ('12-Feb-20 11:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('17-Feb-20 11:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B002', 'R', 'Discharged');

INSERT INTO admission VALUES

('A00003', 'P00003', 'P00009', TO_TIMESTAMP ('22-Feb-20 16:11:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('28-Feb-20 16:11:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B003', 'R', 'Discharged');

INSERT INTO admission VALUES

('A00004', 'P00003', 'P00010', TO_TIMESTAMP ('21-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), NULL, 'B004', 'R', 'In coma');

INSERT INTO admission VALUES

('A00005', 'P00004', 'P00011', TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), NULL, 'B005', 'R', 'In coma');

INSERT INTO admission VALUES

('A00006', 'P00005', 'P00011', TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), NULL, 'B001', 'R', NULL);

INSERT INTO admission VALUES

('A00007', 'P00002', 'P00010', TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('22-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B002', 'R', 'Discharged');

INSERT INTO admission VALUES

('A00008', 'P00001', 'P00008', TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('22-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'R', 'Discharged');


```
INSERT INTO admission VALUES  
( 'A00009', 'P00001', 'P00008', SYSDATE,null,'B007','I',null);
```

```
INSERT INTO admission VALUES  
( 'A00010', 'P00002', 'P00008', SYSDATE,null,'B002','I',null);
```

```
INSERT INTO admission VALUES  
( 'A00011', 'P00027', 'P00008', TO_TIMESTAMP ('10-Jan-02 14:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('10-Jan-02 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B001','R','Discharged');
```

```
INSERT INTO admission VALUES  
( 'A00012', 'P00027', 'P00009', TO_TIMESTAMP ('12-Jan-02 11:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('25-Jan-02 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B002','R',null);
```

```
INSERT INTO admission VALUES  
( 'A00013', 'P00027', 'P00009', TO_TIMESTAMP ('13-Mar-02 16:11:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('22-Mar-02 03:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B003','D','Dead in sleeping');
```

```
INSERT INTO admission VALUES  
( 'A00014', 'P00028', 'P00010', TO_TIMESTAMP ('18-Jan-21 19:08:11.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('22-Jan-21 19:08:36.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B017','R','Contracted COVID-19');
```

```
INSERT INTO admission VALUES  
( 'A00015', 'P00029', 'P00008', TO_TIMESTAMP ('24-Feb-21 08:10:13.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('27-Feb-21 03:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B018','D','Dead after contracteed COVID-19');
```

```
INSERT INTO admission VALUES  
( 'A00016', 'P00030', 'P00009', TO_TIMESTAMP ('05-Mar-21 12:30:59.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('08-Mar-21 18:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B019','R','Contracted COVID-19');
```

INSERT INTO admission VALUES

('A00017', 'P00031', 'P00011', TO_TIMESTAMP ('07-Mar-21 09:58:40.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('13-Mar-21 03:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), 'B020', 'R', 'Contracted COVID-19');

INSERT INTO admission VALUES

('A00018', 'P00032', 'P00009', TO_TIMESTAMP ('15-Mar-21 14:01:41.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'B021', 'I', 'Contracted COVID-19');

INSERT INTO admission VALUES

('A00019', 'P00017', 'P00010', TO_TIMESTAMP ('27-Feb-21 08:55:55.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('16-Mar-21 09:05:35.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');

INSERT INTO admission VALUES

('A00020', 'P00032', 'P00009', TO_TIMESTAMP ('05-Mar-21 10:36:05.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('16-Mar-21 10:40:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');

INSERT INTO admission VALUES

('A00021', 'P00008', 'P00010', TO_TIMESTAMP ('18-Jan-21 15:57:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('18-Jan-21 16:05:43.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');

INSERT INTO admission VALUES

('A00022', 'P00010', 'P00009', TO_TIMESTAMP ('15-Mar-21 10:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('15-Mar-21 10:10:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');

INSERT INTO admission VALUES

('A00023', 'P00016', 'P00008', TO_TIMESTAMP ('15-Mar-21 11:30:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('15-Mar-21 11:40:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');

INSERT INTO admission VALUES

```
('A00024', 'P00025', 'P00009', TO_TIMESTAMP ('18-Mar-21 13:11:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('18-Mar-21 13:26:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');
```

INSERT INTO admission VALUES

```
('A00025', 'P00005', 'P00009', TO_TIMESTAMP ('15-Apr-21 10:00:00.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, null, 'O', 'Receives COVID-19 vaccine');
```

INSERT INTO admission VALUES

```
('A00026', 'P00028', 'P00009', TO_TIMESTAMP ('16-Apr-21 09:00:00.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, null, 'O', 'Receives COVID-19 vaccine');
```

INSERT INTO admission VALUES

```
('A00027', 'P00031', 'P00009', TO_TIMESTAMP ('16-Apr-21 09:15:00.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, null, 'O', 'Receives COVID-19 vaccine');
```

INSERT INTO admission VALUES

```
('A00028', 'P00009', 'P00010', TO_TIMESTAMP ('18-Apr-21 13:00:00.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, null, 'O', 'Receives COVID-19 vaccine');
```

INSERT INTO admission VALUES

```
('A00029', 'P00032', 'P00009', TO_TIMESTAMP ('30-Mar-21 09:50:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), TO_TIMESTAMP ('30-Mar-21 10:05:43.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'O', 'Receives COVID-19 vaccine');
```

INSERT INTO admission VALUES

```
('A00030', 'P00033', 'P00010', TO_TIMESTAMP ('04-Apr-21 11:15:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'), null, 'B022', 'O', 'Perform organ transplant surgeries');
```

--Bill

INSERT INTO bill VALUES

```
('I00001', 'A00001', 'General check-up, antibiotics', 'Credit Card', TO_DATE('2020/01/10', 'yyyy/mm/dd'), 300, TO_DATE('2020/03/14', 'yyyy/mm/dd'));
```

INSERT INTO bill VALUES

('I00002', 'A00001', 'Heart transplant', NULL, TO_DATE('2020/01/10', 'yyyy/mm/dd'), 3000, NULL);

INSERT INTO bill VALUES

('I00003', 'A00002', 'General ward 1 night with meals', 'Credit Card', TO_DATE('2020/03/19', 'yyyy/mm/dd'), 500, TO_TIMESTAMP ('19-Mar-20 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00004', 'A00003', 'Anti-diarrhea pills X2 boxes', NULL, TO_DATE('2020/03/13', 'yyyy/mm/dd'), 100, NULL);

INSERT INTO bill VALUES

('I00005', 'A00004', 'Neuroendoscopy', 'Debit Card', TO_DATE('2020/12/14', 'yyyy/mm/dd'), 5000, TO_TIMESTAMP ('16-Dec-20 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00006', 'A00004', 'General ward 3 nights with meals', 'Debit Card', TO_DATE('2021/12/14', 'yyyy/mm/dd'), 5000, TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00007', 'A00005', 'X-rays', 'Debit Card', TO_DATE('2021/12/01', 'yyyy/mm/dd'), 6000, TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00008', 'A00006', 'Heart transplant', 'Credit Card', TO_DATE('2021/06/14', 'yyyy/mm/dd'), 800, TO_TIMESTAMP ('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00009', 'A00007', 'Deliver Twins', NULL, TO_DATE('2021/03/23', 'yyyy/mm/dd'), 900, NULL);

INSERT INTO bill VALUES

('I00010', 'A00007', 'Life-support machine X 1 night', NULL, TO_DATE('2021/03/23', 'yyyy/mm/dd'), 3500, NULL);

INSERT INTO bill VALUES

('I00011', 'A00008', 'General check-up', NULL, TO_DATE('2021/12/23', 'yyyy/mm/dd'), 2600, NULL);

INSERT INTO bill VALUES

('I00012', 'A00008', 'Heart Transplant', NULL, TO_DATE('2021/03/24', 'yyyy/mm/dd'), 1700, NULL);

INSERT INTO bill VALUES

('I00013', 'A00014', 'Life-support machine X 3 night', NULL, TO_DATE('2021/03/01', 'yyyy/mm/dd'), 10500, NULL);

INSERT INTO bill VALUES

('I00014', 'A00014', 'General ward 2 night with meals', 'Credit Card', TO_DATE('2021/03/01', 'yyyy/mm/dd'), 1000, TO_TIMESTAMP ('26-Jan-21 19:05:00.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00015', 'A00015', 'Life-support machine X 2 night', 'Credit Card', TO_DATE('2021/04/01', 'yyyy/mm/dd'), 7000, TO_TIMESTAMP ('03-Mar-21 15:33:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'));

INSERT INTO bill VALUES

('I00016', 'A00015', 'Life-support machine X 2 night', NULL, TO_DATE('2021/04/01', 'yyyy/mm/dd'), 7000, NULL);

INSERT INTO bill VALUES

('I00017', 'A00016', 'Life-support machine X 1 night', NULL, TO_DATE('2021/05/01', 'yyyy/mm/dd'), 3500, NULL);

INSERT INTO bill VALUES

('I00018', 'A00016', 'General ward 3 night with meals', NULL, TO_DATE('2021/05/01', 'yyyy/mm/dd'), 1500, NULL);

INSERT INTO bill VALUES

```
('I00019', 'A00017', 'General ward 7 night with meals', NULL, TO_DATE('2021/05/01', 'yyyy/mm/dd'), 3500, NULL);
```

```
--ServiceRecord
```

```
INSERT INTO servicerecord VALUES
```

```
('S00001','A00001','P00025','P00015','R005','L00005','G00002','Normal  
consult',TO_TIMESTAMP ('21-Mar-21 14:10:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 15:10:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00002','A00002','P00026','P00016','R005','L00006','G00003','Normal  
consult',TO_TIMESTAMP ('21-Mar-21 14:10:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),null
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00003','A00003','P00024','P00013','R007','L00003','G00004','Normal  
result',TO_TIMESTAMP ('22-Mar-21 14:10:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),null
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00004','A00003','P00021','P00017','R006','L00004','G00005','O-',TO_TIMESTAMP ('21-  
Mar-21 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('22-Mar-21  
22:58:10.123000', 'DD-Mon-RR HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00005','A00002','P00026','P00016','R005','L00006','G00003','Normal  
consult',TO_TIMESTAMP ('21-Mar-21 15:10:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),null
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00006','A00004','P00023','P00018',null,'L00008','G00004','Consultation',TO_TIMESTAMP  
P ('21-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('21-  
Mar-21 18:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF')
```

```
);
```

INSERT INTO servicerecord VALUES

('S00007','A00004','P00026','P00018','R003','L00010','G00004','Success',TO_TIMESTAMP('21-Mar-21 18:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('21-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00008','A00004','P00025','P00013','R004','L00001','G00001','Success',TO_TIMESTAMP('21-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('21-Mar-21 20:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00009','A00004','P00024','P00014','R005','L00002','G00002','Success',TO_TIMESTAMP('21-Mar-21 20:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('21-Mar-21 21:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00010','A00004','P00023','P00015','R006','L00004','G00003','Success',TO_TIMESTAMP('21-Mar-21 21:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('21-Mar-21 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00011','A00004','P00022','P00016','R007','L00006','G00004','Success',TO_TIMESTAMP('21-Mar-21 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('21-Mar-21 23:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00012','A00005','P00021','P00017','R003','L00007','G00001','Success',TO_TIMESTAMP('22-Mar-21 17:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('22-Mar-21 18:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00013','A00005','P00022','P00018','R004','L00009','G00002','Success',TO_TIMESTAMP('22-Mar-21 18:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('22-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00014','A00005','P00023','P00019','R005','L00010','G00003','Success',TO_TIMESTAMP('22-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('22-Mar-21 23:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00015','A00006','P00024','P00018','R006','L00007','G00004','Success',TO_TIMESTAMP('22-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),null

);

INSERT INTO servicerecord VALUES

('S00016','A00007','P00025','P00018','R007','L00006','G00001','Success',TO_TIMESTAMP('22-Mar-21 19:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),null

);

INSERT INTO servicerecord VALUES

('S00017','A00008','P00026','P00017','R003','L00002','G00002','Success',TO_TIMESTAMP('22-Mar-21 20:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP('22-Mar-21 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00018','A00008','P00022','P00016','R004','L00001','G00003','Success',TO_TIMESTAMP('22-Mar-21 22:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),null

);

INSERT INTO servicerecord VALUES


```
('S00019','A00004','P00023','P00017','R006','L00004','G00005','O-', ' ',TO_TIMESTAMP ('21-Mar-21 23:11:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('22-Mar-21 22:58:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00020','A00009','P00023','P00016','R005','L00001','G00003','Success',SYSDATE,null
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00021','A00010','P00023','P00016','R005','L00001','G00003','Success',SYSDATE-3,SYSDATE-2
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00022','A00010','P00023','P00017','R005','L00001','G00003','Success',SYSDATE-2,SYSDATE-1
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00023','A00004','P00022','P00018','R006','L00004','G00005','O-', ' ',SYSDATE,null
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00024','A00001','P00022','P00015','R005','L00005','G00002','Normal consult',TO_TIMESTAMP ('20-Mar-21 14:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 15:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00025','A00001','P00022','P00015','R005','L00005','G00002','Normal consult',TO_TIMESTAMP ('21-Mar-21 15:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 16:10:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'))
```

```
);
```

INSERT INTO servicerecord VALUES

('S00026','A00001','P00022','P00015','R005','L00005','G00002','Normal
consult',TO_TIMESTAMP ('22-Mar-21 16:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 17:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00027','A00001','P00022','P00015','R005','L00005','G00002','Normal
consult',TO_TIMESTAMP ('23-Mar-21 17:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 18:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00028','A00001','P00022','P00015','R005','L00005','G00002','Normal
consult',TO_TIMESTAMP ('24-Mar-21 18:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 19:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00029','A00001','P00022','P00015','R005','L00005','G00002','Normal
consult',TO_TIMESTAMP ('25-Mar-21 19:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 20:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00030','A00014','P00023',null,null,'L00007','G00001','Patient has severe
symptoms',TO_TIMESTAMP ('18-Mar-21 13:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('18-Mar-21 13:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

```
('S00031','A00014','P00023',null,null,'L00007','G00001','Patient has severe
symptoms',TO_TIMESTAMP ('19-Mar-21 13:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('19-Mar-21 13:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00032','A00014','P00023',null,null,'L00007','G00001','Patient has severe
symptoms',TO_TIMESTAMP ('20-Mar-21 13:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('20-Mar-21 13:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00033','A00014',null,'P00018',null,'L00007','G00001','Patient has normal
symptoms',TO_TIMESTAMP ('21-Mar-21 13:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('21-Mar-21 13:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00034','A00014',null,'P00018',null,'L00007','G00001','Patient has normal
symptoms',TO_TIMESTAMP ('22-Mar-21 13:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('22-Mar-21 13:10:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00035','A00015','P00024',null,null,'L00007','G00001','Patient has severe
symptoms',TO_TIMESTAMP ('24-Mar-21 12:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('24-Mar-21 12:20:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00036','A00015','P00024',null,null,'L00007','G00001','Patient has severe
symptoms',TO_TIMESTAMP ('25-Mar-21 12:00:10.123000', 'DD-Mon-RR
```

```
HH24:MI:SS.FF'),TO_TIMESTAMP ('25-Mar-21 12:20:30.123000', 'DD-Mon-RR  
HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00037','A00015','P00024',null,null,'L00007','G00001','Patient has severe  
symptoms',TO_TIMESTAMP ('27-Mar-21 12:00:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),TO_TIMESTAMP ('27-Mar-21 12:20:30.123000', 'DD-Mon-RR  
HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00038','A00015','P00024',null,null,'L00007','G00001','Patient is dead',TO_TIMESTAMP  
( '22-Mar-21 12:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('22-Mar-  
21 15:33:30.123000', 'DD-Mon-RR HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00039','A00016','P00022',null,null,'L00007','G00001','Patient has severe  
symptoms',TO_TIMESTAMP ('05-Mar-21 11:00:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),TO_TIMESTAMP ('05-Mar-21 11:30:30.123000', 'DD-Mon-RR  
HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00040','A00016',null,'P00017',null,'L00007','G00001','Patient has normal  
symptoms',TO_TIMESTAMP ('06-Mar-21 11:00:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),TO_TIMESTAMP ('06-Mar-21 11:10:30.123000', 'DD-Mon-RR  
HH24:MI:SS.FF')
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00041','A00016',null,'P00017',null,'L00007','G00001','Patient has normal  
symptoms',TO_TIMESTAMP ('07-Mar-21 11:00:10.123000', 'DD-Mon-RR  
HH24:MI:SS.FF'),TO_TIMESTAMP ('07-Mar-21 11:10:30.123000', 'DD-Mon-RR  
HH24:MI:SS.FF')
```

```
);
```

INSERT INTO servicerecord VALUES

('S00042','A00016',null,'P00017',null,'L00007','G00001','Patient has normal symptoms',TO_TIMESTAMP ('08-Mar-21 11:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('08-Mar-21 11:10:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00043','A00017',null,'P00015',null,'L00007','G00001','Patient has normal symptoms',TO_TIMESTAMP ('07-Mar-21 12:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('07-Mar-21 12:10:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00044','A00017',null,'P00015',null,'L00007','G00001','Patient has normal symptoms',TO_TIMESTAMP ('08-Mar-21 12:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('08-Mar-21 12:10:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00045','A00017',null,'P00015',null,'L00007','G00001','Patient has normal symptoms',TO_TIMESTAMP ('09-Mar-21 12:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('09-Mar-21 12:10:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

('S00046','A00017',null,'P00015',null,'L00007','G00001','Patient has normal symptoms',TO_TIMESTAMP ('10-Mar-21 12:00:10.123000', 'DD-Mon-RR HH24:MI:SS.FF'),TO_TIMESTAMP ('10-Mar-21 12:10:30.123000', 'DD-Mon-RR HH24:MI:SS.FF'))

);

INSERT INTO servicerecord VALUES

```
('S00047','A00017',null,'P00015',null,'L00007','G00001','Patient has normal
symptoms',TO_TIMESTAMP ('11-Mar-21 12:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('11-Mar-21 12:10:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00048','A00017',null,'P00015',null,'L00007','G00001','Patient has normal
symptoms',TO_TIMESTAMP ('12-Mar-21 12:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('12-Mar-21 12:10:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00049','A00017',null,'P00015',null,'L00007','G00001','Patient has normal
symptoms',TO_TIMESTAMP ('13-Mar-21 12:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('13-Mar-21 12:10:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
INSERT INTO servicerecord VALUES
```

```
('S00050','A00018','P00024',null,null,'L00007','G00001','Patient has severe
symptoms',TO_TIMESTAMP ('15-Mar-21 10:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('15-Mar-21 10:10:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
-- P00017
```

```
INSERT INTO servicerecord VALUES
```

```
('S00051','A00019',null,'P00015','R019','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('27-Feb-21 08:55:55.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('16-Mar-21 09:05:35.123000', 'DD-Mon-RR
HH24:MI:SS.FF'))
```

```
);
```

```
-- P00004
```

```
INSERT INTO servicerecord VALUES
```

```
('S00052','A00020',null,'P00017','R018','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('05-Mar-21 10:36:05.123000', 'DD-Mon-RR
```

```

HH24:MI:SS.FF'),TO_TIMESTAMP ('16-Mar-21 10:40:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF')
);
-- P00008
INSERT INTO servicerecord VALUES
('S00053','A00021',null,'P00015','R019','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('18-Jan-21 15:57:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('18-Jan-21 16:05:43.123000', 'DD-Mon-RR
HH24:MI:SS.FF')
);
--P00010
INSERT INTO servicerecord VALUES
('S00054','A00022',null,'P00017','R019','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('15-Mar-21 10:00:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('15-Mar-21 10:10:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF')
);
--P00016
INSERT INTO servicerecord VALUES
('S00055','A00023',null,'P00017','R018','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('15-Mar-21 11:30:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('15-Mar-21 11:40:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF')
);
--P00025
INSERT INTO servicerecord VALUES
('S00056','A00024',null,'P00015','R018','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('18-Mar-21 13:11:10.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('15-Mar-21 13:26:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF')
);
-- P00001
INSERT INTO servicerecord VALUES
('S00057','A00025',null,'P00017','R019','L00011',null,'Receives COVID-19 vaccine',null,null
);
-- P00028

```

```

INSERT INTO servicerecord VALUES
('S00058','A00026',null,'P00015','R018','L00011',null,'Receives COVID-19 vaccine',null,null
);
-- P00031
INSERT INTO servicerecord VALUES
('S00059','A00027',null,'P00015','R018','L00011',null,'Receives COVID-19 vaccine',null,null
);
-- P00009
INSERT INTO servicerecord VALUES
('S00060','A00028',null,'P00017','R019','L00011',null,'Receives COVID-19 vaccine',null,null
);
-- P00004
INSERT INTO servicerecord VALUES
('S00061','A00029',null,'P00017','R019','L00011',null,'Receives COVID-19
vaccine',TO_TIMESTAMP ('30-Mar-21 09:50:30.123000', 'DD-Mon-RR
HH24:MI:SS.FF'),TO_TIMESTAMP ('30-Mar-21 10:05:43.123000', 'DD-Mon-RR
HH24:MI:SS.FF')
);

--Prescription
INSERT INTO PRESCRIPTION VALUES(
'S00003','M00001','20','1.50'
);

INSERT INTO PRESCRIPTION VALUES(
'S00006','M00001','20','1.50'
);

INSERT INTO PRESCRIPTION VALUES(
'S00006','M00006','5','3.50'
);

INSERT INTO PRESCRIPTION VALUES(

```


'S00006','M00007','8','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00005','M00008','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00005','M00002','10','1.50'

);

INSERT INTO PRESCRIPTION VALUES(

'S00005','M00007','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00006','M00008','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00006','M00009','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00006','M00003','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00007','M00009','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00008','M00005','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00008','M00003','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00009','M00002','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00005','M00001','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00009','M00006','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00009','M00003','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00010','M00005','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

'S00011','M00007','10','5'

);

INSERT INTO PRESCRIPTION VALUES(

```
'S00011','M00009','10','5'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00014','M00003','10','5'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00018','M00004','10','5'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00030','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00031','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00032','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00035','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00036','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00037','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00039','M00050','3','2'
```

```
);
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00050','M00050','3','2'
```

```
);
```

```
-- One dose finish vaccination
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00051','M00032','1','0'
```

```
);
```

```
-- Two dose finish vaccination(1)
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00052','M00033','1','0'
```

```
);
```

```
-- One dose finish vaccination
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00053','M00039','1','0'
```

```
);
```

```
-- First dose finish vaccination
```

```
INSERT INTO PRESCRIPTION VALUES(
```

```
'S00054','M00029','1','0'
```

```
);
```

```
-- First dose finish vaccination
```

```
INSERT INTO PRESCRIPTION VALUES(  
'S00055','M00030','1','0'  
);
```

-- First dose finsih vaccination

```
INSERT INTO PRESCRIPTION VALUES(  
'S00056','M00031','1','0'  
);
```

-- Schedule to be vaccinated

```
INSERT INTO PRESCRIPTION VALUES(  
'S00057','M00034','1','0'  
);
```

-- Schedule to be vaccinated

```
INSERT INTO PRESCRIPTION VALUES(  
'S00058','M00036','1','0'  
);
```

-- Schedule to be vaccinated

```
INSERT INTO PRESCRIPTION VALUES(  
'S00059','M00037','1','0'  
);
```

-- Schedule to be vaccinated

```
INSERT INTO PRESCRIPTION VALUES(  
'S00060','M00038','1','0'  
);
```

-- Two dose finsih vaccination(2)

```
INSERT INTO PRESCRIPTION VALUES(  
'S00061','M00035','1','0'
```

);

-- Creating Roles

CREATE ROLE admin;
CREATE ROLE doctor;
CREATE ROLE nurse;

-- System Priviledges

GRANT create table, create view, create session TO admin WITH ADMIN OPTION;
GRANT create view TO doctor, nurse;

--Object Priviledges

GRANT SELECT, INSERT, UPDATE, DELETE ON person TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON doctor TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON nurse TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON employee TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON patient TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON admission TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON servicerecord TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON servicelist TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON medicalequipment TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON prescription TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON bed TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON room TO admin;
GRANT SELECT, INSERT, UPDATE, DELETE ON disease TO admin;

GRANT SELECT, INSERT, UPDATE, DELETE ON department TO admin;

GRANT SELECT, INSERT, UPDATE, DELETE ON bill TO admin;

GRANT SELECT ON person TO doctor, nurse;

GRANT SELECT ON employee TO doctor, nurse;

GRANT SELECT ON nurse TO doctor, nurse;

GRANT SELECT ON doctor TO doctor, nurse;

GRANT SELECT ON servicerecord TO doctor, nurse;

GRANT SELECT ON servicelist TO doctor, nurse;

GRANT SELECT ON medicalequipment TO doctor, nurse;

GRANT SELECT ON prescription TO doctor, nurse;

GRANT SELECT ON patient TO doctor, nurse;

GRANT SELECT ON disease TO doctor, nurse;

GRANT UNLIMITED TABLESPACE TO admin, nurse, doctor;

--Create Users

CREATE USER yapjhengkhin IDENTIFIED BY abc123;

CREATE USER jacynththam IDENTIFIED BY abc1234;

CREATE USER tanjingjie IDENTIFIED BY abc12345;

CREATE USER tanweimun IDENTIFIED BY abc123456;

CREATE USER dodefarre IDENTIFIED BY abcd;

CREATE USER janesilverstone IDENTIFIED BY hfyr;

CREATE USER loriannebrak IDENTIFIED BY iwhf;

CREATE USER nolliepynn IDENTIFIED BY abcee;

CREATE USER kayfedoronko IDENTIFIED BY abc1233d;

CREATE USER erwin IDENTIFIED BY abdjeo;

GRANT admin to yapjhengkhin;

GRANT admin to jacynththam;

GRANT admin to tanjingjie;

GRANT admin to tanweimun;

GRANT admin to dodefarre;

GRANT admin to janesilverstone;

GRANT admin to loriannebrak;

GRANT nurse to nolliepynn;

GRANT nurse to kayfedoronko;

GRANT doctor to erwin;

-- COMMIT

COMMIT;

-- Thank you. Created 27/3/2021
