SQL QUERIES

For Navigation:

Table Creation

```
CREATE SEQUENCE uid
AS INTEGER
MINVALUE 1000000;

CREATE TABLE Person (
user_id INTEGER PRIMARY KEY DEFAULT NEXTVAL('uid'),
first_name VARCHAR(25) NOT NULL,
middle_name VARCHAR(25),
last_name VARCHAR(25) NOT NULL,
house_number INTEGER NOT NULL,
street VARCHAR(25) NOT NULL,
city VARCHAR(25) NOT NULL,
province VARCHAR(15) NOT NULL,
password VARCHAR(16) NOT NULL,
CHECK (length(password)>7),
ssn INTEGER NOT NULL,
CHECK (ssn > 99999999 AND ssn < 1000000000),
gender VARCHAR(25) NOT NULL,
email VARCHAR(40),
date_of_birth DATE NOT NULL
);

ALTER SEQUENCE uid OWNED BY Person.user_id;

CREATE TABLE Patient (
insurance BOOL NOT NULL,
PRIMARY KEY (user_id)
) INHERITS (Person);
```

```sql
CREATE TYPE emp_role AS ENUM ('Manager', 'Dentist', 'Receptionist', 'Hygienist');

CREATE TABLE Employee (
role emp_role NOT NULL,
employee_type VARCHAR(25) NOT NULL,
salary DECIMAL(10,2) NOT NULL,
mgr_id INTEGER REFERENCES Employee(user_id),
PRIMARY KEY (user_id)
) INHERITS (Person);

CREATE TABLE Branch (
branch_id SERIAL PRIMARY KEY,
address_number INTEGER NOT NULL,
street VARCHAR(25) NOT NULL,
city VARCHAR(25) NOT NULL,
province VARCHAR(15) NOT NULL,
phone_num VARCHAR(20) NOT NULL
);

ALTER TABLE Employee
ADD COLUMN branch_id SERIAL REFERENCES Branch(branch_id);

CREATE TABLE Emp_Phone_number (
user_id INTEGER REFERENCES Employee(user_id),
phone_num VARCHAR(20),
PRIMARY KEY (user_id, phone_num)
);

CREATE TABLE Record (
record_id SERIAL PRIMARY KEY,
user_id INTEGER REFERENCES Patient(user_id),
notes VARCHAR(255)
);

CREATE TABLE Review (
user_id INTEGER REFERENCES Patient(user_id),
review_no SERIAL,
professionalism VARCHAR(255),
communication VARCHAR(255),
cleanliness VARCHAR(255),
PRIMARY KEY (user_id, review_no)
);
```

```sql
CREATE TABLE Updates (
user_id INTEGER REFERENCES Employee(user_id),
record_id SERIAL REFERENCES Record(record_id),
PRIMARY KEY (user_id, record_id)
);

CREATE TABLE Appointment (
appt_id SERIAL PRIMARY KEY,
user_id INTEGER REFERENCES Patient(user_id),
record_id SERIAL REFERENCES Record(record_id),
date DATE NOT NULL,
start_time TIME NOT NULL,
end_time TIME NOT NULL,
type VARCHAR(50) NOT NULL,
status VARCHAR(25) DEFAULT 'upcoming',
room_num INTEGER
);

CREATE TABLE Attends (
user_id INTEGER REFERENCES Employee(user_id),
appt_id SERIAL REFERENCES Appointment(appt_id),
PRIMARY KEY(user_id, appt_id)
);

CREATE TABLE Patient_payment (
bill_id SERIAL PRIMARY KEY,
user_id INTEGER REFERENCES Patient(user_id),
patient_amount DECIMAL(10,2) NOT NULL
);

CREATE TYPE p_type AS ENUM ('Cash', 'Debit', 'Amex', 'Visa', 'Mastercard');

CREATE TABLE Payment_type (
bill_id SERIAL REFERENCES Patient_payment(bill_id),
pay_type p_type,
PRIMARY KEY (bill_id, pay_type)
);
```

```sql
CREATE TABLE Insurance_claim (
claim_id INTEGER PRIMARY KEY,
company_name VARCHAR(25) NOT NULL,
insurance_amount DECIMAL(10,2) NOT NULL
);

ALTER TABLE Patient_payment
ADD COLUMN claim_id INTEGER REFERENCES Insurance_Claim(claim_id);

CREATE TABLE Invoice (
invoice_no SERIAL PRIMARY KEY,
user_id INTEGER REFERENCES Patient(user_id),
date_of_issue DATE NOT NULL,
contact_info VARCHAR(255) NOT NULL,
patient_charge DECIMAL(10,2) NOT NULL,
insurance_charge DECIMAL(10,2) NOT NULL,
discount DECIMAL(10,2) NOT NULL,
penalty DECIMAL(10,2) NOT NULL
);

ALTER TABLE Patient_payment
ADD COLUMN invoice_no INTEGER REFERENCES Invoice(invoice_no);

CREATE TYPE proced_type AS ENUM( 'Consultation/Check-up', 'Teeth-cleaning', 'Pre-sedation
assessment', 'Crowns', 'Extraction', 'Fluoride', 'Wisdom teeth removal');

CREATE TABLE Appointment_procedure (
appt_id SERIAL REFERENCES Appointment(appt_id) NOT NULL,
procedure_id INTEGER PRIMARY KEY,
invoice_no SERIAL REFERENCES Invoice(invoice_no),
procedure_code INTEGER NOT NULL,
procedure_type proced_type NOT NULL,
description VARCHAR(255),
tooth VARCHAR(20),
procedure_amount VARCHAR(20)
);
```

```
CREATE TABLE Fee_charge (
fee_id SERIAL PRIMARY KEY,
procedure_id INTEGER REFERENCES Appointment_procedure(procedure_id),
invoice_no SERIAL REFERENCES Invoice(invoice_no),
fee_code VARCHAR(10) NOT NULL,
charge DECIMAL(10,2) NOT NULL
);

CREATE TABLE Treatment (
procedure_id INTEGER REFERENCES Appointment_procedure(procedure_id),
treatment_type VARCHAR(255),
medication VARCHAR(255),
symptoms VARCHAR(255),
comments VARCHAR(255),
PRIMARY KEY (procedure_id)
);
```

Inserting Table Values

```
INSERT INTO Person(user_id, first_name, middle_name, last_name, house_number, street, city, province,
password, ssn, gender, email, date_of_birth) VALUES
(DEFAULT, 'Mari', 'Nel', 'Antoine', 13, 'Booth Street' , 'Ottawa', 'Ontario', 'firewall521', 123456789,
'female', 'mn.antoine@gmail.com', '1994-03-12');

INSERT INTO Patient(user_id, first_name, middle_name, last_name, house_number, street, city,
province, password, ssn, gender, email, date_of_birth, insurance) VALUES
(DEFAULT, 'John', null, 'Smith', 20, 'Ahearn Avenue' , 'Ottawa', 'Ontario', 'password123', 100200300,
'male', 'john.smith@outlook.com', '2000-02-18', false),
(DEFAULT, 'Abraham', 'Theodore', 'Doe', 147, 'Bronson Avenue' , 'Ottawa', 'Ontario', 'student3242',
987654321, 'male', 'abrdoe@live.com', '1997-07-31', false),
(DEFAULT, 'Anisa', null, 'Taylor', 552, 'Symington Boulevard', 'Windsor', 'Ontario', 'rememberdl6',
445123456, 'female', 'ani.taylor@gmail.com', '1978-09-24', true),
(DEFAULT, 'Connor', 'Hank', 'Anderson', 4135, 'Pellington Street', 'Toronto', 'Ontario', 'whatsthepassword',
313248317, 'male', 'rk800-51@outlook.com', '2005-05-08', true);

INSERT INTO Branch(branch_id, address_number, street, city, province, phone_num) VALUES
(DEFAULT, 930, 'Laurier Avenue', 'Ottawa', 'Ontario','16135422420'),
(DEFAULT, 2485, 'King Street East', 'Ottawa', 'Ontario', '16132219481'),
(DEFAULT, 53, 'Weston Road', 'Toronto', 'Ontario', '14167818881'),
(DEFAULT, 125, 'Freret Street', 'Windsor', 'Ontario', '15192533000');
```

INSERT INTO Employee(user_id, first_name, middle_name, last_name, house_number, street, city, province, password, ssn, gender, email, date_of_birth, role, employee_type, salary, mgr_id, branch_id) VALUES
(1000002, 'Abraham', 'Theodore', 'Doe', 147, 'Bronson Avenue' , 'Ottawa', 'Ontario', 'student3242', 987654321, 'male', 'abrdoe@live.com', '1997-07-31','Manager', 'full-time', 40000.00, null, 2),
(DEFAULT, 'Adleth', null , 'Arieas', 829, 'Laurier Avenue', 'Ottawa', 'Ontario', 'owlbert152',557747892, 'female', 'ravenqueen@outlook.com', '2004-02-06', 'Manager', 'full-time', 40000.00, null, 1),
(DEFAULT, 'Kalia', 'Rota' , 'Triton', 31, 'Sunset Avenue', 'Windsor', 'Ontario', 'stormandsea', 154614512, 'female', 'kalia.triton@gmail.com', '1993-12-31', 'Manager', 'full-time', 40000.00, null, 4),
(DEFAULT, 'Thomas', null , 'Nevari', 1290, 'Dufferin Street', 'Toronto', 'Ontario', 'marianne2102', 784184243, 'male', 'tnevari@gmail.com', '1990-05-22', 'Manager', 'full-time', 40000.00, null, 3),
(DEFAULT, 'Sarah', 'Jane', 'Esquivel', 343, 'Yonge Street', 'Toronto', 'Ontario', 'nellyno241', 314159265, 'female', 'sjesquivel@live.com', '1999-08-16', 'Receptionist', 'full-time', 25000.00, 1000007, 3),
(DEFAULT, 'Nelly', null, 'Esquivel', 343, 'Yonge Street', 'Toronto', 'Ontario', 'nellyyes241', 313456241, 'male', 'nesquivel@live.com', '1996-04-15', 'Dentist', 'full-time', 40000.00, 1000007, 3),
(DEFAULT, 'Thomas', 'Patterson' , 'Andrews', 23, 'Treeside Avenue', 'Windsor', 'Ontario', 'salvation12', 315622414, 'male', 'tompat@outlook.com', '1996-04-15', 'Dentist', 'full-time', 40000.00, 1000006, 4),
(DEFAULT, 'Joe', 'Roe' , 'Doe', 2225, 'Rideau Street', 'Ottawa', 'Ontario', 'trytryagain', 315622414, 'male', 'jorudo@gmail.com', '1992-01-01', 'Dentist', 'part-time', 40000.00, 1000002, 2);

INSERT INTO Emp_Phone_number(user_id, phone_num) VALUES
(1000008, '16478052046'),
(1000009, '16478052046'),
(1000010, '15192036652'),
(1000010, '16131597532'),
(1000011, '16138032020');

INSERT INTO Record(record_id, user_id, notes) VALUES
(DEFAULT, 1000001, 'initial consultation. patient had pocket reduction surgery with a different, unaffiliated dental clinic Ottawa Dentals about 2 years ago; make sure to contact them for more info on patient's dental history.'),
(DEFAULT, 1000002, 'teeth cleaning; patient recommended to floss more to ensure that all plaque and bacteria are removed from teeth'),
(DEFAULT, 1000003, 'missed appointment.'),
(DEFAULT, 1000003, 'to correct underbite, braces were placed onto teeth; patient was given list of suggested foods and foods to avoid; next appointment in 4 weeks.'),
(DEFAULT, 1000004, null);

INSERT INTO Review(user_id, review_no, professionalism, communication, cleanliness) VALUES
(1000001, DEFAULT, 'all procedures were followed', 'dentist ensured I knew what to expect before moving onto any procedure, and explained ways to take better care of my teeth', 'very organized, all equipment disinfected before and after use'),
(1000003, DEFAULT, null, 'It would be nice if patients were notified about upcoming appointments, as a reminder. I'd rather not pay the no-show fee, and I'm sure the dentists and hygenists would appreciate not having to dismantle any equipment without having used them.', null),
(1000003, DEFAULT, 'The staff maintained a level of professionalism that made me feel assured that my teeth would be treated with utmost care.', 'Thank you for listening to my feedback from before!', null);

INSERT INTO Updates(user_id, record_id) VALUES
(1000011, 1),
(1000009, 2),
(1000010, 3),
(1000010, 4),
(1000011, 5);

INSERT INTO Appointment(appt_id, user_id, record_id, date, start_time, end_time, type, status, room_num) VALUES
(DEFAULT, 1000001, 1, '2022-04-08', '01:00 PM', '01:30 PM', 'New Patient Consultation', 'complete', 2),
(DEFAULT, 1000002, 2, '2022-04-09', '11:00 AM', '12:00 PM', 'Teeth Cleaning', 'complete', 3),
(DEFAULT, 1000003, 3, '2022-04-10', '10:00 AM', '11:00 AM', 'Treatment', 'missed/cancelled', 1),
(DEFAULT, 1000003, 4, '2022-04-15', '10:00 AM', '11:00 AM', 'Treatment', 'complete', 1),
(DEFAULT, 1000004, 5, '2022-05-20', '02:00 PM', '03:00 PM', 'Surgery', 'upcoming', 4);

INSERT INTO Attends(user_id, appt_id) VALUES
(1000011, 1),
(1000009, 2),
(1000008, 2),
(1000010, 3),
(1000010, 4),
(1000011, 5);

INSERT INTO Insurance_claim(claim_id, company_name, insurance_amount) VALUES
(1, 'ManuLife', 0.00),
(2, 'ManuLife', 1200.00);

```sql
INSERT INTO Invoice(invoice_no, user_id, date_of_issue, contact_info, patient_charge, insurance_charge,
discount, penalty) VALUES
(DEFAULT, 1000001, '2022-04-08', 'phone: +1 (613)159-7532', 20.00, 0.00, 0.00, 0.00),
(DEFAULT, 1000002, '2022-04-09', 'email: abrdoe@live.com', 450.00, 0.00, 100.00, 0.00),
(DEFAULT, 1000003, '2022-04-10', '+1 (519) 775-4900', 0.00, 0.00, 0.00, 14.00),
(DEFAULT, 1000003, '2022-04-15', '+1 (519) 775-4900', 300.00, 1200.00, 0.00, 0.00);

INSERT INTO Patient_payment(bill_id, invoice_no, user_id, patient_amount, claim_id) VALUES
(DEFAULT, 1, 1000001, 20.00, null),
(DEFAULT, 2, 1000002, 350.00, null),
(DEFAULT, 3, 1000003, 14.00, 1),
(DEFAULT, 4, 1000003, 300.00, 2);

INSERT INTO Payment_type(bill_id, pay_type) VALUES
(1, 'Cash'),
(2, 'Visa'),
(2, 'Cash'),
(3, 'Mastercard'),
(4, 'Debit');

INSERT INTO Appointment_procedure(appt_id, procedure_id, invoice_no, procedure_code,
procedure_type, description, tooth, procedure_amount) VALUES
(1, 1, 1, 10100,  'Consultation/Check-up',  null, null, null),
(2, 2, 2, 10200,   'Teeth-cleaning', null,  'all ',  null),
(4, 3, 4, 31929,  'Pre-sedation assessment',  'patient was asked to fill out pre-sedation assessment form
to determine suitability for sedation', null, null),
(4, 4, 4, 31930,  'Crowns',  'patient requires teeth strengthening ',  'canines',  '2 fluoride');

INSERT INTO Fee_charge(fee_id, procedure_id, invoice_no, fee_code, charge) VALUES
(DEFAULT, 1, 1, 13922, 20.00),
(DEFAULT, 2, 2, 29105, 450.00),
(DEFAULT, null, 3, 94303, 14.00),
(DEFAULT, 3, 4, 29078, 100.00),
(DEFAULT, 4, 4, 49278, 1400.00);

INSERT INTO Treatment(procedure_id, treatment_type, medication, symptoms, comments) VALUES
(4,  'porcelain crown cementing',  'anesthesia and nitrous oxide',  'mild to moderate pain after surgery',
null);
```

<u>Queries</u>

1) Show the list of dentists in each branch.

SELECT *
FROM Employee
WHERE role = 'Dentist'
GROUP BY branch_id, user_id;

2) Add new patients.

(see Patient insertion queries in previous section)

3) Show all upcoming appointments for a specific dentist.

SELECT appt_id, date, start_time, end_time
FROM Appointment
WHERE status = 'upcoming ' AND appt_id IN
        (SELECT appt_id
        FROM Employee NATURAL JOIN Attends
        Where user_id = 1000011)

This checks upcoming appointments for user 1000011 (Joe Doe).

4) Set up a new appointment.

(see Appointment insertion queries in previous section)

5) Add a new employee.

(see Employee insertion queries in previous section)

6) Show the types of the procedures available.

SELECT unnest(enum_range(NULL::proced_type));

This shows all possible values for enum proced_type.