-- types  
create type payment\_method\_type as enum ('Cash', 'Credit', 'Cheque', 'Standing Order');  
create type boolean\_type as enum ('Yes', 'No');  
create type sex\_type as enum ('M','F');  
create type position\_type as enum ('Manager','Supervisor', 'Deputy', 'Assistant', 'Secretary');  
  
  
create table Branch  
(  
 BranchNo varchar(3) not null  
 check (BranchNo ~ '^B[1-9][0-9]{0,1}$'),  
 Street varchar(25) not null,  
 Area varchar(15) null,  
 City varchar(15) not null,  
 Postcode varchar(8) null,  
 TelephoneNo varchar(13) null,  
 FaxNo varchar(13) null,  
 ManagerStaffNo varchar(5) null,  
 ManagerStartDate date null,  
 BonusPayment numeric null,  
 CarAllowance numeric null,  
  
 primary key (BranchNo),  
  
 unique (TelephoneNo),  
 unique (FaxNo)  
);  
  
create table Staff  
(  
 StaffNo varchar(5) not null  
 check (StaffNo ~ '^S[A-Z][1-9][0-9]{0,2}$'),  
 FirstName varchar(20) not null,  
 LastName varchar(20) not null,  
 Address varchar(50) not null,  
 TelephoneNo varchar(13) null,  
 Sex sex\_type not null,  
 DateOfBirth date null,  
 Position position\_type not null,  
 Salary numeric not null,  
 DateJoined date null,  
 NationalInsuranceNo varchar(10) not null,  
 TypingSpeed integer null  
 check (Position <> 'Secretary' or (TypingSpeed is not null and TypingSpeed > 0)),  
 BranchNo varchar(3) not null,  
  
 primary key (StaffNo),  
  
 unique (NationalInsuranceNo),  
  
 foreign key (BranchNo) references Branch (BranchNo)  
 on delete no action  
);  
  
create table NextOfKin  
(  
 StaffNo varchar(5) not null,  
 NextOfKinName varchar(30) not null,  
 Relationship varchar(20) null,  
 Address varchar(50) null,  
 TelephoneNo varchar(13) null,  
  
 primary key (StaffNo, NextOfKinName),  
  
 foreign key (StaffNo) references Staff (StaffNo)  
 on delete CASCADE  
);  
  
-- A supervisor may supervise a minimum of five and a maximum of ten members of staff, at any one time.  
-- A secretary may support one or more workgroups at the same branch (not in text)  
-- A supervisee may be in only one workgroup at a time.  
create table AllocatedStaff  
(  
 SuperviseeStaffNo varchar(5) not null,  
 SupervisorStaffNo varchar(5) not null,  
 SecretaryStaffNo varchar(5) not null,  
 primary key (SuperviseeStaffNo),  
  
 foreign key (SuperviseeStaffNo) references Staff (StaffNo)  
 on delete CASCADE  
 on update CASCADE,  
 foreign key (SupervisorStaffNo) references Staff (StaffNo)  
 on delete set null  
 on update CASCADE,  
 foreign key (SecretaryStaffNo) references Staff (StaffNo)  
 on delete set null  
 on update CASCADE  
);  
  
-- A member of staff may supervise a maximum of ten properties for rent at any one time.  
-- The monthly rent for a property should be reviewed annually  
-- Property records are kept for at least three years after being withdrawn from rental and may then be deleted  
CREATE TABLE PropertyForRent  
(  
 PropertyNo VARCHAR(5) NOT NULL CHECK (PropertyNo ~ '^P[A-Z][1-9][0-9]{0,2}$'),  
 Street VARCHAR(25) NOT NULL,  
 Area VARCHAR(15) NULL,  
 City VARCHAR(15) NOT NULL,  
 Postcode VARCHAR(8) NULL,  
 Type CHAR(1) NOT NULL DEFAULT 'F' CHECK (Type IN ('B', 'C', 'D', 'E', 'F', 'M', 'S', 'H')),  
 Rooms INTEGER CHECK (Rooms BETWEEN 1 AND 15) DEFAULT 4,  
 Rent NUMERIC DEFAULT 600,  
 PrivateOwnerNo VARCHAR(5) NULL,  
 BusinessOwnerNo VARCHAR(5) NULL,  
 StaffNo VARCHAR(5) NULL,  
 BranchNo VARCHAR(3) NOT NULL,  
 Picture BYTEA NULL,  
 Comments VARCHAR(255) NULL,  
 Withdrawn DATE NULL,  
 DeleteRecord BOOLEAN NULL,  
  
 PRIMARY KEY (PropertyNo),  
  
 FOREIGN KEY (StaffNo) REFERENCES Staff (StaffNo)  
 ON DELETE SET NULL  
 ON UPDATE CASCADE,  
  
 FOREIGN KEY (BranchNo) REFERENCES Branch (BranchNo)  
 ON DELETE SET DEFAULT  
 ON UPDATE CASCADE  
);  
  
CREATE TABLE PrivateOwner  
(  
 PrivateOwnerNo VARCHAR(5) NOT NULL CHECK (PrivateOwnerNo ~ '^CO[1-9][0-9]{0,2}$'),  
 FirstName VARCHAR(20) NOT NULL,  
 LastName VARCHAR(20) NOT NULL,  
 Address VARCHAR(50) NOT NULL,  
 TelephoneNo VARCHAR(13),  
  
 PRIMARY KEY (PrivateOwnerNo)  
);  
  
CREATE TABLE BusinessOwner  
(  
 BusinessOwnerNo VARCHAR(5) NOT NULL CHECK (BusinessOwnerNo ~ '^CB[1-9][0-9]{0,2}$'),  
 BusinessName VARCHAR(30) NOT NULL,  
 BusinessType VARCHAR(20) NOT NULL,  
 Address VARCHAR(50) NOT NULL,  
 TelephoneNo VARCHAR(13) UNIQUE,  
 ContactName VARCHAR(30),  
  
 PRIMARY KEY (BusinessOwnerNo)  
);  
  
-- The length of a lease is from 3 to 12 months  
-- The deposit amount is twice the monthly rent  
create table LeaseAgreement  
(  
 LeaseNo varchar(8) not null  
 check (LeaseNo ~ '^L[1-9][0-9]{0,4}$'),  
 RenterNo varchar(8) not null,  
 PropertyNo varchar(5) not null  
 references PropertyForRent (PropertyNo),  
 PaymentMethod payment\_method\_type not null,  
 Rent numeric not null,  
 DepositAmount numeric not null,  
 DepositPaid boolean\_type not null,  
 RentStart date not null,  
 RentFinish date not null,  
  
 primary key (LeaseNo),  
  
 unique (PropertyNo),  
 unique (RentStart),  
  
 foreign key (PropertyNo) references PropertyForRent (PropertyNo)  
 on delete no action  
 on update CASCADE  
);  
  
create table Renter  
(  
 RenterNo varchar(5) not null  
 check (RenterNo ~ '^CR[1-9][0-9]{0,2}$'),  
 FirstName varchar(20) not null,  
 LastName varchar(20) not null,  
 Address varchar(50) not null,  
 TelephoneNo varchar(13) null,  
 PreferredType property\_type null,  
 MaximumRent numeric null,  
 BranchNo varchar(5) NOT NULL,  
  
 primary key (RenterNo),  
  
 foreign key (BranchNo) references Branch (BranchNo)  
 on delete no action  
 on update CASCADE  
);  
  
create table Viewing  
(  
 PropertyNo varchar(5) not null,  
 RenterNo varchar(5) not null,  
 DateViewed date not null,  
 Comments varchar(50) null,  
  
 primary key (PropertyNo, RenterNo, DateViewed),  
  
 foreign key (PropertyNo) references PropertyForRent (PropertyNo)  
 on delete CASCADE  
 on update CASCADE,  
 foreign key (RenterNo) references Renter (RenterNo)  
 on delete CASCADE  
 on update CASCADE  
);  
  
-- Properties should be inspected at least once over a six-month period.  
create table Inspection  
(  
 PropertyNo varchar(5) not null,  
 StaffNo varchar(5) not null,  
 DateInspected date not null,  
 Comments varchar(255) null,  
  
 primary key (PropertyNo, StaffNo),  
  
 foreign key (PropertyNo) references PropertyForRent (PropertyNo)  
 on delete CASCADE  
 on update CASCADE,  
 foreign key (StaffNo) references Staff (StaffNo)  
 on delete set null  
 on update CASCADE  
);  
  
--the reason for the alterations are so that they could be referred before the table made  
alter table Branch  
 add foreign key (ManagerStaffNo) references Staff (StaffNo)  
 on delete set null  
 on update CASCADE;  
  
alter table LeaseAgreement  
 add foreign key (RenterNo) references Renter (RenterNo)  
 on delete no action  
 on update CASCADE;  
  
alter table PropertyForRent  
 add FOREIGN KEY (PrivateOwnerNo) REFERENCES PrivateOwner (PrivateOwnerNo)  
 ON DELETE NO ACTION  
 ON UPDATE CASCADE,  
  
 add FOREIGN KEY (BusinessOwnerNo) REFERENCES BusinessOwner (BusinessOwnerNo)  
 ON DELETE NO ACTION  
 ON UPDATE cascade;  
  
insert into branch (branchno, street, area, city, postcode, telephoneno, faxno)  
values ('B5', '22 deer rd', 'Sidcup', 'London', 'SW1 4EH', '0171-886-1212', '0171-886-1214'),  
 ('B7', '16 Argilly St', 'Dyce', 'Aberdeen', 'AB2 3Su', '01224-67125', '01224-67111'),  
 ('B3', '163 Main St', 'Partick', 'Glasgow', 'G11 9Qx', '0141-339-2178', '0141-339-4439'),  
 ('B4', '32 Mains RD', 'leight', 'Bristol', 'BS99 1NZ', '0117-916-1170', '0117-776-1114'),  
 ('B2', '56Clover Dr', 'null', 'London', 'NW10 6EU', '0181-963-1030', '0181-453-7992');  
  
insert into staff (staffno, firstname, lastname, address, telephoneno, sex, dateofbirth, position, salary, nationalinsuranceno, branchno)  
values ('SG14', 'David', 'Ford', '63 AshbySt, Partick, Glasgow G11', '0141-339-2177', 'M', '1958-03-24', 'Deputy', 18000, 'WI220658D', 'B3'),  
 ('SG5', 'Susan', 'Brand', '5Gt Western Rd, Glasgow G12', '011-334-2001', 'F', '1940-06-03', 'Manager', 24000, 'WK588932E', 'B3'),  
 ('SL21', 'John', 'white', '19 Taylor St, Crandford, London', '0171-884-5112', 'M', '1945-10-01', 'Manager', 30000, 'WK442011B', 'B3'),  
 ('SL41', 'Julie', 'lee', '28 Malvern St, Kilburn NW2', null, 'F', '1965-06-13', 'Assistant', 9000, 'WA290573K', 'B7'),  
 ('SA9', 'Mary', 'Howe', '2 Elm Pl, Aberdeen AB2 su', null, 'F', '1970-02-19', 'Assistant', 9000, 'WM532187D', 'B5'),  
 ('SG37', 'Ann', 'Beech', '81 George St, Glasgow PA1 2Jr', '0141-848-3345', 'F', '1960-11-10', 'Assistant', 12000, 'WI432514C', 'B5');  
  
insert into public.privateowner (privateownerno, firstname, lastname, address)  
values ('CO46', 'John', 'Doe', '16 Holhead'),  
 ('CO87', 'Anna', 'bey', '6 Argyll St'),  
 ('CO40', 'Sarah', 'Smith', '6 Lawrence St'),  
 ('CO93', 'Mona', 'Lisa', '18 Dale Rd');  
  
insert into propertyforrent (propertyno, street, area, city, postcode, type, rooms, rent, privateownerno, staffno, branchno)  
values ('PA14', '16 Holhead', 'Dee', 'Aberdeen', 'AB7 5SU', 'H', 6, 650, 'CO46', 'SA9', 'B7'),  
 ('PL94', '6 Argyll St', 'Kilburn', 'London', 'NW2', 'F', 4, 400, 'CO87', 'SL41', 'B5'),  
 ('PG4', '6 Lawrence St', 'Partick', 'Glasgow', 'G11 9QX', 'F', 3, 350, 'CO40', 'SG14', 'B3'),  
 ('PG36', '2 Manor Rd', null, 'Glasgow', 'G32 4QX', 'F', 3, 375, 'CO93', 'SG37', 'B3'),  
 ('PG21', '18 DaleRd', 'Hyndland', 'Glasgow', 'G12', 'H', 5, 600, 'CO87', 'SG37', 'B3'),  
 ('PG16', '5 Novar Dr', 'Hyndland', 'Glasgow', 'G12 9AX', 'F', 4, 450, 'CO93', 'SG14', 'B3');  
  
insert into public.renter (renterno, firstname, lastname, address, branchno)  
values ('CR56', 'Renter', 'NA', 'Address of renter', 'B3'),  
 ('CR62', 'Renter\_2', 'NA', 'Address of renter\_2', 'B2'),  
 ('CR76', 'Renter\_3', 'NA', 'Address of renter\_3', 'B5');  
  
insert into viewing (propertyno, renterno, dateviewed, comments)  
values ('PA14', 'CR56', '1998-05-24', 'too small'),  
 ('PG4', 'CR76', '1998-04-20', 'too remote'),  
 ('PG4', 'CR56', '1998-05-26', null),  
 ('PA14', 'CR62', '1998-05-14', 'no dining room'),  
 ('PG36', 'CR56', '1998-04-28', null);