HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY, VNU-HCM
FACULTY OF COMPUTER SCIENCE & ENGINEERNG

Assignment

Database systems

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Part A:

Department :

```
CREATE TABLE "SYSTEM"."DEPARTMENT"
 (    "DID" NUMBER(*,0),
  "DTitle" VARCHAR2(50 BYTE),
  "EID" NUMBER(*,0)
 )
--------------------------------------------------------
--  DDL for Index SYS_C007299
--------------------------------------------------------

CREATE UNIQUE INDEX "SYSTEM"."SYS_C007299" ON "SYSTEM"."DEPARTMENT" ("DID")
--------------------------------------------------------
--  Constraints for Table DEPARTMENT
--------------------------------------------------------

ALTER TABLE "SYSTEM"."DEPARTMENT" ADD PRIMARY KEY ("DID")
USING INDEX  ENABLE
ALTER TABLE "SYSTEM"."DEPARTMENT" MODIFY ("DTitle" NOT NULL ENABLE)
--------------------------------------------------------
--  Ref Constraints for Table DEPARTMENT
--------------------------------------------------------

ALTER TABLE "SYSTEM"."DEPARTMENT" ADD CONSTRAINT "SYS_C007328" FOREIGN KEY ("EID")
    REFERENCES "SYSTEM"."DOCTOR" ("EID_DOC") ON DELETE CASCADE ENABLE
```

DID : type number because ID usually is a number

Dtitle: Type varchar(50) because name of the department is usually a short word with maximum range below 50
Every department show have a title to represent them

EID: Type number because ID usually is a number

Doctor:

```
  CREATE TABLE "SYSTEM"."DOCTOR"
   (    "EID_DOC" NUMBER(*,0)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007306
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007306" ON "SYSTEM"."DOCTOR" ("EID_DOC")
--------------------------------------------------------
--  Constraints for Table DOCTOR
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."DOCTOR" ADD PRIMARY KEY ("EID_DOC")
  USING INDEX  ENABLE
--------------------------------------------------------
--  Ref Constraints for Table DOCTOR
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."DOCTOR" ADD CONSTRAINT "SYS_C007307" FOREIGN KEY ("EID_DOC")
      REFERENCES "SYSTEM"."EMPLOYEE" ("EID") ON DELETE CASCADE ENABLE
```

EID_DOC: Type number because ID usually is a number

Emp_phone

```
  CREATE TABLE "SYSTEM"."EMP_PHONE"
   (    "EID" NUMBER(*,0),
    "EPHONE" NUMBER(*,0)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007305
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007305" ON "SYSTEM"."EMP_PHONE" ("EID", "EPHONE")
--------------------------------------------------------
--  Constraints for Table EMP_PHONE
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."EMP_PHONE" ADD PRIMARY KEY ("EID", "EPHONE")
  USING INDEX  ENABLE
--------------------------------------------------------
--  Ref Constraints for Table EMP_PHONE
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."EMP_PHONE" ADD CONSTRAINT "EMP_PHONE" FOREIGN KEY ("EID")
      REFERENCES "SYSTEM"."EMPLOYEE" ("EID") ON DELETE CASCADE ENABLE
```

EID: Type number because ID usually is a number
EPhone: Type number because phone usually is a number

Employee:

```
CREATE TABLE "SYSTEM"."EMPLOYEE"
 (    "EID" NUMBER(*,0),
  "EFNAME" VARCHAR2(50),
  "ELNAME" VARCHAR2(50),
  "EDOB" DATE,
  "EGENDER" CHAR(1),
  "ESPECIALITY" VARCHAR2(50),
  "EADDRESS" VARCHAR2(50),
  "ESTARTDATE" DATE,
  "DID" NUMBER(*,0)
 )
--------------------------------------------------------
--  DDL for Index SYS_C007300
--------------------------------------------------------
CREATE UNIQUE INDEX "SYSTEM"."SYS_C007300" ON "SYSTEM"."EMPLOYEE" ("EID")
--------------------------------------------------------
--  Constraints for Table EMPLOYEE
--------------------------------------------------------
ALTER TABLE "SYSTEM"."EMPLOYEE" ADD PRIMARY KEY ("EID")
USING INDEX  ENABLE
ALTER TABLE "SYSTEM"."EMPLOYEE" MODIFY ("EFNAME" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."EMPLOYEE" MODIFY ("ELNAME" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."EMPLOYEE" MODIFY ("EDOB" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."EMPLOYEE" MODIFY ("ESTARTDATE" NOT NULL ENABLE)
--------------------------------------------------------
--  Ref Constraints for Table EMPLOYEE
--------------------------------------------------------

ALTER TABLE "SYSTEM"."EMPLOYEE" ADD CONSTRAINT "SYS_C007301" FOREIGN KEY ("DID")
    REFERENCES "SYSTEM"."DEPARTMENT" ("DID") ON DELETE CASCADE ENABLE
```

EID: Type number because ID usually is a number
EFName: Type varchar(50) because fname is usually a short word with maximum range below 50
Not null because every Employee should have a first name

ELName: Type varchar(50) because lname is usually a short word with maximum range below 50
Not null because every Employee should have a last name

EDOB: Type date because it is date of birth
Not null because every Employee should have date of birth

EGENDER: Type varchar(1) beacause there usually 2 option M/F
ESPECIALITY : Type varchar(50) because speciality is usually a short word with maximum range below 50
EADDRESS : Type varchar(50) because address is usually a short word with maximum range below 50

EStartDate : Type date because it is the date when the employee started
Not null because every Employee should have a start day

DID : type number because ID usually is a number

NURSE:

```
  CREATE TABLE "SYSTEM"."NURSE"
   (    "EID_NUR" NUMBER(*,0)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007303
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007303" ON "SYSTEM"."NURSE" ("EID_NUR")
--------------------------------------------------------
--  Constraints for Table NURSE
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."NURSE" ADD PRIMARY KEY ("EID_NUR")
  USING INDEX  ENABLE
--------------------------------------------------------
--  Ref Constraints for Table NURSE
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."NURSE" ADD CONSTRAINT "SYS_C007304" FOREIGN KEY ("EID_NUR")
      REFERENCES "SYSTEM"."EMPLOYEE" ("EID") ON DELETE CASCADE ENABLE
```

EID_NUR : Type number because ID usually is a number

Patient:

```
CREATE TABLE "SYSTEM"."PATIENT"
 (    "PID" NUMBER(*,0),
  "PFNAME" VARCHAR2(50),
  "PLNAME" VARCHAR2(50),
  "PDOB" DATE,
  "PGENDER" CHAR(1),
  "PPHONE" NUMBER(*,0),
  "PADDRESS" VARCHAR2(200)
 )
--------------------------------------------------------
--  DDL for Index SYS_C007302
--------------------------------------------------------

CREATE UNIQUE INDEX "SYSTEM"."SYS_C007302" ON "SYSTEM"."PATIENT" ("PID")
--------------------------------------------------------
--  Constraints for Table PATIENT
--------------------------------------------------------

ALTER TABLE "SYSTEM"."PATIENT" ADD PRIMARY KEY ("PID")
USING INDEX  ENABLE
ALTER TABLE "SYSTEM"."PATIENT" MODIFY ("PFNAME" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."PATIENT" MODIFY ("PLNAME" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."PATIENT" MODIFY ("PDOB" NOT NULL ENABLE)
/
```

PID: Type number because ID usually is a number
PFName: Type varchar(50) because name is usually a short word with maximum range below 50
Not null because every patient should have a first name

PLName: Type varchar(50) because name is usually a short word with maximum range below 50
Not null because every patient should have a last name

PDOB: Type date because it is date of birth
Not null because every patient should have a date of birth

PGENDER: Type varchar(1) beacause there usually 2 option M/F
EADDRESS : Type varchar(200) because address is usually word with maximum range below 200
PPhone: Type number because phone usually is a number

OUTPATIENT:

```
  CREATE TABLE "SYSTEM"."OUTPATIENT"
   (    "PID_OUT" NUMBER(*,0),
    "EID_DOC" NUMBER(*,0)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007308
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007308" ON "SYSTEM"."OUTPATIENT" ("PID_OUT")
--------------------------------------------------------
--  Constraints for Table OUTPATIENT
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."OUTPATIENT" ADD PRIMARY KEY ("PID_OUT")
  USING INDEX  ENABLE
--------------------------------------------------------
--  Ref Constraints for Table OUTPATIENT
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."OUTPATIENT" ADD CONSTRAINT "SYS_C007309" FOREIGN KEY ("EID_DOC")
      REFERENCES "SYSTEM"."DOCTOR" ("EID_DOC") ON DELETE CASCADE ENABLE
```

PID_Out , EID_Doc : Type number because ID usually is a number

Inpatient:

```
  CREATE TABLE "SYSTEM"."INPATIENT"
   (    "PID_IN" NUMBER(*,0),
    "PADMISSIONDATE" DATE,
    "PDISCHARGEDATE" DATE,
    "PDIAGNOSIS" VARCHAR2(50),
    "PSICKROOM" NUMBER(*,0),
    "PFEE" FLOAT(126),
    "EID_DOC" NUMBER(*,0),
    "EID_NUR" NUMBER(*,0)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007313
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007313" ON "SYSTEM"."INPATIENT" ("PID_IN")
--------------------------------------------------------
--  Constraints for Table INPATIENT
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."INPATIENT" ADD PRIMARY KEY ("PID_IN")
  USING INDEX  ENABLE
--------------------------------------------------------
--  Ref Constraints for Table INPATIENT
--------------------------------------------------------
  ALTER TABLE "SYSTEM"."INPATIENT" ADD CONSTRAINT "SYS_C007314" FOREIGN KEY ("EID_DOC")
      REFERENCES "SYSTEM"."DOCTOR" ("EID_DOC") ON DELETE CASCADE ENABLE
  ALTER TABLE "SYSTEM"."INPATIENT" ADD CONSTRAINT "SYS_C007315" FOREIGN KEY ("EID_NUR")
      REFERENCES "SYSTEM"."NURSE" ("EID_NUR") ON DELETE CASCADE ENABLE
  ALTER TABLE "SYSTEM"."INPATIENT" ADD CONSTRAINT "SYS_C007316" FOREIGN KEY ("PID_IN")
      REFERENCES "SYSTEM"."PATIENT" ("PID") ON DELETE CASCADE ENABLE
```

PID_In, EID_Doc, EID_Nur : Type number because ID usually is a number
PAdmissionDate, PDischargeDate : Type date because it is date
PSickroom : Type number because room usually contain only number
PDiagnosis : Type varchar(50) because diagnosis is usually a short word with maximum range below 50
PFee: Type float because money should have it's factor

Every attribute is essential so no attribute can be null

EXAMINATION:

```
CREATE TABLE "SYSTEM"."EXAMINATION"
 (    "EID_DOC" NUMBER(*,0),
  "PID_OUT" NUMBER(*,0),
  "EXID" NUMBER(*,0),
  "EXDATE" DATE,
  "EXFEE" FLOAT(126),
  "EXDIAGNOSIS" VARCHAR2(50),
  "EXSECONDEXAMINATIONDATE" DATE
 )
--------------------------------------------------------
--  DDL for Index SYS_C007310
--------------------------------------------------------
CREATE UNIQUE INDEX "SYSTEM"."SYS_C007310" ON "SYSTEM"."EXAMINATION" ("EID_DOC", "PID_OUT", "EXID")
--------------------------------------------------------
--  Constraints for Table EXAMINATION
--------------------------------------------------------
ALTER TABLE "SYSTEM"."EXAMINATION" ADD PRIMARY KEY ("EID_DOC", "PID_OUT", "EXID")
USING INDEX  ENABLE
ALTER TABLE "SYSTEM"."EXAMINATION" MODIFY ("EXDATE" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."EXAMINATION" MODIFY ("EXFEE" NOT NULL ENABLE)
ALTER TABLE "SYSTEM"."EXAMINATION" MODIFY ("EXDIAGNOSIS" NOT NULL ENABLE)
--------------------------------------------------------
--  Ref Constraints for Table EXAMINATION
--------------------------------------------------------

ALTER TABLE "SYSTEM"."EXAMINATION" ADD CONSTRAINT "SYS_C007311" FOREIGN KEY ("EID_DOC")
    REFERENCES "SYSTEM"."DOCTOR" ("EID_DOC") ON DELETE CASCADE ENABLE
ALTER TABLE "SYSTEM"."EXAMINATION" ADD CONSTRAINT "SYS_C007312" FOREIGN KEY ("PID_OUT")
    REFERENCES "SYSTEM"."OUTPATIENT" ("PID_OUT") ON DELETE CASCADE ENABLE
```

EID_Doc, PID_Out, ExID : Type number because ID usually is a number
ExDate , ExSencondExaminationDate: Type date because it is date
ExFee: Type float because money should have it factor
ExDiagnosis: Type varchar(50) because diagnosis is usually a short word with maximum range below 50

ExSencondExaminationDate maybe it not necessary so it is the only attribute that can be null

TREATMENT:

```
  CREATE TABLE "SYSTEM"."TREATMENT"
   (    "EID_DOC" NUMBER(*,0),
    "PID_IN" NUMBER(*,0),
    "TRID" NUMBER(*,0),
    "TRSTART" DATE,
    "TREND" DATE,
    "TRRESULT" VARCHAR2(50)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007317
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007317" ON "SYSTEM"."TREATMENT" ("EID_DOC", "PID_IN", "TRID")
--------------------------------------------------------
--  Constraints for Table TREATMENT
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."TREATMENT" ADD PRIMARY KEY ("EID_DOC", "PID_IN", "TRID")
  USING INDEX  ENABLE
  ALTER TABLE "SYSTEM"."TREATMENT" MODIFY ("TRSTART" NOT NULL ENABLE)
  ALTER TABLE "SYSTEM"."TREATMENT" MODIFY ("TREND" NOT NULL ENABLE)
  ALTER TABLE "SYSTEM"."TREATMENT" MODIFY ("TRRESULT" NOT NULL ENABLE)
--------------------------------------------------------
--  Ref Constraints for Table TREATMENT
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."TREATMENT" ADD CONSTRAINT "SYS_C007318" FOREIGN KEY ("EID_DOC")
      REFERENCES "SYSTEM"."DOCTOR" ("EID_DOC") ON DELETE CASCADE ENABLE
  ALTER TABLE "SYSTEM"."TREATMENT" ADD CONSTRAINT "SYS_C007319" FOREIGN KEY ("PID_IN")
      REFERENCES "SYSTEM"."INPATIENT" ("PID_IN") ON DELETE CASCADE ENABLE
```

EID_Doc, PID_In, TrID : Type number because ID usually is a number
TrStart, TrEnd: Type date because it is date
TrResult: Type varchar(50) because result is usually a short word with maximum range below 50

Every attribute is essential so no attribute can be null

MEDICATION:

```
  CREATE TABLE "SYSTEM"."MEDICATION"
   (    "MID" NUMBER(*,0),
    "MNAME" VARCHAR2(50),
    "MEFFECTS" VARCHAR2(50),
    "MPRICE" FLOAT(126)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007320
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007320" ON "SYSTEM"."MEDICATION" ("MID")
--------------------------------------------------------
--  Constraints for Table MEDICATION
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."MEDICATION" ADD PRIMARY KEY ("MID")
  USING INDEX  ENABLE
  ALTER TABLE "SYSTEM"."MEDICATION" MODIFY ("MNAME" NOT NULL ENABLE)
  ALTER TABLE "SYSTEM"."MEDICATION" MODIFY ("MEFFECTS" NOT NULL ENABLE)
  ALTER TABLE "SYSTEM"."MEDICATION" MODIFY ("MPRICE" NOT NULL ENABLE)
```

MID : Type number because ID usually is a number
MName : Type varchar(50) because name is usually a short word with maximum range below 50
MEffects: Type varchar(50) because effect is usually a short word with maximum range below 50
MPrice: Type float because money should have it’s factor

Every attribute is essential so no attribute can be null

Uses_exam:

```
  CREATE TABLE "SYSTEM"."USES_EXAM"
   (    "EID_DOC" NUMBER(*,0),
    "PID_OUT" NUMBER(*,0),
    "EXID" NUMBER(*,0),
    "MID" NUMBER(*,0)
   )
--------------------------------------------------------
--  DDL for Index SYS_C007321
--------------------------------------------------------

  CREATE UNIQUE INDEX "SYSTEM"."SYS_C007321" ON "SYSTEM"."USES_EXAM" ("EID_DOC", "PID_OUT", "EXID", "MID")
--------------------------------------------------------
--  Constraints for Table USES_EXAM
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."USES_EXAM" ADD PRIMARY KEY ("EID_DOC", "PID_OUT", "EXID", "MID")
  USING INDEX  ENABLE
--------------------------------------------------------
--  Ref Constraints for Table USES_EXAM
--------------------------------------------------------

  ALTER TABLE "SYSTEM"."USES_EXAM" ADD CONSTRAINT "SYS_C007322" FOREIGN KEY ("EID_DOC", "PID_OUT", "EXID")
      REFERENCES "SYSTEM"."EXAMINATION" ("EID_DOC", "PID_OUT", "EXID") ON DELETE CASCADE ENABLE
  ALTER TABLE "SYSTEM"."USES_EXAM" ADD CONSTRAINT "SYS_C007323" FOREIGN KEY ("MID")
      REFERENCES "SYSTEM"."MEDICATION" ("MID") ON DELETE CASCADE ENABLE
```

EID_Doc, PID_Out, ExID, MID: Type number because ID usually is a number

Uses_Treat:

```
 CREATE TABLE "SYSTEM"."USES_TREAT"
  (    "EID_DOC" NUMBER(*,0),
   "PID_IN" NUMBER(*,0),
   "TRID" NUMBER(*,0),
   "MID" NUMBER(*,0)
  )
--------------------------------------------------------
-  DDL for Index SYS_C007324
--------------------------------------------------------

 CREATE UNIQUE INDEX "SYSTEM"."SYS_C007324" ON "SYSTEM"."USES_TREAT" ("EID_DOC", "PID_IN", "TRID", "MID")
--------------------------------------------------------
-  Constraints for Table USES_TREAT
--------------------------------------------------------

 ALTER TABLE "SYSTEM"."USES_TREAT" ADD PRIMARY KEY ("EID_DOC", "PID_IN", "TRID", "MID")
 USING INDEX  ENABLE
--------------------------------------------------------
-  Ref Constraints for Table USES_TREAT
--------------------------------------------------------

 ALTER TABLE "SYSTEM"."USES_TREAT" ADD CONSTRAINT "SYS_C007325" FOREIGN KEY ("EID_DOC", "PID_IN", "TRID")
     REFERENCES "SYSTEM"."TREATMENT" ("EID_DOC", "PID_IN", "TRID") ON DELETE CASCADE ENABLE
 ALTER TABLE "SYSTEM"."USES_TREAT" ADD CONSTRAINT "SYS_C007326" FOREIGN KEY ("MID")
     REFERENCES "SYSTEM"."MEDICATION" ("MID") ON DELETE CASCADE ENABLE
```

EID_Doc, PID_In, TrID, MID : Type number because ID usually is a number

Note: The Primary key, the reference key is set to the require of the assignment
The Primary key is set to differentiate each of the tuple, each tuple must have the unique value of the primary key, and each table must have one of this type of key

The reference key is a key that refer into another table

Delete on cascade to help schema to be consistent , when someone delete a attribute that is referenced , the reference key is delete with that key

Part 2:

a)

```
update Inpatient
set   PFEE = PFEE + PFEE *0.1
where padmissiondate > '01/SEP/2017';
```

b)

```
select pid
from (inpatient  NATURAL full outer JOIN outpatient) left join patient
on (PID_IN = PID or PID_OUT = PID)
where eid_doc in (
   select eid from employee where efname = 'Nguyen Van' and
employee.elname = 'A'
)
```

c) :

```
create or replace FUNCTION Get_total_med (
   PATIENT_ID NUMBER
)
RETURN MED_TAB
AS
   RES_TAB MED_TAB;
BEGIN
   RES_TAB := MED_TAB();
   FOR DATA IN (
   SELECT PID, EXID, TRID, TOTALPRICE
   FROM
```

```
   (SELECT PID, EXID, NULL AS TRID,
COALESCE(SUM(MPRICE),0) AS TOTALPRICE FROM
   (SELECT PID, EXID, MID
   FROM PATIENT  JOIN EXAMINATION ON PID_OUT=PID
NATURAL LEFT JOIN USES_EXAM
   GROUP BY PID, EXID, MID) A
   LEFT JOIN MEDICATION M ON A.MID = M.MID
   GROUP BY PID, EXID
   UNION
   SELECT PID, NULL AS EXID, TRID,
COALESCE(SUM(MPRICE),0) AS TOTALPRICE FROM
   (SELECT PID, MID, TRID
   FROM PATIENT  JOIN TREATMENT ON PID_IN=PID NATURAL
LEFT JOIN USES_TREAT
   GROUP BY PID, TRID, MID) B
   LEFT JOIN MEDICATION M ON B.MID=M.MID
   GROUP BY PID, TRID) WHERE PID=PATIENT_ID)
   LOOP
      RES_TAB.EXTEND;
      RES_TAB(RES_TAB.COUNT) := MED_OJB (DATA.PID,
DATA.EXID, DATA.TRID, DATA.TOTALPRICE);
   END LOOP;
   RETURN RES_TAB;
END;
```

d):

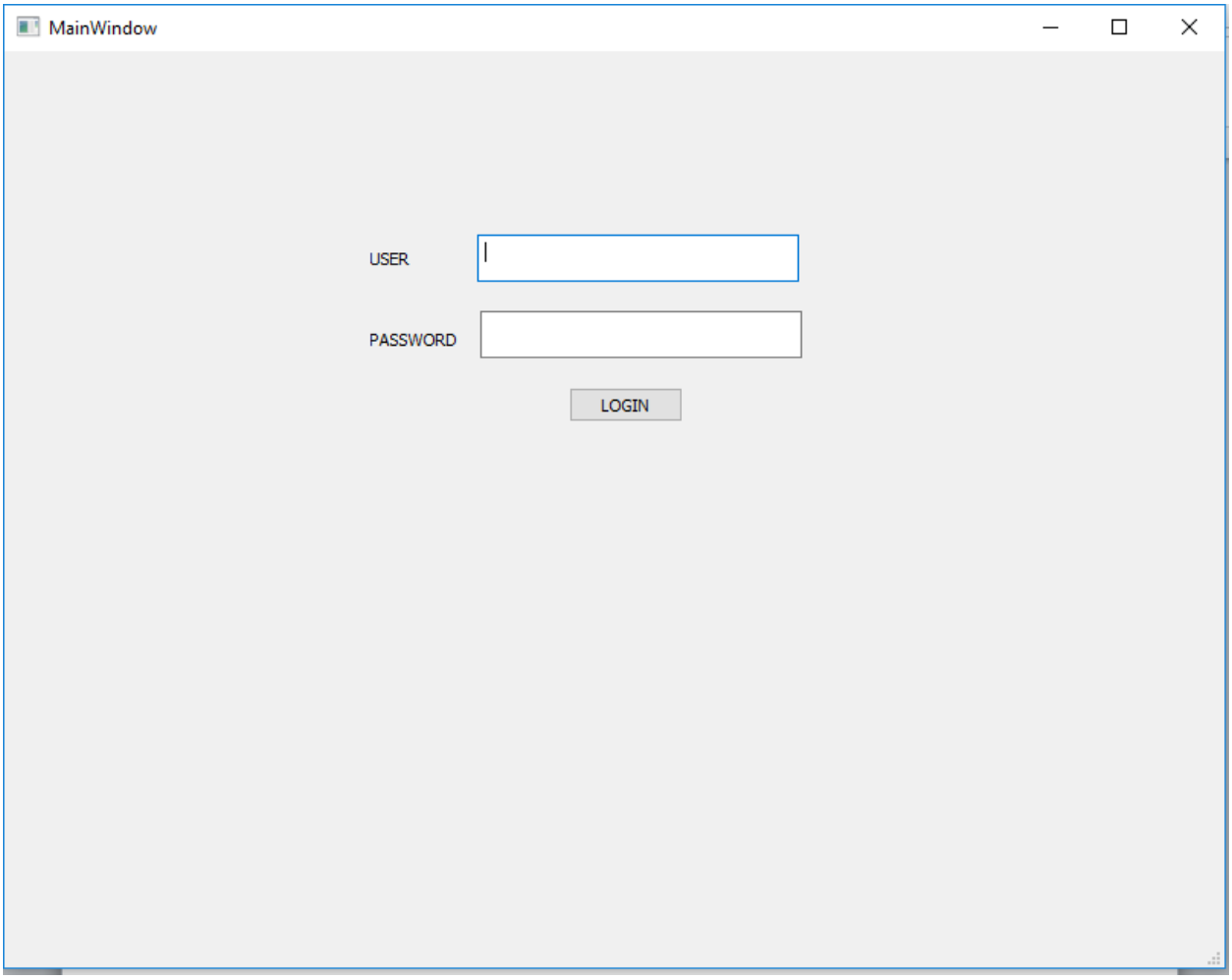
```
create or replace PROCEDURE DOC_patients (
     STARTDATE IN DATE
   , ENDDATE IN DATE
) AS
BEGIN
   FOR ITEM IN (
     SELECT EID_DOC, SUM(TOTAL) AS TOTALPATIENTS
     FROM
       (
       SELECT EID_DOC, COUNT(distinct PID_IN) AS TOTAL
       FROM DOCTOR
       NATURAL JOIN TREATMENT
```

```
            WHERE TRSTART >= STARTDATE AND TREND <=
ENDDATE
            GROUP BY EID_DOC
            UNION ALL
            SELECT EID_DOC, COUNT(distinct PID_OUT) AS TOTAL
            FROM DOCTOR
            NATURAL JOIN EXAMINATION
            WHERE EXDATE >= STARTDATE
            GROUP BY EID_DOC
            ) GROUP BY EID_DOC
          ORDER BY SUM(TOTAL) DESC)
          LOOP
            dbms_output.put_line('Doctor ID: ' || ITEM.EID_DOC);
            dbms_output.put_line('Total Patients: '|| ITEM.TOTALPATIENTS);
          END LOOP;
      END DOC_patients;
```

Part B:

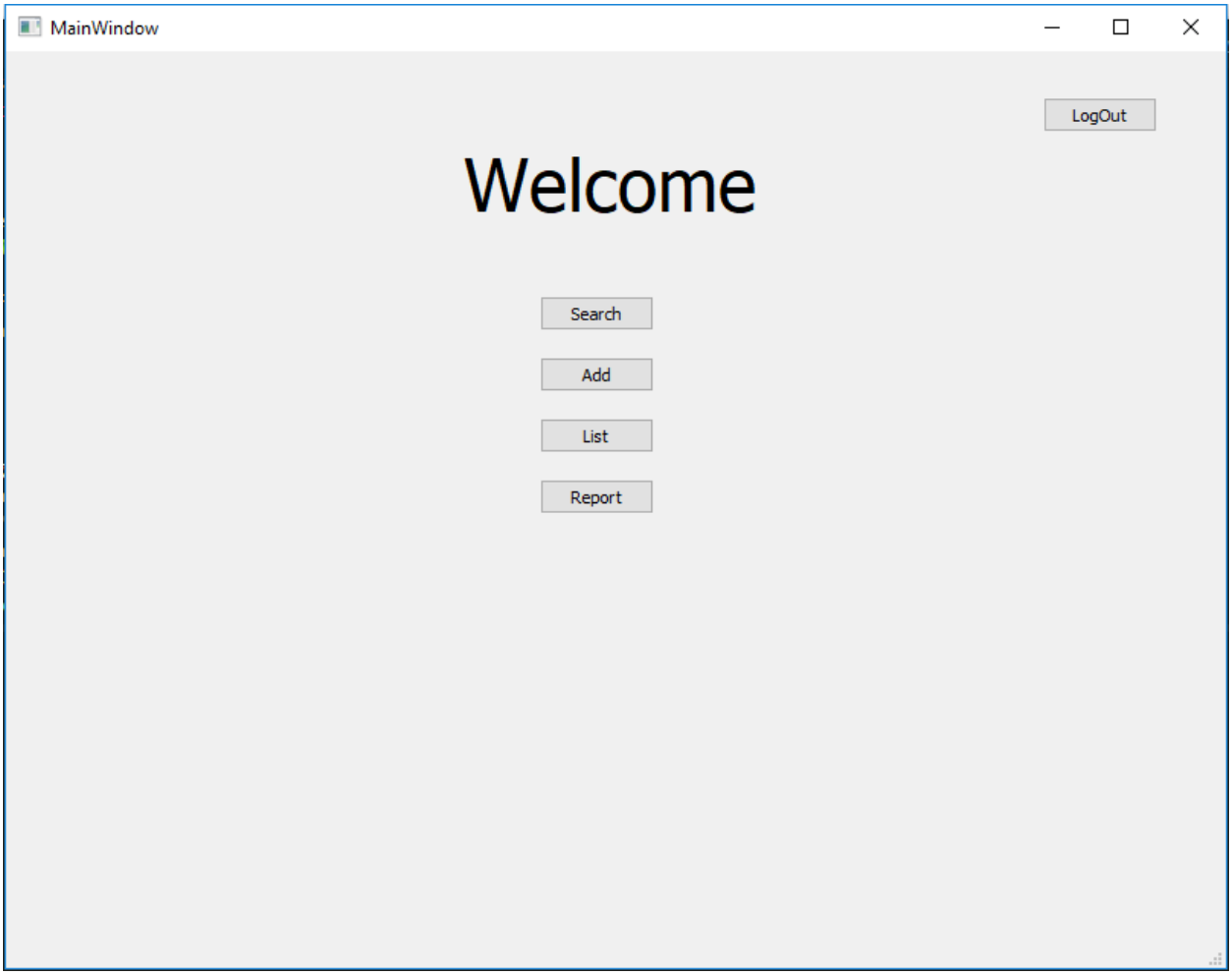
The built the user interface using python 3.6 (64-bit), the support of PyQt5, cx_Oracle python library , and a tool call Qt designer.

To run our program should should run the main.py file



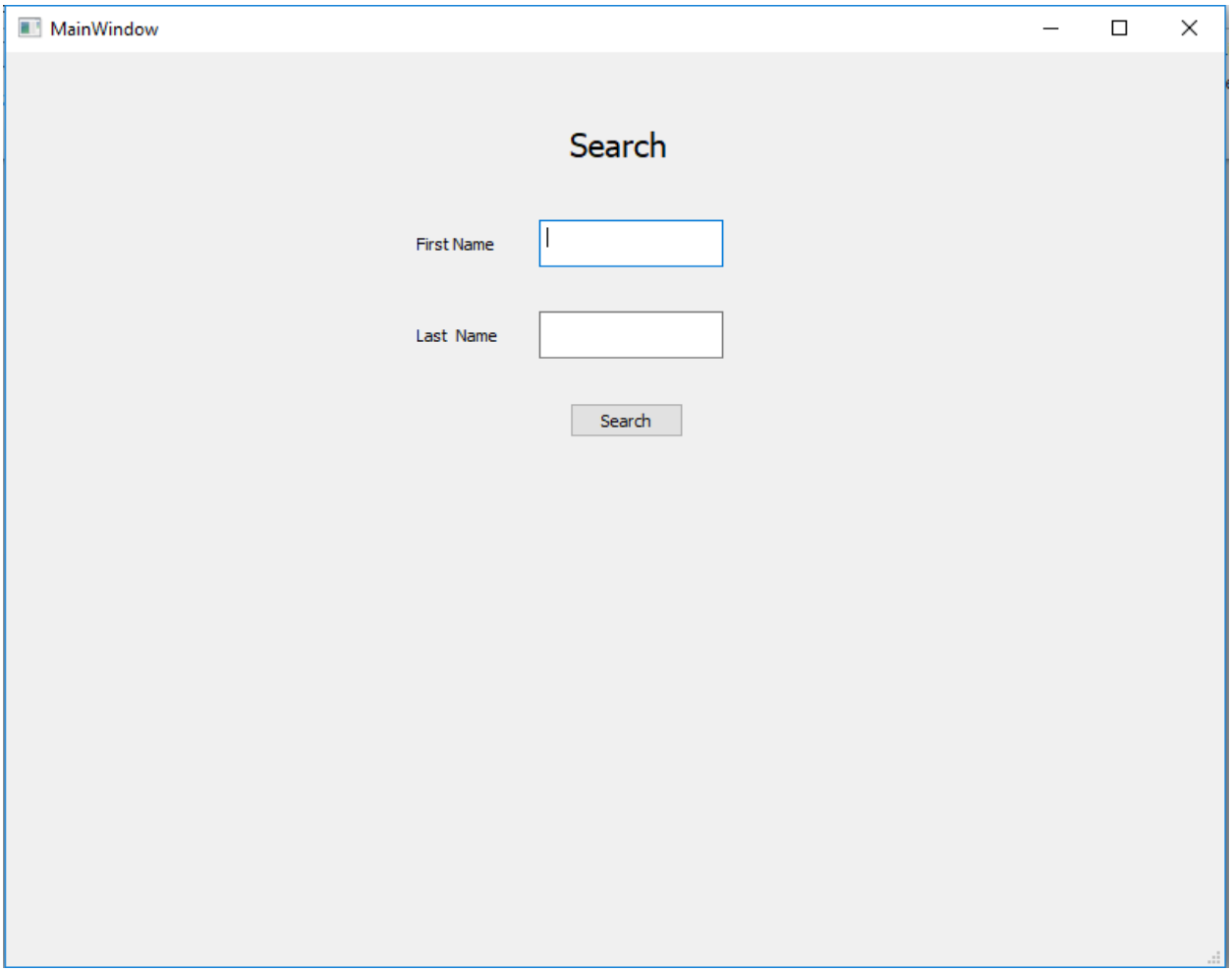
This is the main window you going to see, we create a account for manager with the username and password following:
Username : C##hospital_manager
Password: 123

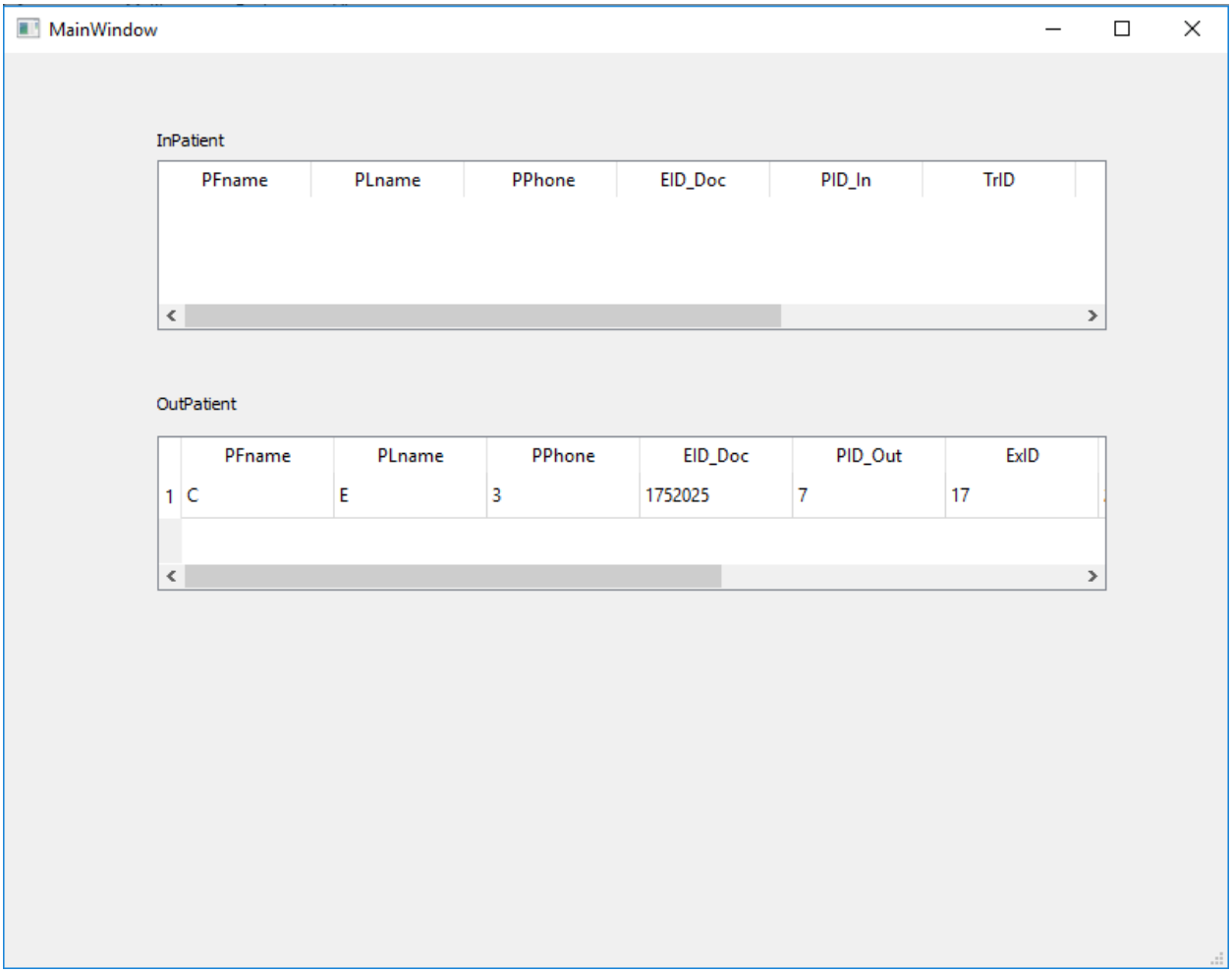
If login is successful you will see:



This is the Welcome page and there 4 option for user to choose, this is the main page you can log out if needed.

The Search function: Search patient information: Search results include the name, phone number and information about the treatment and visit of the patient.

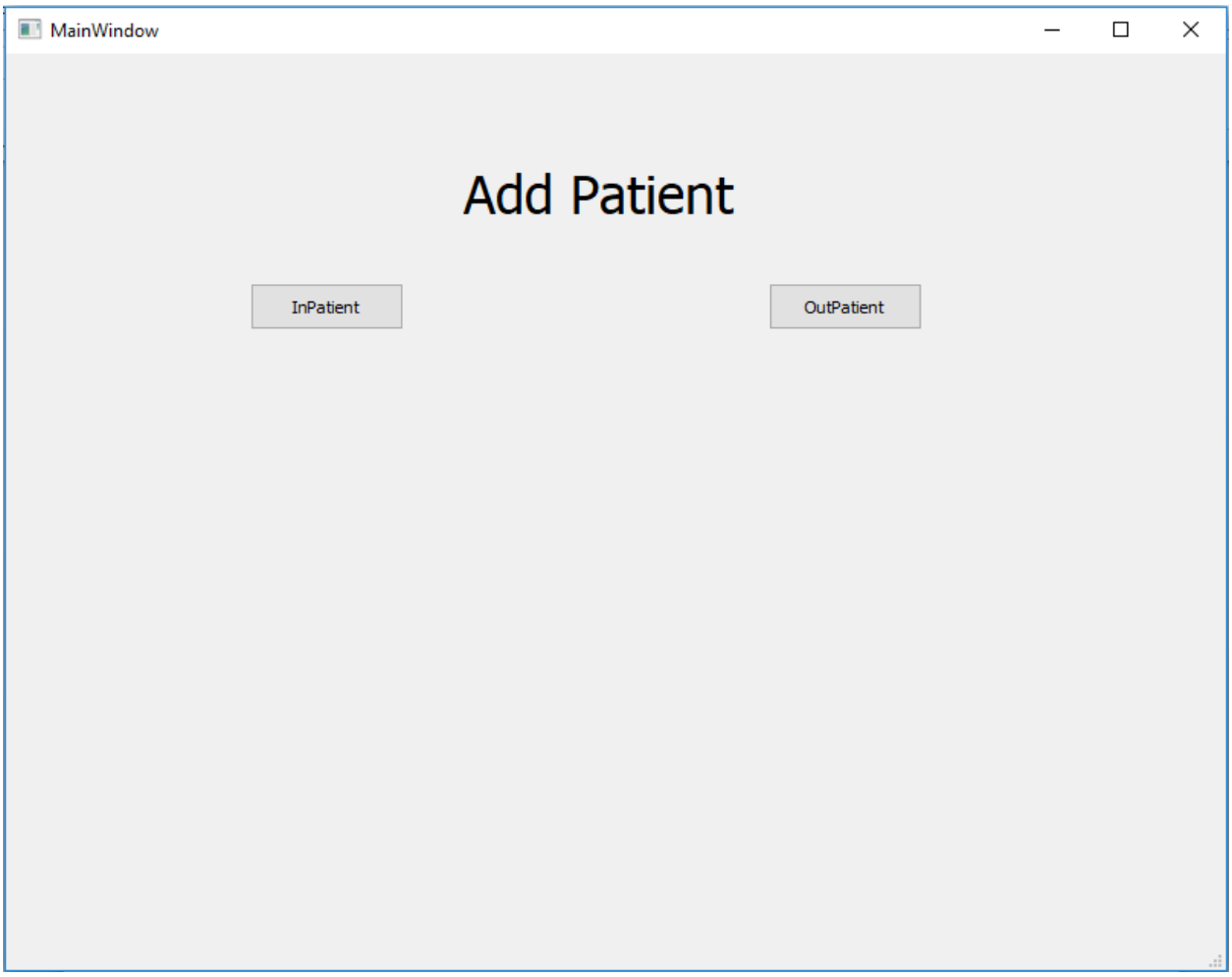

MainWindow
Search
First Name
Last Name
Search



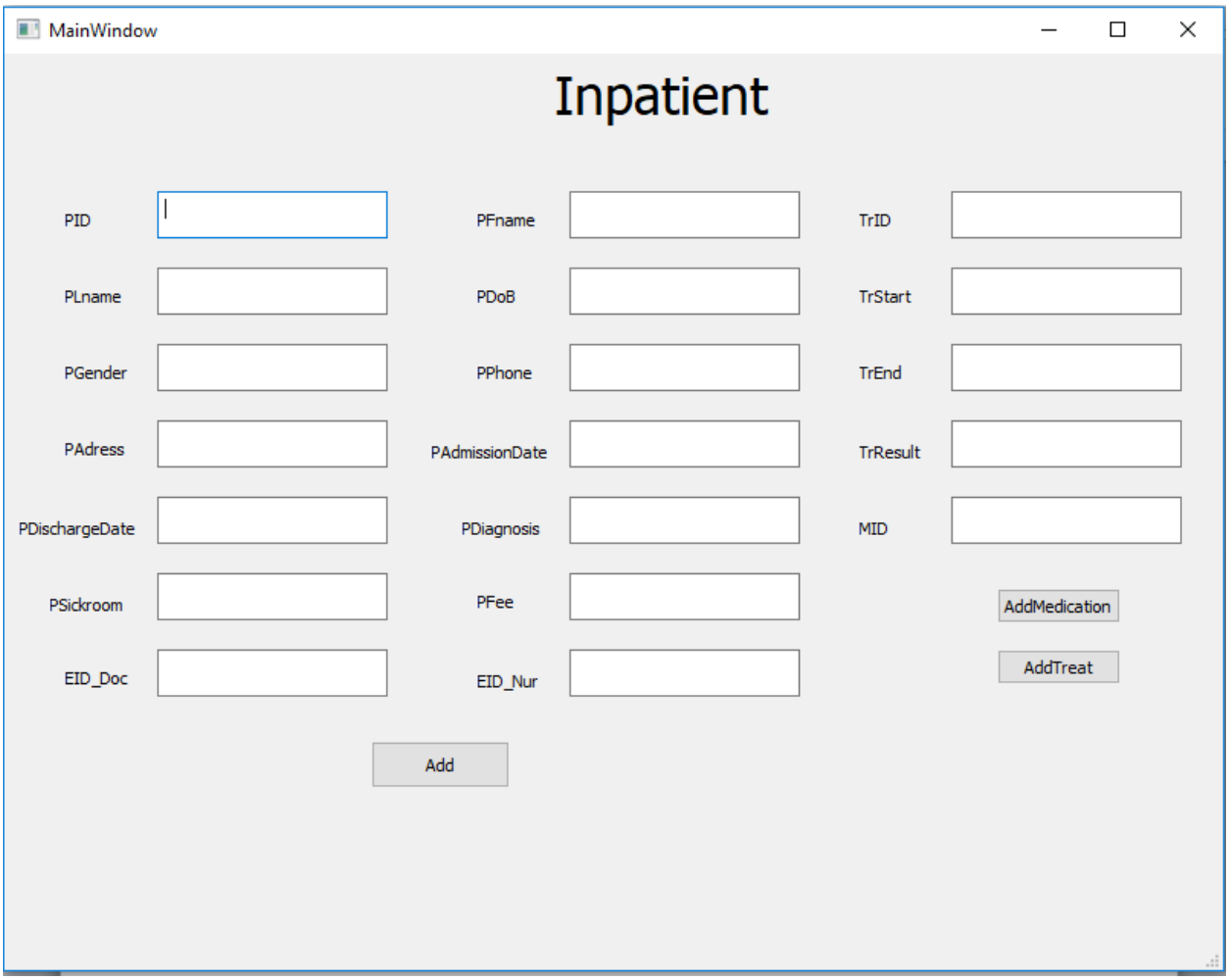
There are two tables in case of two patient have the same name but is a difference type of patient

There will be multiple columns in the same table if 2 patient have the same name and is the same type of patient , or they have took multiple exam or treatment

Add Function: Add information for a new patient

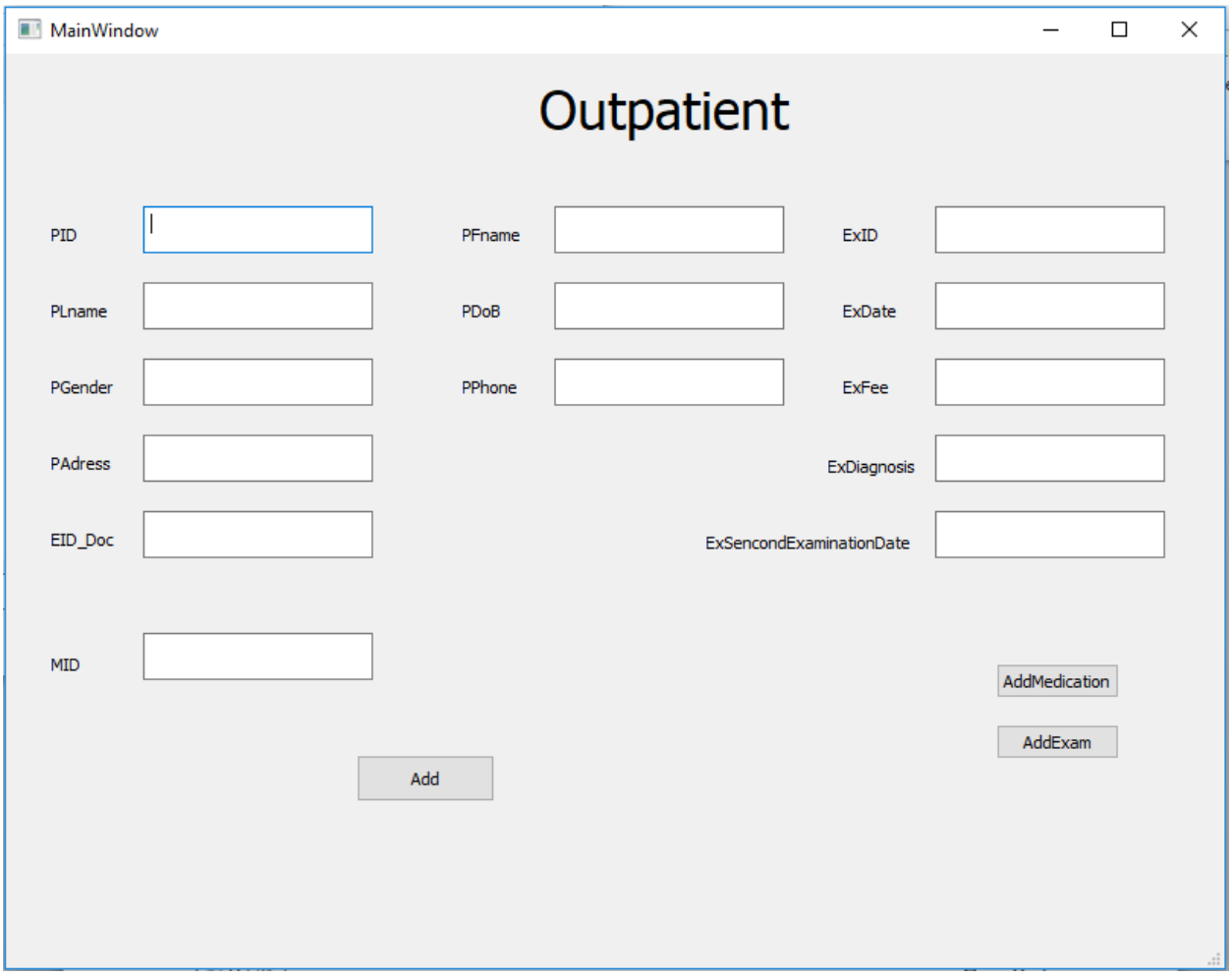


There are two options if the patient you want to add is inpatient click inpatient , like wise.

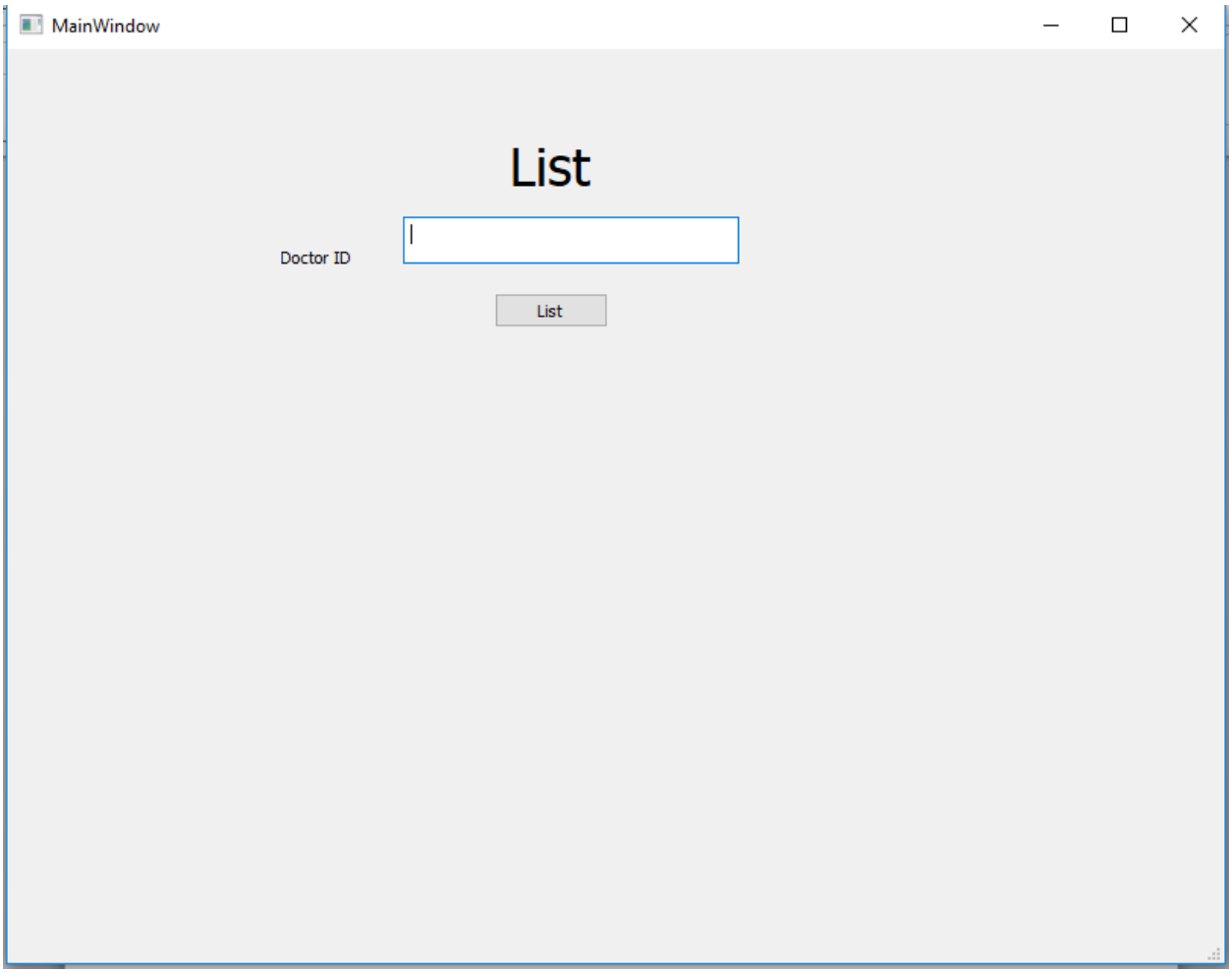


Note: all of the information relate to Date have to be in the format of
DD-MM-YYY
Because one patient can have many treatment and each treatment can have many medication , there are 3 button
If you want to use the Add function, you have to fill in all of the information.
If you want to use the AddMedication , you just need to fill in PID,EID_Doc, TrID,MID
If you want to use AddTreat, you just need to fill in PID, EID_Doc, TrID,TrStart,TrEnd,TrResult,MID

The same is true for the outpatient:



ListFunction: List details of all patients which are treated by a doctor


MainWindow
List
Doctor ID
List

ReportFunction: Make a report that provides full information about the payment for each treatment or examination of a patient.