PYTHON CODING CHALLENGE

HOSPITAL MANAGEMENT SYSTEM

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Entity Package

patient.py

```
from util.DBConnUtil import DBConnection
class Patient(DBConnection):
   def __init__(self):
       super().__init__
       self.patientid=0
       self.firstname=' '
       self.lastname=' '
       self.dateofbirth=' '
       self.gender=' '
       self.contactnumber=0
       self.address=' '
    #Setters
    def set patientid(self, value):
        self.patientid=value
    def set firstname(self, value):
        self.firstname = value
    def set lastname(self, value):
        self.lastname = value
    def set dateofbirth(self, value):
        self.dateofbirth = value
    def set gender(self, value):
        self.gender = value
    def set contactnumber(self, value):
       self.contactnumber = value
    def set address(self, value):
       self.address = value
    #Getters
    def get patientid(self):
       return self.patientid
```

```
def get firstname(self):
        return self.firstname
    def get lastname(self):
        return self.lastname
    def get dateofbirth(self):
        return self.dateofbirth
    def get gender(self):
        return self.gender
    def get contactnumber(self):
        return self.contactnumber
    def get address(self):
       return self.address
    def str(self):
       return f'Patient ID:{self.patientid} First Name:{self.firstname}
Last Name:{self.lastname}\n ' \
              f'Date Of Birth:{self.dateofbirth} Gender:{self.gender}
Contact Number:{self.contactnumber} Address:{self.address}'
```

doctor.py

```
class Doctor(DBConnection):
   def __init__(self):
       super().__init__()
        self.doctorid=0
       self.firstname=' '
       self.lastname=' '
        self.specialization=' '
        self.contactnumber=0
    #Setters
    def set doctorid(self, value):
        self.doctorid=value
    def set firstname(self, value):
        self.firstname = value
    def set lastname(self, value):
        self.lastname = value
    def set specialization(self, value):
        self.specialization = value
    def set contactnumber(self, value):
        self.contactnumber = value
    #Getters
    def get doctoridid(self):
       return self.patientid
```

appointment.py

```
from entity.patient import Patient
from entity.doctor import Doctor
class Appointment(Patient, Doctor):
    def __init__(self):
       super().__init__()
        self.apppointmentid = 0
       self.patientid = 0
       self.doctorid = 0
       self.appointmentdate = ' '
        self.description = 0
    # Setters
    def set apppointmentid (self, value):
        self.apppointmentid = value
    def set patientid(self, value):
        self.patientid = value
    def set doctorid (self, value):
        self.doctorid = value
    def set appointmentdate(self, value):
        self.appointmentdate = value
    def set description(self, value):
        self.description = value
    # Getters
    def get apppointmentid (self):
       return self.apppointmentid
    def get patientid(self):
        return self.patientid
```

DAO Package

patientdao.py

```
from entity.patient import Patient
class PatientDao(Patient):
   def __init__(self):
        super().__init__()
    def perform_patient_actions(self):
        while True:
            print("(Patient) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE 5.SELECT
O.EXIT")
            ch = int(input("Enter choice: "))
            if ch == 1:
                self.create patient table()
            elif ch == 2:
                print(self.add patient())
            elif ch == 3:
                print(self.update patient())
            elif ch == 4:
                print(self.delete patient())
            elif ch == 5:
                self.select patient()
            elif ch == 0:
                break
            else:
                print("Invalid choice")
    def create patient table(self):
        try:
            create str = '''CREATE TABLE IF NOT EXISTS Patient (
                patientid INT PRIMARY KEY,
                firstname VARCHAR(255),
                lastname VARCHAR(255),
                dateofbirth DATE,
                gender VARCHAR(10),
```

```
contactnumber VARCHAR(15),
                address VARCHAR(255))'''
            self.open()
            self.stmt.execute(create str)
            self.close()
            print('Patient Table Created successfully.')
        except Exception as e:
            print(f"Error creating patient table: {e}")
    def add patient(self):
        try:
            self.open()
            self.patientid = int(input('Enter Patient ID: '))
            self.firstname = input('Enter First Name: ')
            self.lastname = input('Enter Last Name: ')
            self.dateofbirth = input('Enter DOB: ')
            self.gender = input('Enter Gender: ')
            self.contactnumber = input('Enter Number: ')
            self.address = input('Enter address: ')
            data = [(self.patientid, self.firstname, self.lastname,
self.dateofbirth, self.gender, self.contactnumber,self.address)]
            insert str = '''INSERT INTO Patient(patientid,
firstname, lastname, dateofbirth, gender, contactnumber, address)
                            VALUES(%s, %s, %s, %s, %s, %s, %s)'''
            self.stmt.executemany(insert str, data)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return f"Error adding patient: {e}"
    def update patient(self):
        try:
            self.open()
            patientid = int(input('Input Patient ID to be Updated: '))
            self.firstname = input('Enter First Name: ')
            self.lasnName = input('Enter Last Name: ')
            self.dateofbirth = input('Enter DOB: ')
            self.gender = input('Enter Gender: ')
            self.contactnumber = input('Enter Phone Number: ')
            self.address = input('Enter Address: ')
            data = [(self.firstname, self.lastname, self.dateofbirth,
self.gender, self.contactnumber, self.address,patientid)]
            update str = '''UPDATE Patient SET firstname=%s, lastname=%s,
dateofbirth=%s, gender=%s, contactnumber=%s, address=%s
                            WHERE patientid = %s'''
            self.stmt.executemany(update str, data)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return f"Error updating patient: {e}"
    def delete patient(self):
        try:
            self.open()
            patientid = int(input('Input PatientID to be Deleted: '))
            delete str = f'''DELETE FROM Patient WHERE patientId =
```

```
{patientid}'''
            self.stmt.execute(delete str)
           self.conn.commit()
           self.close()
           return True
       except Exception as e:
           return f"Error deleting patient: {e}"
   def select patient(self):
       try:
           select str = '''SELECT * FROM Patient'''
           self.open()
           self.stmt.execute(select str)
           records = self.stmt.fetchall()
           self.close()
           print('Records In Patient Table:')
            for i in records:
               print(i)
       except Exception as e:
           print(f"Error selecting Patient: {e}")
```

doctordao.py

```
from entity.doctor import Doctor
class DoctorDao(Doctor):
    def __init__(self):
        super().__init__()
    def perform doctor_actions(self):
        while True:
            print("(Doctor) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE 5.SELECT
O.EXIT")
            ch = int(input("Enter choice: "))
            if ch == 1:
                self.create doctor table()
            elif ch == 2:
                print(self.add doctor())
            elif ch == 3:
                print(self.update doctor())
            elif ch == 4:
                print(self.delete doctor())
            elif ch == 5:
                self.select doctor()
            elif ch == 0:
               break
            else:
               print("Invalid choice")
    def create doctor table(self):
        try:
            create str = '''CREATE TABLE IF NOT EXISTS Doctor (
                doctorid INT PRIMARY KEY,
                firstname VARCHAR (255),
                lastname VARCHAR(255),
                specialization VARCHAR (255),
                contactnumber VARCHAR(15))'''
            self.open()
```

```
self.stmt.execute(create str)
            self.close()
            print('Doctor Table Created successfully.')
        except Exception as e:
            print(f"Error creating Doctor table: {e}")
    def add doctor(self):
        try:
            self.open()
            self.doctorid = int(input('Enter Doctor ID: '))
            self.firstname = input('Enter First Name: ')
            self.lastname = input('Enter Last Name: ')
            self.specialization = input('Specialization: ')
            self.contactnumber = input('Enter Number: ')
            data = [(self.doctorid, self.firstname, self.lastname,
self.specialization, self.contactnumber)]
            insert str = '''INSERT INTO Doctor(doctorid,
firstname, lastname, specialization, contactnumber)
                            VALUES(%s, %s, %s, %s, %s)'''
            self.stmt.executemany(insert str, data)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return f"Error adding doctor: {e}"
    def update doctor(self):
        try:
            self.open()
            doctorid = int(input('Input Doctor ID to be Updated: '))
            self.firstname = input('Enter First Name: ')
            self.lastname = input('Enter Last Name: ')
            self.specialization = input('Enter Specialization: ')
            self.contactnumber = input('Enter Phone Number: ')
            data = [(self.firstname, self.lastname, self.specialization,
self.contactnumber, doctorid)]
            update str = '''UPDATE Doctor SET firstName=%s, lastName=%s,
specialization=%s, contactnumber=%s
                            WHERE doctorid = %s'''
            self.stmt.executemany(update str, data)
            self.conn.commit()
            self.close()
           return True
        except Exception as e:
            return f"Error updating patient: {e}"
    def delete doctor(self):
        try:
            self.open()
            doctorid = int(input('Input Doctor ID to be Deleted: '))
            delete str = f'''DELETE FROM Doctor WHERE doctorid =
{doctorid}'''
            self.stmt.execute(delete str)
            self.conn.commit()
            self.close()
            return True
```

```
except Exception as e:
    return f"Error deleting doctor: {e}"

def select_doctor(self):
    try:
        self.open()
        select_str = '''SELECT * FROM Doctor'''
        self.stmt.execute(select_str)
        records= self.stmt.fetchall()
        self.close()
        print('Records In Doctor Table:')
        for i in records:
            print(i)

except Exception as e:
        print(f"Error selecting doctor: {e}")
```

appointmentdao.py

```
from entity.appointment import Appointment
class AppointmentDao(Appointment):
    def __init__ (self):
        super().__init__()
    def perform appointment actions(self):
        while True:
            print("(Appointment) 1.CREATE 2.INSERT 3.UPDATE 4.DELETE
5.SELECT 0.EXIT")
            ch = int(input("Enter choice: "))
            if ch == 1:
                self.create appointment table()
            elif ch == 2:
                print(self.add appointment())
            elif ch == 3:
                print(self.update_appointment())
            elif ch == 4:
                print(self.delete appointment())
            elif ch == 5:
               self.select appointment()
            elif ch == 0:
               break
            else:
                print("Invalid choice")
    def create appointment table (self):
        try:
            create str = '''CREATE TABLE IF NOT EXISTS Appointment (
                appointmentid INT PRIMARY KEY,
                patientid INT,
                doctorid INT,
                appointmentdate DATE,
                description VARCHAR (255),
                FOREIGN KEY (patientid) REFERENCES Patient (patientid) ON
DELETE CASCADE ON UPDATE CASCADE,
                FOREIGN KEY (doctorid) REFERENCES Doctor (doctorid) ON DELETE
CASCADE ON UPDATE CASCADE) '''
            self.open()
```

```
self.stmt.execute(create str)
            self.close()
            print('Appointment Table Created successfully.')
        except Exception as e:
            print(f"Error creating Appointment table: {e}")
    def add appointment(self):
        try:
            self.open()
            self.appointmentid = int(input('Enter Appointment ID: '))
            self.patientid = int(input('Enter Patient ID: '))
            self.doctorid = int(input('Enter Doctor ID: '))
            self.appointmentdate = input('Enter Appointment Date: ')
            self.description= input('Enter Description: ')
            data = [(self.appointmentid, self.patientid, self.doctorid,
self.appointmentdate, self.description)]
            insert str = '''INSERT INTO Appointment(appointmentid,
patientid, doctorid, appointmentdate, description)
                            VALUES(%s, %s, %s, %s, %s)'''
            self.stmt.executemany(insert str, data)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
            return f"Error adding Appointment: {e}"
    def update appointment(self):
        try:
            self.open()
            appointmentid = int(input('Input Appointment ID to be Updated:
'))
            self.patientid = int(input('Enter Patient ID: '))
            self.doctorid = int(input('Enter Doctor ID: '))
            self.appointmentdate = input('Enter Appointment Date: ')
            self.description = input('EnterDescription: ')
            data = [(self.patientid, self.doctorid, self.appointmentdate,
self.description, appointmentid)]
            update str = '''UPDATE Appointment SET patientid=%s,
doctorid=%s, appointmentdate=%s, description=%s
                            WHERE appointmentid = %s'''
            self.stmt.executemany(update str, data)
            self.conn.commit()
            self.close()
           return True
        except Exception as e:
            return f"Error updating Appointment: {e}"
    def delete appointment(self):
        try:
            self.open()
            appointmentid = int(input('Input Appointment ID to be Deleted:
'))
            delete str = f'''DELETE FROM Appointment WHERE appointmentid =
{appointmentid}'''
            self.stmt.execute(delete str)
            self.conn.commit()
            self.close()
            return True
        except Exception as e:
```

```
return f"Error deleting Appointment: {e}"

def select_appointment(self):
    try:
        select_str = '''SELECT * FROM Appointment'''
        self.open()
        self.stmt.execute(select_str)
        records = self.stmt.fetchall()
        self.close()
        print('Records In Appointment Table:')
        for i in records:
            print(i)
    except Exception as e:
        print(f"Error selecting Appointment: {e}")
```

ihospitalservice.py

```
from dao.appointmentdao import AppointmentDao
from dao.patientdao import PatientDao
from exception.patientnumbernotfound import PatientNumberNotFound
class HospitalServiceImpl(AppointmentDao, PatientDao):
#Get Appointment by ID
    def getAppointmentById(self, appointmentid):
       print('Enter Appointment ID to get Information: ')
       try:
          self.open()
          select str=f'''SELECT * FROM Appointment WHERE
appointmentid={appointmentid}'''
          self.stmt.execute(select str)
         records = self.stmt.fetchall()
         self.close()
          return records
       except Exception as e:
         print(e)
# Get Appointment for Patient
    def getAppointmentsForPatient(self, patientid):
       print('Enter Patient ID to get Information: ')
       try:
          self.open()
          select str = f'''SELECT * FROM Appointment WHERE
patientid={patientid}'''
          self.stmt.execute(select str)
          records = self.stmt.fetchall()
          self.close()
          return records
       except PatientNumberNotFound as e:
          return e
       except Exception as e:
         print(e)
#Get Appointment For Doctor
    def getAppointmentsForDoctor(self, doctorid):
```

```
print('Enter Appointment ID to get Information: ')
          self.open()
          select str = f'''SELECT * FROM Appointment WHERE
doctorid={doctorid}'''
          self.stmt.execute(select str)
          records = self.stmt.fetchall()
          self.close()
          return records
       except Exception as e:
         print(e)
    def cancelAppointment(self,appointmentid):
       print('Enter Appointment ID to cancel appointment: ')
       try:
          self.open()
          select str = f'''DELETE FROM Appointment WHERE
appointmentid={appointmentid}'''
         self.stmt.execute(select str)
         self.close()
         return True
       except Exception as e:
         print(e)
         return False
```

Exception Package

patientnumbernotfound.py

```
class PatientNumberNotFound(Exception):
    def __init__(self):
        super(). init (f'Patient ID not found')
```

Main Package

main.py

```
from util.DBConnUtil import DBConnection

def main():
    dbconnection = DBConnection()

    try:
        dbconnection.open()
        print("--Database Is Connected:--")
    except Exception as e:
        print(e)
```

```
try:
        print("=" * 30)
        print("Hospital Management System")
        print("=" * 30)
        print("Welcome to Hospital Management System!")
        hospital management system = HospitalServiceImpl()
        while True:
            print("1.Patient 2.Doctor 3.Appointment 0.EXIT")
            ch = int(input("Enter choice: "))
            if ch == 1:
                p = PatientDao()
                p.perform patient actions()
            elif ch == 2:
                d = DoctorDao()
                d.perform doctor actions()
            elif ch == 3:
                a = AppointmentDao()
                a.perform appointment actions()
            elif ch == 0:
                break
            else:
                print("Invalid choice")
        hospital management system=HospitalServiceImpl()
        while True:
            print("=" * 10)
            print("---MENU---")
            print("=" * 10)
            print("1.Get Appointment By ID\n2.Get Appointment For
Patient\n3.Get Appointment For Doctor\n4.Cancel Appointment\n0.EXIT")
            ch = int(input("Enter choice: "))
            if ch == 1:
print(hospital management system.getAppointmentById(int(input('Enter
Appointment ID to see the Appointment'))))
            elif ch == 2:
print(hospital management system.getAppointmentsForPatient(int(input('Enter
Patient ID of the Patient to see the Appointment: '))))
            elif ch == 3:
print(hospital management system.getAppointmentsForDoctor(int(input('Enter
Doctor ID of the Doctor to see the Appointment: '))))
            elif ch == 4:
print(hospital management system.cancelAppointment(int(input('Enter
Appointment ID to to cancel the Appointment: '))))
            elif ch == 0:
                hreak
            else:
                print("Invalid choice")
    except PatientNumberNotFound as e:
        print(e)
    finally:
        dbconnection.close()
        print("Thankyou for visiting Hospital Management System!")
```

```
print("--Connection Is Closed:--")

if __name__ == "__main__":
    main()
```

util Package

DBConnUtil.py

DBPropertyUtil.py

```
class PropertyUtil:
    connection_properties= None

    @staticmethod
    def getConnectionString():
        if PropertyUtil.connection_properties is None:
            host='localhost'
            database='hospital_db'
            user='root'
            password='Muskan20'

PropertyUtil.connection_properties={'host':host,'database':database,'user':user,'password':password}
            return PropertyUtil.connection_properties
```

Output Snippets







