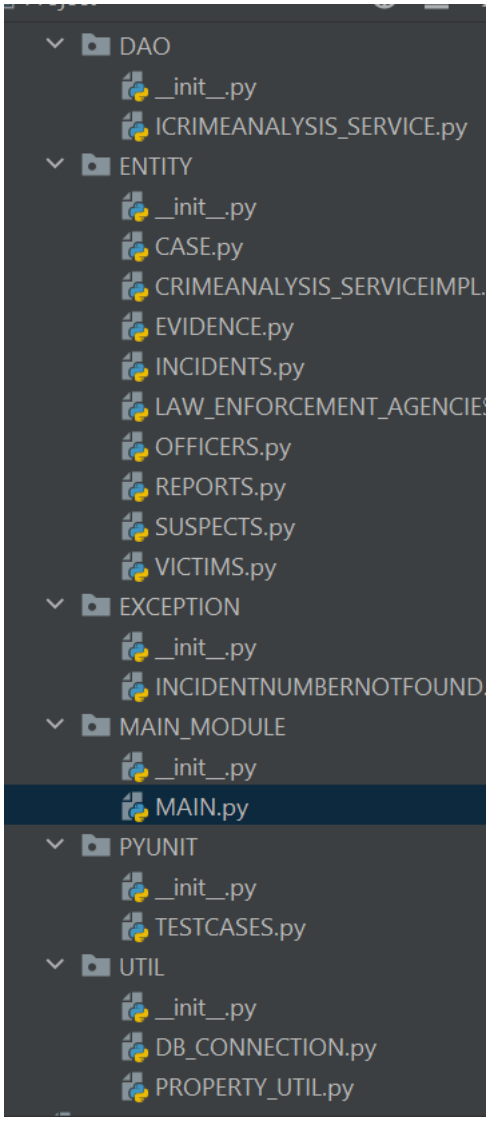
GAUTAM SHARMA

FILE STRUCTURE



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ENTITY

CASE.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Cases(DBConnection):
    def __init__(self, case_id=None, description=None, case_date=None,
status=None):
        self.case_id = case_id
        self.description = description
        self.case_date = case_date
        self.status = status

    def create_table(self):
        create_query = '''
            create table if not exists Cases(
            case_id int primary key,
            description varchar(150),
            case_date date,
            status varchar(30)
            )'''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Case table created successfully")
```

CRIMEANALYSIS_SERVICEIMPL.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection
from Case_Study.ENTITY.ICRIMEANALYSIS_SERVICE import
I_crime_analysis_service
from Case_Study.DAO.INCIDENTS import Incidents
from Case_Study.DAO.REPORTS import Reports
from Case_Study.DAO.CASE import Cases


class crime_analysis_service_impl(Incidents, Reports, Cases, DBConnection,
I_crime_analysis_service):
    def __init__(self):
        super(Incidents, self).__init__()

    def createIncident(self):
        incident = Incidents()
        incident.insert_into()

    def updateIncidentStatus(self):
        incident = Incidents()
        incident.update_table()

    def getIncidentsInDateRange(self):
        start_date = input("Enter the start date(yyyy-mm-dd): ")
        end_date = input("Enter the input date(yyyy-mm-dd): ")
        res = [incident for incident in Incidents.incidents if start_date
<= incident.incident_date <= end_date]
        for i in res:
```

```
            print(i)

    def searchIncidents(self):
        self.incident_id = int(input('Enter the incident id to search the
incident details: '))
        search_query = f'select * from Incidents where incident_id =
{self.incident_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(search_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Search successfully")

    def generateIncidentReport(self):
        self.incident_id = int(input("Enter the incident id to generate a
report: "))
        report_query = f'select * from Reports where incident_id =
{self.incident_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(report_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Reports generated successfully")

    def createCase(self):
        self.case_id = int(input("Enter the case id: "))
        self.description = input("Enter the description: ")
        self.case_date = input("Enter the case date: ")
        self.status = input("Enter the status: ")

        query = 'insert into Cases(case_id, description, case_date, status)
values(%s,%s,%s,%s)'
        data = [(self.case_id, self.description, self.case_date,
self.status)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.executemany(query, data)
        DBConnection.connection.commit()
        print("Created case successfully")

    def getCaseDetails(self):
        self.case_id = int(input("Enter the case Id to get details: "))
        get_query = f'select * from Cases where case_id={self.case_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(get_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Case details displayed successfully")

    def updateCaseDetails(self):
        self.case_id = int(input("Enter the case Id to update details: "))
        self.description = input("Enter the description: ")
        self.case_date = input("Enter the case date: ")
        self.status = input("Enter the status: ")
        update_query = f'update Cases set description=%s, case_date=%s,
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```
status=%s where case_id=%s'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query)
        print("Case updated successfully")

    def getAllCases(self):
        get_query = f'select * from Cases'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(get_query)
        data = stmt.fetchall()
        for i in data:
            print(i)



# obj = crime_analysis_service_impl()
# obj.generateIncidentReport()
```

EVIDENCE.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Evidence(DBConnection):
    def __init__(self, evidence_id=None, description=None, location=None,
incident_id=None):
        self.evidence_id = evidence_id
        self.description = description
        self.location = location
        self.incident_id = incident_id

    def create_table(self):
        create_query = '''
        create table if not exists Evidence(
        evidence_id int primary key,
        description varchar(150),
        location varchar(50),
        incident_id int
        )'''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Evidence table created successfully")

    def insert_into(self):
        self.evidence_id = int(input("Enter the evidence id: "))
        self.description = input("Enter the description: ")
        self.location = input("Enter the location: ")
        self.incident_id = input("Enter the incident id: ")

        insert_query = 'insert into Evidence(evidence_id, description,
location, incident_id) values(%s,%s,%s,%s)'
        data = [(self.evidence_id, self.description, self.location,
self.incident_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
```

```
        print("Values inserted successfully")

    def update_table(self):
        self.evidence_id = int(input("Enter the evidence id: "))
        self.description = input("Enter the description: ")
        self.location = input("Enter the location: ")
        self.incident_id = input("Enter the incident id: ")

        update_query = 'update Evidence set description=%s, location=%s,
incident_id=%s where evidence_id=%s'
        data = [(self.description, self.location, self.incident_id,
self.evidence_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query, data)
        DBConnection.connection.commit()
        print("Values updated successfully")

    def delete_table(self):
        self.evidence_id = int(input("Enter the evidence id to delete
values: "))
        delete_query = f'delete from Evidence where
evidence_id={self.evidence_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(delete_query)
        DBConnection.connection.commit()
        print("Values deleted successfully")

    def select_table(self):
        select_query = 'select * from Evidence'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Values displayed successfully")
```

INCIDENTS.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection
from Case_Study.EXCEPTION.INCIDENTNUMBERNOTFOUND import
IncidentNumberNotFoundException

class Incidents(DBConnection):
    incidents = []

    def __init__(self, incident_id=None, incident_type=None,
incident_date=None, location=None, description=None, status=None,
victim_id=None, suspect_id=None):
        self.incident_id = incident_id
        self.incident_type = incident_type
        self.incident_date = incident_date
        self.location = location
        self.description = description
        self.status = status
        self.victim_id = victim_id
        self.suspect_id = suspect_id
```

```
    def create_table(self):
        create_query = '''
            create table if not exists Incidents(
            incident_id int primary key,
            incident_type varchar(30),
            incident_date date,
            location varchar(30),
            description varchar(100),
            status varchar(30),
            victim_id int,
            suspect_id int
            )
        '''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Incidents table created successfully")

    def insert_into(self):
        self.incident_id = int(input("Enter the incident id: "))
        self.incident_type = input("Enter the incident type: ")
        self.incident_date = input("Enter the incident date: ")
        self.location = input("Enter the location: ")
        self.description = input("Enter the description: ")
        self.status = input("Enter the status: ")
        self.victim_id = int(input("Enter the victim id: "))
        self.suspect_id = int(input("Enter the suspect id: "))

        insert_query = 'insert into Incidents(incident_id, incident_type,
incident_date, location, description, status, victim_id, suspect_id)
values(%s,%s,%s,%s,%s,%s,%s,%s)'
        data = [(self.incident_id, self.incident_type, self.incident_date,
self.location, self.description, self.status, self.victim_id,
self.suspect_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
        print("Data inserted successfully")
        return 'Incident created successfully'

    def update_table(self):
        try:
            self.incident_id = int(input("Enter the incident id to update
the values: "))
            self.incident_type = input("Enter the incident type: ")
            self.incident_date = input("Enter the incident date: ")
            self.location = input("Enter the location: ")
            self.description = input("Enter the description: ")
            self.status = input("Enter the status: ")
            self.victim_id = int(input("Enter the victim id: "))
            self.suspect_id = int(input("Enter the suspect id: "))
            if not self.incident_exists(self.incident_id):
                raise IncidentNumberNotFoundException("Incident id not
found")

            update_query = 'update Incidents set incident_type=%s,
incident_date=%s, location=%s, description=%s, status=%s, victim_id=%s,
suspect_id=%s where incident_id=%s'
            data = [(self.incident_type, self.incident_date, self.location,
self.description, self.status, self.victim_id, self.suspect_id,
```

```
self.incident_id)]
            DBConnection.getConnection()
            stmt = DBConnection.connection.cursor()
            stmt.executemany(update_query, data)
            DBConnection.connection.commit()
            print("Updated successfully")
            return 'Values updated successfully'

        except IncidentNumberNotFoundException as e:
            print(e)
        except Exception as e:
            print(e)

    def delete_table(self):
        try:
            self.incident_id = int(input("Enter the incident id to delete
data: "))
            if not self.incident_exists(self.incident_id):
                raise IncidentNumberNotFoundException("Incident id not
found")
            delete_query = f'delete from Incidents where incident_id =
{self.incident_id}'
            DBConnection.getConnection()
            stmt = DBConnection.connection.cursor()
            stmt.execute(delete_query)
            DBConnection.connection.commit()
            print("Deleted successfully")

        except IncidentNumberNotFoundException as e:
            print(e)
        except Exception as e:
            print(e)

    def select_table(self):
        select_query = 'select * from Incidents'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            Incidents.incidents.append(i)
            print(i)
        Incidents.incidents = [list(i) for i in Incidents.incidents]
        print("Values displayed successfully")

    def incident_exists(self, incident_id):
        try:
            DBConnection.getConnection()
            stmt = DBConnection.connection.cursor()
            select_query = f'SELECT COUNT(*) FROM Incidents WHERE
incident_id = {incident_id}'
            stmt.execute(select_query)
            result = stmt.fetchone()
            if result and result[0] > 0:
                return True
            else:
                return False

        except Exception as e:
            print(f"Error checking incident existence: {e}")
            return False
```

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```
    def __str__(self):
        return """f'Incident ID: {self.incident_id}', f'Incident Type:
{self.incident_type}',f'Incident date: {self.incident_date}',
         f'Location: {self.location}', f'Description: {self.description}',
f'Status: {self.status}',
          f'Victim ID: {self.victim_id}', f'Suspect ID: {self.suspect_id}'
"""
```

LAW_ENFORCEMENT_AGENICES.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Law_Enforcement_Agencies(DBConnection):
    def __init__(self, agency_id=None, agency_name=None, jurisdiction=None,
phone_num=None, officer=None):
        self.agency_id = agency_id
        self.agency_name = agency_name
        self.jurisdiction = jurisdiction
        self.phone_num = phone_num
        self.officer = officer

    def create_table(self):
        create_query = '''
            create table Law_Enforcement_Agencies(
            agency_id int primary key,
            agency_name varchar(30),
            jurisdiction varchar(50),
            phone_num varchar(20),
            officer varchar(30)
        )'''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Law Enforcement Agencies table created successfully")

    def insert_into(self):
        self.agency_id = int(input("Enter the agency id: "))
        self.agency_name = input("Enter the agency name: ")
        self.jurisdiction = input("Enter the jurisdiction: ")
        self.phone_num = input("Enter the phone number: ")
        self.officer = input("Enter the officer: ")

        insert_query = 'insert into Law_Enforcement_Agencies(agency_id,
agency_name, jurisdiction, phone_num, officer) values(%s,%s,%s,%s,%s)'
        data = [(self.agency_id, self.agency_name, self.jurisdiction,
self.phone_num, self.officer)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
        print("Values inserted successfully")

    def update_table(self):
```

```
        self.agency_id = int(input("Enter the agency id to update the
values: "))
        self.agency_name = input("Enter the agency name: ")
        self.jurisdiction = input("Enter the jurisdiction: ")
        self.phone_num = input("Enter the phone number: ")
        self.officer = input("Enter the officer: ")

        update_query = 'update Law_Enforcements_Agencies set
agency_name=%s, jurisdiction=%s, phone_num=%s, officer=%s where
agency_id=%s'
        data = [(self.agency_name, self.jurisdiction, self.phone_num,
self.officer, self.agency_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query, data)
        DBConnection.connection.commit()
        print("Values updated successfully")

    def delete_table(self):
        self.agency_id = int(input("Enter the agency id to delete values:
"))
        delete_query = f'delete from Law_Enforcement_Agencies where
agency_id={self.agency_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(delete_query)
        DBConnection.connection.commit()
        print("Values deleted successfully")

    def select_table(self):
        select_query = 'select * from Law_Enforcement_Agencies'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Values displayed successfully")
```

OFFICERS.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Officers(DBConnection):
    def __init__(self, officer_id=None, first_name=None, last_name=None,
badge_no=None, officer_rank=None, phone_num=None, agency_id=None):
        self.officer_id = officer_id
        self.first_name = first_name
        self.last_name = last_name
        self.badge_no = badge_no
        self.officer_rank = officer_rank
        self.phone_num = phone_num
        self.agency_id = agency_id

    def create_table(self):
        create_query = ''' create table if not exists Officers(
            officer_id int primary key,
            first_name varchar(30),
```

```
            last_name varchar(30),
            badge_no varchar(10),
            officer_rank varchar(30),
            phone_num varchar(20),
            agency_id int
        )'''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Officers table created successfully")

    def insert_into(self):
        self.officer_id = int(input("Enter the officer id: "))
        self.first_name = input("Enter the first name: ")
        self.last_name = input("Enter the last name: ")
        self.badge_no = input("Enter the badge number: ")
        self.officer_rank = input("Enter the rank: ")
        self.phone_num = input("Enter the phone number: ")
        self.agency_id = input("Enter the agency id: ")

        insert_query = 'insert into Officers(officer_id, first_name,
last_name, badge_no, officer_rank, phone_num, agency_id)
values(%s,%s,%s,%s,%s,%s,%s)'
        data = [(self.officer_id, self.first_name, self.last_name,
self.badge_no, self.officer_rank, self.phone_num, self.agency_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
        print("Values inserted successfully")

    def update_table(self):
        self.officer_id = int(input("Enter the officer id to update values:
"))
        self.first_name = input("Enter the first name: ")
        self.last_name = input("Enter the last name: ")
        self.badge_no = input("Enter the badge number: ")
        self.officer_rank = input("Enter the rank: ")
        self.phone_num = input("Enter the phone number: ")
        self.agency_id = input("Enter the agency id: ")

        update_query = 'update Officers set first_name=%s, last_name=%s,
badge_no=%s, officer_rank=%s, phone_num=%s, agency_id=%s where
officer_id=%s'
        data = [(self.first_name, self.last_name, self.badge_no,
self.officer_rank, self.phone_num, self.agency_id, self.officer_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query, data)
        DBConnection.connection.commit()
        print("Values updated successfully")

    def delete_table(self):
        self.officer_id = int(input("Enter the officer id to delete values:
"))
        delete_query = f'delete from Officers where
officer_id={self.officer_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(delete_query)
        DBConnection.connection.commit()
```

```
        print("Values deleted successfully")

    def select_table(self):
        select_query = 'select * from Officers'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Values displayed successfully")
```

REPORTS.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Reports(DBConnection):
    def __init__(self, report_id=None, incident_id=None,
reporting_officer=None, report_date=None, report_details=None,
status=None):
        self.report_id = report_id
        self.incident_id = incident_id
        self.reporting_officer = reporting_officer
        self.report_date = report_date
        self.report_details = report_details
        self.status = status

    def create_table(self):
        create_query = '''
        create table if not exists Reports(
        report_id int primary key,
        incident_id int,
        reporting_officer varchar(30),
        report_date date,
        report_details varchar(150),
        status varchar(20)
        )'''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Reports table successfully created")

    def insert_into(self):
        self.report_id = int(input("Enter the report id: "))
        self.incident_id = input("Enter the incident id: ")
        self.reporting_officer = input("Enter the reporting officer: ")
        self.report_date = input("Enter the report date: ")
        self.report_details = input("Enter the report details: ")
        self.status = input("Enter the status: ")

        insert_query = 'insert into Reports(report_id, incident_id,
reporting_officer, report_date, report_details, status)
values(%s,%s,%s,%s,%s,%s)'
        data = [(self.report_id, self.incident_id, self.reporting_officer,
self.report_date, self.report_details, self.status)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
```

```
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
        print("Values inserted successfully")

    def update_table(self):
        self.report_id = int(input("Enter the report id: "))
        self.incident_id = input("Enter the incident id: ")
        self.reporting_officer = input("Enter the reporting officer: ")
        self.report_date = input("Enter the report date: ")
        self.report_details = input("Enter the report details: ")
        self.status = input("Enter the status: ")

        update_query = 'update Reports set incident_id=%s,
reporting_officer=%s, report_date=%s, report_details=%s, status=%s where
report_id=%s'
        data = [(self.incident_id, self.reporting_officer,
self.report_date, self.report_details, self.status, self.report_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query, data)
        DBConnection.connection.commit()
        print("Values updated successfully")

    def delete_table(self):
        self.report_id = int(input("Enter the report id to delete values:
"))
        delete_query = f'delete from Reports where
report_id={self.report_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(delete_query)
        DBConnection.connection.commit()
        print("Values deleted successfully")

    def select_table(self):
        select_query = 'select * from Reports'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Values displayed successfully")
```

SUSPECTS.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Suspects(DBConnection):
    def __init__(self, suspect_id=None, first_name=None, last_name=None,
dob=None, gender=None, address=None, phone_num=None):
        self.suspect_id = suspect_id
        self.first_name = first_name
        self.last_name = last_name
        self.dob = dob
        self.gender = gender
        self.address = address
        self.phone_num = phone_num
```

```
    def create_table(self):
        create_query = '''
            create table if not exists Suspects(
            suspect_id int primary key,
            first_name varchar(30),
            last_name varchar(30),
            dob date,
            gender char,
            address varchar(30),
            phone_num varchar(20))
            '''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Suspects table created successfully")

    def insert_into(self):
        self.suspect_id = int(input("Enter the suspect id: "))
        self.first_name = input("Enter the first name: ")
        self.last_name = input("Enter the last name: ")
        self.dob = input("Enter the date of birth: ")
        self.gender = input("Enter the gender: ")
        self.address = input("Enter the address: ")
        self.phone_num = input("Enter the phone number: ")

        insert_query = 'insert into Suspects(suspect_id, first_name,
last_name, dob, gender, address, phone_num) values(%s,%s,%s,%s,%s,%s,%s)'
        data = [(self.suspect_id, self.first_name, self.last_name,
self.dob, self.gender, self.address, self.phone_num)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
        print("Values inserted successfully")

    def update_table(self):
        self.suspect_id = int(input("Enter the suspect id to update the
values: "))
        self.first_name = input("Enter the first name: ")
        self.last_name = input("Enter the last name: ")
        self.dob = input("Enter the date of birth: ")
        self.gender = input("Enter the gender: ")
        self.address = input("Enter the address: ")
        self.phone_num = input("Enter the phone number: ")

        update_query = 'update Suspects set first_name=%s, last_name=%s,
dob=%s, gender=%s, address=%s, phone_num=%s where suspect_id=%s'
        data = [(self.first_name, self.last_name, self.dob, self.gender,
self.address, self.phone_num, self.suspect_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query, data)
        DBConnection.connection.commit()
        print("Values updated successfully")

    def delete_table(self):
        self.suspect_id = int(input("Enter the suspect id to delete values:
"))
        delete_query = f'delete from Suspects where
suspect_id={self.suspect_id}'
        DBConnection.getConnection()
```

```
        stmt = DBConnection.connection.cursor()
        stmt.execute(delete_query)
        DBConnection.connection.commit()
        print("Values deleted successfully")

    def select_table(self):
        select_query = 'select * from Suspects'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Values displayed successfully")
```

VICTIMS.PY

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection


class Victims(DBConnection):
    def __init__(self, victim_id=None, first_name=None, last_name=None,
dob=None, gender=None, address=None, phone_num=None):
        self.victim_id = victim_id
        self.first_name = first_name
        self.last_name = last_name
        self.dob = dob
        self.gender = gender
        self.address = address
        self.phone_num = phone_num

    def create_table(self):
        create_query = '''
            create table if not exists Victims(
            victim_id int primary key,
            first_name varchar(30),
            last_name varchar(30),
            dob date,
            gender char,
            address varchar(30),
            phone_num varchar(20))
            '''
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(create_query)
        print("Victims table created successfully")

    def insert_into(self):
        self.victim_id = int(input("Enter the victim id: "))
        self.first_name = input("Enter the first name: ")
        self.last_name = input("Enter the last name: ")
        self.dob = input("Enter the date of birth: ")
        self.gender = input("Enter the gender: ")
        self.address = input("Enter the address: ")
        self.phone_num = input("Enter the phone number: ")

        insert_query = 'insert into Victims(victim_id, first_name,
last_name, dob, gender, address, phone_num) values(%s,%s,%s,%s,%s,%s,%s)'
        data = [(self.victim_id, self.first_name, self.last_name, self.dob,
self.gender, self.address, self.phone_num)]
        DBConnection.getConnection()
```

```
        stmt = DBConnection.connection.cursor()
        stmt.executemany(insert_query, data)
        DBConnection.connection.commit()
        print("Values inserted successfully")

    def update_table(self):
        self.victim_id = int(input("Enter the victim id to update the
values: "))
        self.first_name = input("Enter the first name: ")
        self.last_name = input("Enter the last name: ")
        self.dob = input("Enter the date of birth: ")
        self.gender = input("Enter the gender: ")
        self.address = input("Enter the address: ")
        self.phone_num = input("Enter the phone number: ")

        update_query = 'update Victims set first_name=%s, last_name=%s,
dob=%s, gender=%s, address=%s, phone_num=%s where victim_id=%s'
        data = [(self.first_name, self.last_name, self.dob, self.gender,
self.address, self.phone_num, self.victim_id)]
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(update_query, data)
        DBConnection.connection.commit()
        print("Values updated successfully")

    def delete_table(self):
        self.victim_id = int(input("Enter the victim id to delete values:
"))
        delete_query = f'delete from Victims where
victim_id={self.victim_id}'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(delete_query)
        DBConnection.connection.commit()
        print("Values deleted successfully")

    def select_table(self):
        select_query = 'select * from Victims'
        DBConnection.getConnection()
        stmt = DBConnection.connection.cursor()
        stmt.execute(select_query)
        data = stmt.fetchall()
        for i in data:
            print(i)
        print("Values displayed successfully")
```

DAO

ICRIMEANALYSIS_SERVICE.PY

```
from abc import ABC, abstractmethod


class I_crime_analysis_service:

    @abstractmethod
    def createIncident(self):
        pass

    @abstractmethod
    def updateIncidentStatus(self):
```

```
        pass

    @abstractmethod
    def getIncidentsInDateRange(self):
        pass

    @abstractmethod
    def searchIncidents(self):
        pass

    @abstractmethod
    def generateIncidentReport(self):
        pass

    @abstractmethod
    def createCase(self):
        pass

    @abstractmethod
    def getCaseDetails(self):
        pass

    @abstractmethod
    def updateCaseDetails(self):
        pass

    @abstractmethod
    def getAllCases(self):
        pass
```

EXCEPTION

INCIDENTNUMBERNOTFOUND.PY

```
class IncidentNumberNotFoundException(Exception):
    def __init__(self, msg="Incident id not found"):
        self.msg = msg
        super().__init__(msg)
```

PYUNIT

TESTCASES.PY

```
import unittest
from Case_Study.DAO.INCIDENTS import Incidents


class MyTestCase(unittest.TestCase):
    def setUp(self):
        self.incident = Incidents()

    # testing whether an incident is created or not
    def test_incident(self):
        print("Create a new incident with incident id =5")
        result = self.incident.insert_into()
        self.assertEqual('Incident created successfully', result)

    # testing whether incident status updated or not
    def test_update(self):
        print("Updating the status of incident. Set status = Investigation
```

```
")
        result = self.incident.update_table()
        self.assertEqual('Values updated successfully', result)


if __name__ == '__main__':
    unittest.main()
```

UTIL

DB_CONNECTION.PY

```
import mysql.connector as sql
from mysql.connector import Error
from Case_Study.UTIL.PROPERTY_UTIL import propertyUtil

class DBConnection:
    connection = None

    @staticmethod
    def getConnection():
        if DBConnection.connection is None:
            try:
                connection_string = propertyUtil.getPropertyString()
                DBConnection.connection = sql.connect(**connection_string)

                if DBConnection.connection.is_connected():
                    print("Database connected successfully")

            except Error as e:
                print(f'Error : {e}')

        return DBConnection.connection
```

PROPERTY_UTIL.PY

```
class propertyUtil:

    @staticmethod
    def getPropertyString():
        connection_string = {
            'host': 'localhost',
            'database': 'crime_reporting_system',
            'user': 'root',
            'password': 'root'
        }

        return connection_string
```

MAIN_MODULE

MAIN

```
from Case_Study.UTIL.DB_CONNECTION import DBConnection
from Case_Study.DAO.INCIDENTS import Incidents
from Case_Study.DAO.VICTIMS import Victims
from Case_Study.DAO.SUSPECTS import Suspects
from Case_Study.DAO.LAW_ENFORCEMENT_AGENCIES import
```

```
Law_Enforcement_Agencies
from Case_Study.DAO.OFFICERS import Officers
from Case_Study.DAO.EVIDENCE import Evidence
from Case_Study.DAO.REPORTS import Reports
from Case_Study.DAO.CASE import Cases
from Case_Study.DAO.CRIMEANALYSIS_SERVICEIMPL import
crime_analysis_service_impl

try:
    connObj = DBConnection()
    con = connObj.getConnection()

    while True:
        incidentObj = Incidents()
        victimObj = Victims()
        suspectObj = Suspects()
        lawObj = Law_Enforcement_Agencies()
        officerObj = Officers()
        evidenceObj = Evidence()
        reportObj = Reports()
        serviceImplementObj = crime_analysis_service_impl()

        print("Select table to use functionalities")
        print("1.Incidents\n2.Victims\n3.Suspects\n4.Law Enforcement
Agencies\n5.Officers\n6.Evidence\n7.Reports\n8.crime analysis service
impl\n9.exit")
        ch = int(input("enter your choice:"))

        if ch == 1:
            while True:
                print("1.create Incidents\t2.insert Incidents\t3.update
incidents\n4.delete incidents\t5.select incidents\n6.Exit")
                choice = int(input("enter your choice:"))
                if choice == 1:
                    incidentObj.create_table()
                elif choice == 2:
                    incidentObj.insert_into()
                elif choice == 3:
                    incidentObj.update_table()
                elif choice == 4:
                    incidentObj.delete_table()
                elif choice == 5:
                    incidentObj.select_table()
                elif choice == 6:
                    print("exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 2:
            while True:
                print("1.create victims\t2.insert victims\t3.update
victims\n4.delete victims\t5.select victims\n6.Exit")
                choice = int(input("enter your choice:"))
                if choice == 1:
                    victimObj.create_table()
                elif choice == 2:
                    victimObj.insert_into()
                elif choice == 3:
                    victimObj.update_table()
                elif choice == 4:
```

```
                    victimObj.delete_table()
                elif choice == 5:
                    victimObj.select_table()
                elif choice == 6:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 3:
            while True:
                print("1.create suspects\t2.insert suspects\t3.update
suspects\n4.delete suspects\t5.select suspects\n6.Exit")
                choice = int(input("enter your choice:"))
                if choice == 1:
                    suspectObj.create_table()
                elif choice == 2:
                    suspectObj.insert_into()
                elif choice == 3:
                    suspectObj.update_table()
                elif choice == 4:
                    suspectObj.delete_table()
                elif choice == 5:
                     (suspectObj.select_table())
                elif choice == 6:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 4:
            while True:
                print("1.create law agencies\t2.insert law
agencies\t3.update law agencies\n4.delete law agencies\t5.select law
agencies\n6.Exit")
                choice = int(input("enter your choice:"))
                if choice == 1:
                    lawObj.create_table()
                elif choice == 2:
                    lawObj.insert_into()
                elif choice == 3:
                    lawObj.update_table()
                elif choice == 4:
                    lawObj.delete_table()
                elif choice == 5:
                    lawObj.select_table()
                elif choice == 6:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 5:
            while True:
                print("1.create officers\t2.insert officers\t3.update
officers\n4.delete officers\t5.select officers\n6.Exit")
                choice = int(input("enter your choice"))
                if choice == 1:
                    officerObj.create_table()
                elif choice == 2:
                    officerObj.insert_into()
```

```
                elif choice == 3:
                    officerObj.update_table()
                elif choice == 4:
                    officerObj.delete_table()
                elif choice == 5:
                    officerObj.select_table()
                elif choice == 6:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 6:
            while True:
                print("1.create evidence\t2.insert evidence\t3.update
evidence\n4.delete evidence\t5.select evidence\n6.Exit")
                choice = int(input("enter your choice"))
                if choice == 1:
                    evidenceObj.create_table()
                elif choice == 2:
                    evidenceObj.insert_into()
                elif choice == 3:
                    evidenceObj.update_table()
                elif choice == 4:
                    evidenceObj.delete_table()
                elif choice == 5:
                    evidenceObj.select_table()
                elif choice == 6:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")
        elif ch == 7:
            while True:
                print("1.create reports\t2.insert reports\t3.update
reports\n4.delete reports\t5.select reports\n6.Exit")
                choice = int(input("enter your choice"))
                if choice == 1:
                    reportObj.create_table()
                elif choice == 2:
                    reportObj.insert_into()
                elif choice == 3:
                    reportObj.update_table()
                elif choice == 4:
                    reportObj.delete_table()
                elif choice == 5:
                    reportObj.select_table()
                elif choice == 6:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 8:
            while True:
                print("1.create Incident\t2.update incident status\t3.get
incidents in date range officers\n4.search incidents\t5.generate incident
report\n6.create case\t7.get case details\t8.update case details\t9.get all
cases\t10.exit")
                choice = int(input("enter your choice"))
                if choice == 1:
```

```
                    serviceImplementObj.createIncident()
                elif choice == 2:
                    serviceImplementObj.updateIncidentStatus()
                elif choice == 3:
                    serviceImplementObj.getIncidentsInDateRange()
                elif choice == 4:
                    serviceImplementObj.searchIncidents()
                elif choice == 5:
                    serviceImplementObj.generateIncidentReport()
                elif choice == 6:
                    serviceImplementObj.createCase()
                elif choice == 7:
                    serviceImplementObj.getCaseDetails()
                elif choice == 8:
                    serviceImplementObj.updateCaseDetails()
                elif choice == 9:
                    serviceImplementObj.getAllCases()
                elif choice == 10:
                    print("Exited successfully")
                    break
                else:
                    print("Wrong choice")

        elif ch == 9:
            print("Exited successfully")
            break

        else:
            print("Wrong choice")

except Exception as e:
    print(f"Unhandled error: {e}")

finally:
    DBConnection.connection.close()
    print("Database connection closed")
```

GAUTAM SHARMA

OUTPUTS-

1) Creating and inserting in incident table.

```
Run:  MAIN
1.create Incidents  2.insert Incidents  3.update incidents
4.delete incidents  5.select incidents
6.Exit
enter your choice:2
Enter the incident id: 200
Enter the incident type: robbery
Enter the incident date: 2024-02-02
Enter the location: haryana
Enter the description: -122.22
Enter the status: open
Enter the victim id: 102
Enter the suspect id: 300
Data inserted successfully
```

2) Creating and inserting in victim table.

```
MAIN
Enter the victim id: 201
Enter the first name: Raj
Enter the last name: sheoran
Enter the date of birth: 2001-02-08
Enter the gender: M
Enter the address: new street brampton
Enter the phone number: 9292929182
Values inserted successfully
```

3) Inserting values in suspect table.

```
Run:  MAIN
Enter the suspect id: 301
Enter the first name: Gautam
Enter the last name: sharma
Enter the date of birth: 2001-05-08
Enter the gender: M
Enter the address: yamunanagar
Enter the phone number: 8930303003
Values inserted successfully
```

4) Creating and inserting values for law enforcement agencies table.

```
MAIN
Law Enforcement Agencies table created successfully
1.create law agencies   2.insert law agencies   3.update law agenc
4.delete law agencies   5.select law agencies
6.Exit
enter your choice:2
Enter the agency id: 400
Enter the agency name: zplus
Enter the jurisdiction: city A
Enter the phone number: 6662221111
Enter the officer: raman
```

5) Inserting values for officer table.

```
enter your choice2
Enter the officer id: 10002
Enter the first name: Gautam
Enter the last name: Kundra
Enter the badge number: 555
Enter the rank: sergeant
Enter the phone number: 0293023902
Enter the agency id: 401
Values inserted successfully
```

6) Inserting values for evidence table.

```
enter your choice2
Enter the evidence id: 500
Enter the description: theft
Enter the location: delhi
Enter the incident id: 109
Values inserted successfully
```

7) Inserting values for report table.

```
enter your choice2
Enter the report id: 600
Enter the incident id: 200
Enter the reporting officer: 10002
Enter the report date: 2020-02-01
Enter the report details: Incident report details for Case 200
Enter the status: finalized
Values inserted successfully
```

8) Inserting values for case table.

```
MAIN
Enter the case id: 700
Enter the description: robbery
Enter the case date: 2020-02-07
Enter the status: open
Created case successfully
```

9) Getting case details.

```
Enter the case Id to get details: 700
(700, 'robbery', datetime.date(2020, 2, 7), 'open')
Case details displayed successfully
```

10) Getting all case details.

```
enter your choice9
(700, 'robbery', datetime.date(2020, 2, 7), 'open')
(701, 'loot', datetime.date(2021, 9, 5), 'open')
```

11) Testcases-for creating incident.

```
MyTestCase › test_incident()
in TESTCASES.py
» Tests passed: 0 of 2 tests
Create a new incident with incident id =
Enter the incident id: 444
Enter the incident type: atm theft
Enter the incident date: 2023-09-12
Enter the location: uttarpradesh
Enter the description: atm money was stolen
Enter the status: open
Enter the victim id: 888
Enter the suspect id: 999
```

13) Testcases-for updating an incident.

GAUTAM SHARMA

```
TCASES.py ×
Tests passed: 1 of 2 tests
Updating the status of incident. Set status = Investigation
Enter the incident id to update the values: 444
Enter the incident type: fraud
Enter the incident date: 2023-12-12
Enter the location: bijnore
Enter the description: online scammer
Enter the status: closed
Enter the victim id: 126
Enter the suspect id: 321
ges  TODO  Python Console  Problems  Terminal  Services
```

```
Ran 2 tests in 172.600s

OK
Updated successfully

Process finished with exit code 0
```

14) Get incidence in range

```
Enter the start date(yyyy-mm-dd): 2001-01-01
Enter the end date(yyyy-mm-dd): 2023-01-01
(66, 'accident', datetime.date(2009, 8, 7), 'bihar', 'two cars hit each other', 'closed', 777, 666)
(102, 'theft', datetime.date(2020, 5, 6), 'gujrat', 'masked people robbed house', 'open', 10101, 300)
(104, 'rob', datetime.date(2020, 9, 2), 'haryana', 'man was robbed', 'closed', 201, 301)
(109, 'theft', datetime.date(2020, 2, 9), 'delhi', 'maar kutai', 'open', 88, 90)
(111, 'fight', datetime.date(2020, 9, 9), 'yamunanagar', 'people beating each other', 'open', 323, 221)
(200, 'bike accident', datetime.date(2008, 8, 6), 'tismba', 'two bikes hit each other', 'closed', 102, 300)
(444, 'bankloot', datetime.date(2020, 2, 20), 'jaipur', 'bank was looted', 'open', 126, 321)
(100001, 'loot', datetime.date(2020, 11, 11), 'up', 'loot happened', 'closed', 123, 345)
```

15) Generate incident report

```
Enter the incident id to generate a report: 200
(600, 200, '10002', datetime.date(2020, 2, 1), 'Incident report details for Case 200', 'finalized')
Reports generated successfully
```