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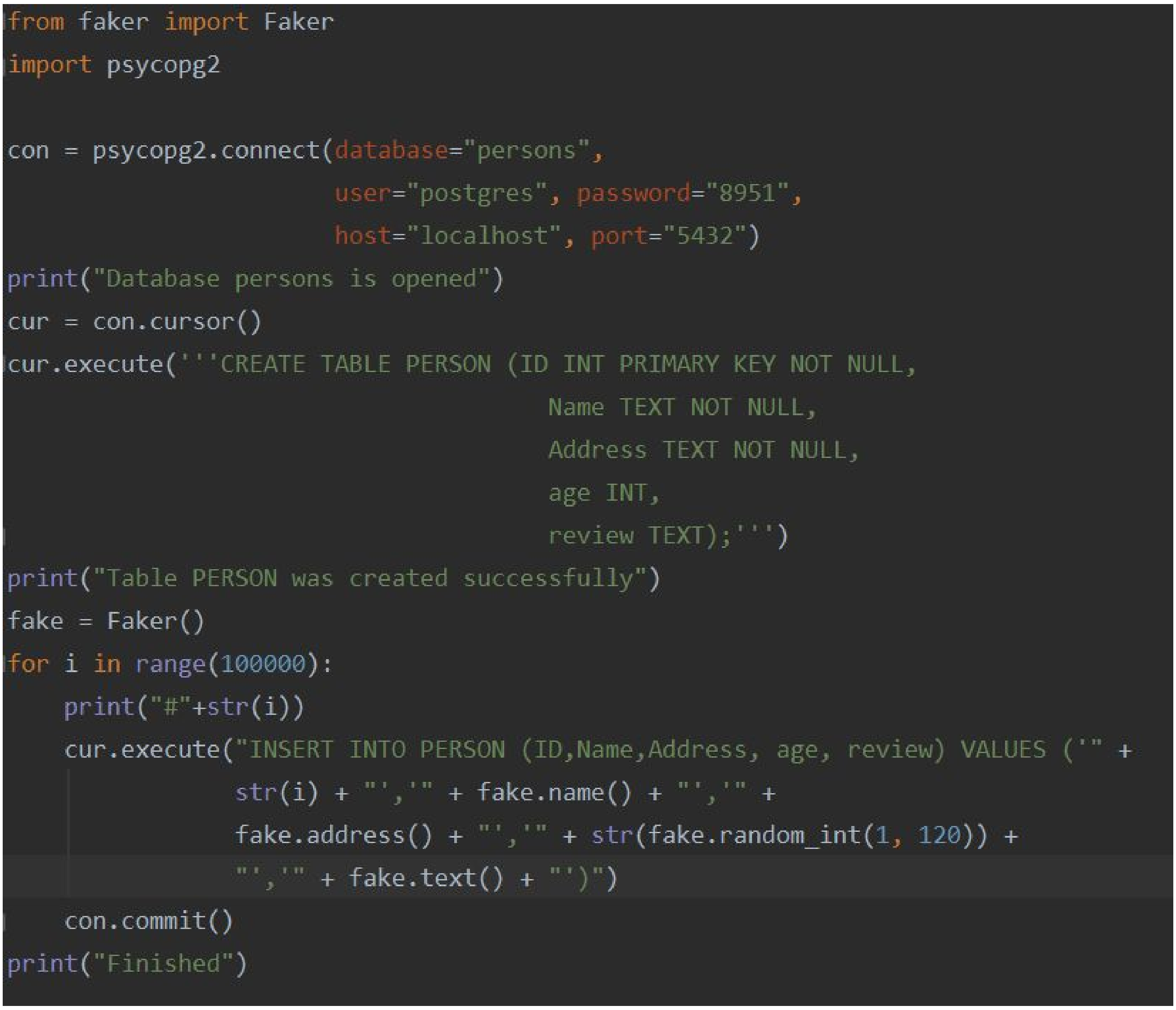
1. **Create data base** using python script createDataBase.py:



```
from faker import Faker
import psycopg2

con = psycopg2.connect(database="persons",
                       user="postgres", password="8951",
                       host="localhost", port="5432")
print("Database persons is opened")
cur = con.cursor()
cur.execute('''CREATE TABLE PERSON (ID INT PRIMARY KEY NOT NULL,
                                    Name TEXT NOT NULL,
                                    Address TEXT NOT NULL,
                                    age INT,
                                    review TEXT);''')
print("Table PERSON was created successfully")
fake = Faker()
for i in range(100000):
    print("#"+str(i))
    cur.execute("INSERT INTO PERSON (ID,Name,Address, age, review) VALUES ('" +
                str(i) + "','" + fake.name() + "','" +
                fake.address() + "','" + str(fake.random_int(1, 120)) +
                "','" + fake.text() + "')")
    con.commit()
print("Finished")
```

2. **Execute the queries and see the results:**

   a. **Query:** EXPLAIN ANALYZE SELECT * FROM person;
      Result: Seq Scan on person (cost=0.00..**4090.00**, ...)

   b. **Query:** EXPLAIN ANALYZE SELECT * FROM person
      WHERE id>50000 and id<60500;
      Result: Scan using person_pkey on person (cost=0.29..**666.28**, ...)
      (it is already have btree as it was initialized as index)

   c. **Query:** EXPLAIN ANALYZE SELECT * FROM person
      WHERE age=50;
      Result: Seq Scan on person (cost=0.00..**4340.00**, ...)

3. **Create single-column b-tree indexes on table using id and see the result:**
   Query: CREATE INDEX id_index
   ON public.person USING btree(age);
   Query: EXPLAIN ANALYZE SELECT * FROM person
   WHERE id>50000 and id<60500;
   Result: Index Scan using id_index on person (cost=0.29..**666.28**, ...)

4. **Create single-column hash indexes on table using age and see the result:**

   Query: CREATE INDEX age_index
   ON public.person USING hash(age);
   Query: EXPLAIN ANALYZE SELECT * FROM person
   WHERE age=50;
   Result: Index Scan using age_index on person (cost=46.25..**2573.54**, ...)