SC3020 Database Systems Principles
Project 2

GitHub | Report | Dataset

Connect to Database

This project needs to connect to PostgreSQL database. If you have already set up the database with TPC-H, you can directly click the `Connect` button. Otherwise, you need to click the `Load Data` button, it will download and load the data automatically from Hugging Face. It will take a while as the data is a bit large.

Host	Port	Database	Username	Password
localhost	5432	mydb	sc3020	••••••

Connect | Load Data

Status

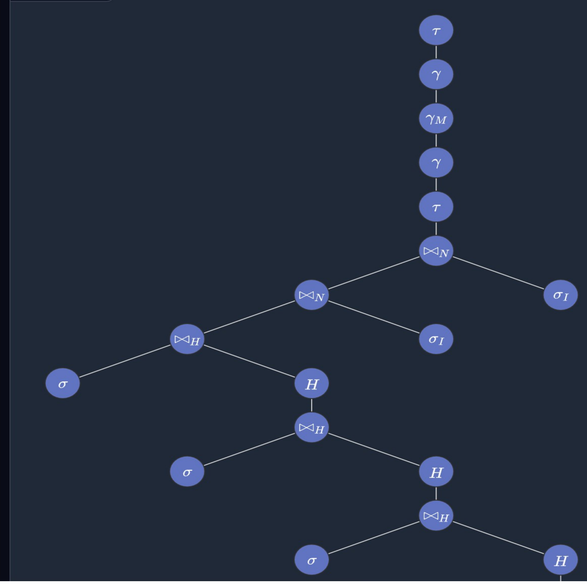

```
{
  "status": "Connected",
  "host": "localhost:5432",
  "dbname": "mydb",
  "user": "sc3020"
}
```


a)

Query

```
SELECT
    n_name,
    SUM(l_extendedprice * (1 - l_discount)) AS revenue
FROM
    customer,
    orders,
    lineitem,
    supplier,
    nation,
    region
WHERE
    c_custkey = o_custkey
    AND l_orderkey = o_orderkey
    AND l_suppkey = s_suppkey
    AND c_nationkey = s_nationkey
    AND s_nationkey = n_nationkey
    AND n_regionkey = r_regionkey
    AND r_name = 'ASIA'
    AND o_orderdate >= '1994-01-01'
    AND o_orderdate < '1995-01-01'
    AND c_acctbal > 10
    AND s_acctbal > 20
GROUP BY
    n_name
ORDER BY
    revenue DESC;
```

Query Plan



b)

Estimate Startup Cost: 811420.33

Estimate Total Cost: 1429613.95

What if change scan to ... : Default

What if change join to ... : Default

Explain

Step 1: Perform `Parallel Seq Scan on lineitem`

Step 2: Perform `Seq Scan on supplier` and `filtering` on `(s_acctbal > '20'::numeric)`

Step 3: Perform `Seq Scan on nation`

Step 4: Perform `Seq Scan on region` and `filtering` on `(r_name = 'ASIA'::bpchar)`

Step 5: Perform `Hash`

Step 6: Perform `Hash Join` and do `Hash` with condition on `(nation.n_regionkey = region.r_regionkey)`

Step 7: Perform `Hash`

Step 8: Perform `Hash Join` and do `Hash` with condition on `(supplier.s_nationkey = nation.n_nationkey)`

c)

Result (Top 100 rows)

n_name	revenue
INDONESIA	45725603.5903
VIETNAM	45448434.1933
CHINA	42484738.5357
INDIA	42390691.0550
JAPAN	37556124.1326

Logs


```
{
  "status": "Success",
  "message": "Returned 5 rows",
  "execution_time": "2.985 seconds"
}
```


d)