Code:

Employee (empname, street, city)
create table Employee(empname varchar(30), street varchar(40), city varchar(15));

Works (empname, compname, salary)
create table Works(empname varchar(30), compname varchar(10), salary int);

Company (compname, city)
create table Company(compname varchar(10), city varchar(15));

Manager (empname, managername)
create table Manager(empname varchar(30), managername varchar(15));

Inserting data
insert into Employee(empname, street, city) values("kannan", "main road", "hydrabad");

- Find the name, street address, and cities of residence of all employees who work for FBC and earn more than $10,000.

select * from Employee where empname in(select empname from Works where compname='FBC' and salary>=10000);

EMPNAME	STREET	CITY
sunil	east	chennai

- Find all employees who live in the same cities.

select city, count(empname) from Employee group by city;

CITY	COUNT(EMPNAME)
chennai	1
mumbai	2
coimbatore	1
banglore	1
madurai	1

5 rows returned in 0.06 seconds

- Find the company with the smallest pay roll

select min(count(empname)) from Works group by compname order by count(empname) asc;

MIN(COUNT(EMPNAME))
1

1 rows returned in 0.02 seconds

- Find the average salary for all employees.

select avg(salary) from Works;

AVG(SALARY)
13333.333333333333333333333333333333333

1 rows returned in 0.03 seconds CSV Ex

- Find the Employee who receives the lowest pay.

select * from Works where salary in (select min(salary) from Works);

EMPNAME	COMPNAME	SALARY
sunil	FBC	11000

1 rows returned in 0.02 seconds CSV I

- Sort the employee names according to their salary.

select * from Works order by salary desc;

Results Explain Describe Saved SQL History

EMPNAME	COMPNAME	SALARY
prakash	ABC	15000
arun	BBC	14000
siva	CCC	14000
mahindran	BCC	13000
kumar	KFC	13000
sunil	FBC	11000

6 rows returned in 0.00 seconds CSV Export

- Find the Employee name that who works under same manager.

select count(empname) from Manager group by managername;

Results Explain Describe Saved SQL History

COUNT(EMPNAME)
2
2
2

3 rows returned in 0.01 seconds CSV Export

- Insert a new employee to a database, and update the table.

insert into Employee(empname, street, city) values('Hema', 'parki Road', 'mumbai');

```
1 row(s) inserted.
```

- Display the average salary of all employees.

select avg(salary) from Works;

AVG(SALARY)
13333.333333333333333333333333333333333

1 rows returned in 0.03 seconds CSV Ex

- Find the employee details that are working in the same city and same manager.

select e.empname, e.city, m.managername, c.city from Employee e join Manager m on e.empname = m.empname join Company c on c.city = e.city;

Results Explain Describe Saved SQL History

EMPNAME	CITY	MANAGERNAME	CITY
sunil	chennai	naveen	chennai
kumar	coimbatore	naveen	coimbatore
arun	madurai	vijay	madurai
prakash	banglore	vijay	banglore
siva	mumbai	vishnu	mumbai
mahindran	mumbai	vishnu	mumbai
siva	mumbai	vishnu	mumbai
mahindran	mumbai	vishnu	mumbai

8 rows returned in 0.39 seconds CSV Export

- Rank the employee as per their salary.

select empname, salary from Works order by salary;

Results Explain Describe Saved SQL History

EMPNAME	SALARY
sunil	11000
mahindran	13000
kumar	13000
siva	14000
arun	14000
prakash	15000

6 rows returned in 0.00 seconds CSV Export

• Give the names of the employees living in the same city where their company is located.

select e.empname, e.city, c.compname, c.city from Employee e join Works w on e.empname = w.empname join Company c on w.compname = c.compname and e.city = c.city;

Results Explain Describe Saved SQL History

EMPNAME	CITY	COMPNAME	CITY
sunil	chennai	FBC	chennai
kumar	coimbatore	KFC	coimbatore
arun	madurai	BBC	madurai
prakash	banglore	ABC	banglore
mahindran	mumbai	BCC	mumbai
siva	mumbai	CCC	mumbai

6 rows returned in 0.00 seconds CSV Export

• Give the name of manager and salary of employee SUNIL.

select m.empname, w.salary, m.managername from Manager m join Works w on w.empname = m.empname where m.empname = 'Sunil';

Results Explain Describe Saved SQL History

EMPNAME	SALARY	MANAGERNAME
arun	14000	vijay

1 rows returned in 0.02 seconds CSV Export

Result:

Code:

Roll-Up

```
select    sum("SALES_FACT"."DOLLAR_SOLD") as "DOLLAR_SOLD",
          "ITEM"."ITEM_NAME" as "ITEM_NAME"
 from     "SALES_FACT" "SALES_FACT",
          "LOCATION" "LOCATION",
          "BRANCH" "BRANCH",
          "ITEM" "ITEM",
          "TIME" "TIME"
 where    "ITEM"."ITEM_KEY"="SALES_FACT"."ITEM_KEY"
 and      "SALES_FACT"."BRANCH_KEY"="BRANCH"."BRANCH_KEY"
 and      "SALES_FACT"."LOCATION_KEY"="LOCATION"."LOCATION_KEY"
 and      "SALES_FACT"."TIME_KEY"="TIME"."TIME_KEY"
group by ITEM.ITEM_NAME
```

DOLLAR_SOLD	ITEM_NAME
27000	Washing Machine
55000	TV

2 rows returned in 0.00 seconds CSV Export

Drill_Down

```
select    "SALES_FACT"."DOLLAR_SOLD" as "DOLLAR_SOLD",
          "ITEM"."ITEM_NAME" as "ITEM_NAME",
          "TIME"."YEAR" as "YEAR",
          "BRANCH"."BRANCH_NAME" as "BRANCH_NAME",
          "LOCATION"."CITY" as "CITY"
 from     "SALES_FACT" "SALES_FACT",
          "LOCATION" "LOCATION",
          "BRANCH" "BRANCH",
          "ITEM" "ITEM",
          "TIME" "TIME"
 where    "ITEM"."ITEM_KEY"="SALES_FACT"."ITEM_KEY"
 and      "SALES_FACT"."BRANCH_KEY"="BRANCH"."BRANCH_KEY"
 and      "SALES_FACT"."LOCATION_KEY"="LOCATION"."LOCATION_KEY"
 and      "SALES_FACT"."TIME_KEY"="TIME"."TIME_KEY"
```

DOLLAR_SOLD	ITEM_NAME	YEAR	BRANCH_NAME	CITY
40000	TV	1997	T Nagar	Madurai
15000	TV	2012	Anna Nagar	Madurai
2000	Washing Machine	2017	T Nagar	Sivakasi
25000	Washing Machine	2017	KK Nagar	Madurai

4 rows returned in 0.00 seconds CSV Export

Slice

```
select   "ITEM"."ITEM_NAME" as "ITEM_NAME",
         "TIME"."YEAR" as "YEAR",
         "SALES_FACT"."UNITS_SOLD" as "UNITS_SOLD"
from     "SALES_FACT" "SALES_FACT",
         "LOCATION" "LOCATION",
         "BRANCH" "BRANCH",
         "ITEM" "ITEM",
         "TIME" "TIME"
where    "ITEM"."ITEM_KEY"="SALES_FACT"."ITEM_KEY"
and      "SALES_FACT"."BRANCH_KEY"="BRANCH"."BRANCH_KEY"
and      "SALES_FACT"."LOCATION_KEY"="LOCATION"."LOCATION_KEY"
and      "SALES_FACT"."TIME_KEY"="TIME"."TIME_KEY"
and    UNITS_SOLD=1;
```

ITEM_NAME	YEAR	UNITS_SOLD
TV	2012	1
Washing Machine	2017	1

2 rows returned in 0.02 seconds CSV Export

Dice

```
select   "ITEM"."ITEM_NAME" as "ITEM_NAME",
         "TIME"."YEAR" as "YEAR",
         "SALES_FACT"."UNITS_SOLD" as "UNITS_SOLD"
from     "SALES_FACT" "SALES_FACT",
         "LOCATION" "LOCATION",
         "BRANCH" "BRANCH",
         "ITEM" "ITEM",
         "TIME" "TIME"
where    "ITEM"."ITEM_KEY"="SALES_FACT"."ITEM_KEY"
and      "SALES_FACT"."BRANCH_KEY"="BRANCH"."BRANCH_KEY"
and      "SALES_FACT"."LOCATION_KEY"="LOCATION"."LOCATION_KEY"
and      "SALES_FACT"."TIME_KEY"="TIME"."TIME_KEY"
and    UNITS_SOLD=1
and    YEAR=2017;
```

ITEM_NAME	YEAR	UNITS_SOLD
Washing Machine	2017	1

1 rows returned in 0.00 seconds CSV Export

Pivot

```
select   "ITEM"."ITEM_NAME" as "ITEM_NAME",
         "TIME"."YEAR" as "YEAR",
         "SALES_FACT"."UNITS_SOLD" as "UNITS_SOLD",
         "BRANCH"."BRANCH_NAME" as "BRANCH_NAME",
         "LOCATION"."CITY" as "CITY"
from     "SALES_FACT" "SALES_FACT",
         "LOCATION" "LOCATION",
         "BRANCH" "BRANCH",
         "ITEM" "ITEM",
         "TIME" "TIME"
where    "ITEM"."ITEM_KEY"="SALES_FACT"."ITEM_KEY"
and      "SALES_FACT"."BRANCH_KEY"="BRANCH"."BRANCH_KEY"
and      "SALES_FACT"."LOCATION_KEY"="LOCATION"."LOCATION_KEY"
and      "SALES_FACT"."TIME_KEY"="TIME"."TIME_KEY"
```

ITEM_NAME	YEAR	UNITS_SOLD	BRANCH_NAME	CITY
TV	1997	2	T Nagar	Madurai
TV	2012	1	Anna Nagar	Madurai
Washing Machine	2017	1	T Nagar	Sivakasi
Washing Machine	2017	3	KK Nagar	Madurai

row(s) 1 - 4 of 4

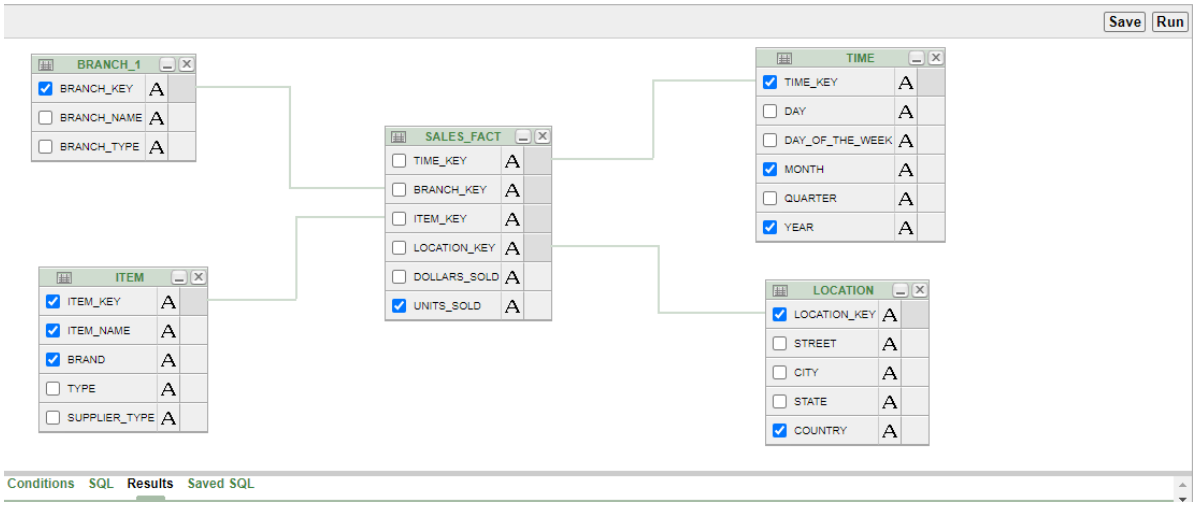
Download

Result:

CODE:

Star Schema:

```
create table time(time_key varchar(45) primary key, day varchar(45), day_of_the_week varchar(45),month varchar(45),quarter varchar(45),year varchar(45));
insert into time(time_key, day, day_of_the_week,month,year) values ('t1','12', 'monday', 'may','1997');
insert into time(time_key, day, day_of_the_week,month,year) values ('t2','11', 'sunday', 'june','1998');
select * from time;

create table branch_1(branch_key varchar(45) primary key, branch_name varchar(45), branch_type varchar(45));
insert into  branch_1(branch_key, branch_name, branch_type) values ('b1','maduraieast', 'wholesale');
insert into  branch_1(branch_key, branch_name, branch_type) values ('b2','maduraiwest', 'retail');
select * from branch_1;
drop table branch_1;

create table item(item_key varchar(45) primary key, item_name varchar(45), brand varchar(45),type varchar(45),supplier_type varchar(45));
insert into item(item_key, item_name, brand,type,supplier_type ) values ('i1','bottle', 'sony', 'plastic','factory');
insert into item(item_key,item_name,brand,type,supplier_type ) values ('i2','tv', 'samsung', 'electronic','dealer');

select * from time;

create table location(location_key varchar(45) primary key, street varchar(45), city_key varchar(45),state varchar(45),country varchar(45));
insert into location(location_key, street, city,state,country) values ('l1','a_street', 'madurai', 'tamilnadu','india');
insert into location(location_key, street, city,state,country) values ('l2','b_street', 'guntur', 'andra','india');
select * from location;

select * from time;

create table sales_fact(time_key varchar(45), branch_key varchar(45) , item_key varchar(45),location_key varchar(45));
```



Snowflake Schema

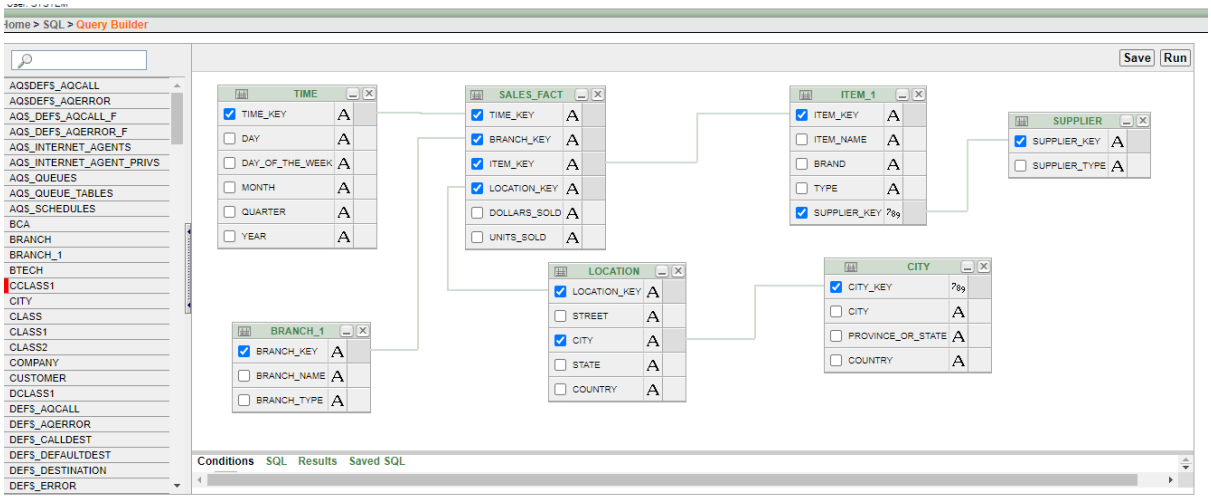
create table time(time_key varchar(45) primary key, day varchar(45), day_of_the_week varchar(45),month varchar(45),quarter varchar(45),year varchar(45));
insert into time(time_key, day, day_of_the_week,month,year) values ('t1','12', 'monday', 'may','1997');
insert into time(time_key, day, day_of_the_week,month,year) values ('t2','11', 'sunday', 'june','1998');
select * from time;

create table branch_1(branch_key varchar(45) primary key, branch_name varchar(45), branch_type varchar(45));
insert into branch_1(branch_key, branch_name, branch_type) values ('b1','maduraieast', 'wholesale');
insert into branch_1(branch_key, branch_name, branch_type) values ('b2','maduraiwest', 'retail');
select * from branch_1;
drop table branch_1;

reate table supplier(supplier_key varchar(45) primary key, supplier_type varchar(45));
insert into supplier(supplier_key,supplier_type)values("s1","wholesale");
insert into supplier(supplier_key,supplier_type)values("s2","retail");
select * from supplier;
drop table supplier;

```
create table city(city_key varchar(45) primary key, city varchar(45), province_or_state varchar(45),country varchar(45));
insert into city(city_key ,city,province_or_state,country)values("c1","madurai","tamilnadu","india");
insert into city(city_key ,city,province_or_state,country)values("c2","washington","colombia","usa");

create table shipping_fact(item_key varchar(45) , time_key varchar(45), shipper_key varchar(45),from_location varchar(45),to_location varchar(45),dollers_cost varchar(45),units_shipped varchar(45));

create table shipper(shipper_key varchar(45), shipper_name varchar(45), location_key varchar(45),shipper_type varchar(45));
insert into shipper(shipper_key,shipper_name,location_key,shipper_type)values("s1","sony","l1","wholesale");
insert into shipper(shipper_key,shipper_name,location_key,shipper_type)values("s2","samsung","l2","retail");

create table location1(location_key varchar(45) primary key, street varchar(45), city_key varchar(45));
insert into location1(location_key,street,city_key)values("l1","a_street","madurai");
insert into location1(location_key,street,city_key)values("l2","b_street","washington");

create table sales_fact(time_key varchar(45), branch_key varchar(45) , item_key varchar(45),location_key varchar(45),doller_sold varchar(45),unit_sold varchar(45));
insert into sales_fact(time_key,branch_key,item_key,location_key,doller_sold,unit_sold)values("t1","b1","i1","l1","120","7");
insert into sales_fact(time_key,branch_key,item_key,location_key,doller_sold,unit_sold)values("t2","b2","i2","l2","240","9");

create table item_1(item_key varchar(45) primary key, item_name varchar(45), brand varchar(45),type varchar(45),supplier_key varchar(45));
insert into item_1(item_key ,item_name,brand,type,supplier_key)values("i1","tv","sony","led","s1");
insert into item_1(item_key ,item_name,brand,type,supplier_key)values("i2","washingmachine","lg","wash+drying","s2");

create table location(location_key varchar(45) primary key, street varchar(45), city_key varchar(45),state varchar(45),country varchar(45));
```

insert into location(location_key, street, city,state,country) values ('l1','a_street', 'madurai', 'tamilnadu','india');
insert into location(location_key, street, city,state,country) values ('l2','b_street', 'guntur', 'andra','india');
select * from location;



Fact constellation schema

create table timef(time_key number primary key, day number, day_of_week varchar(20), month number, quarter number, year number)

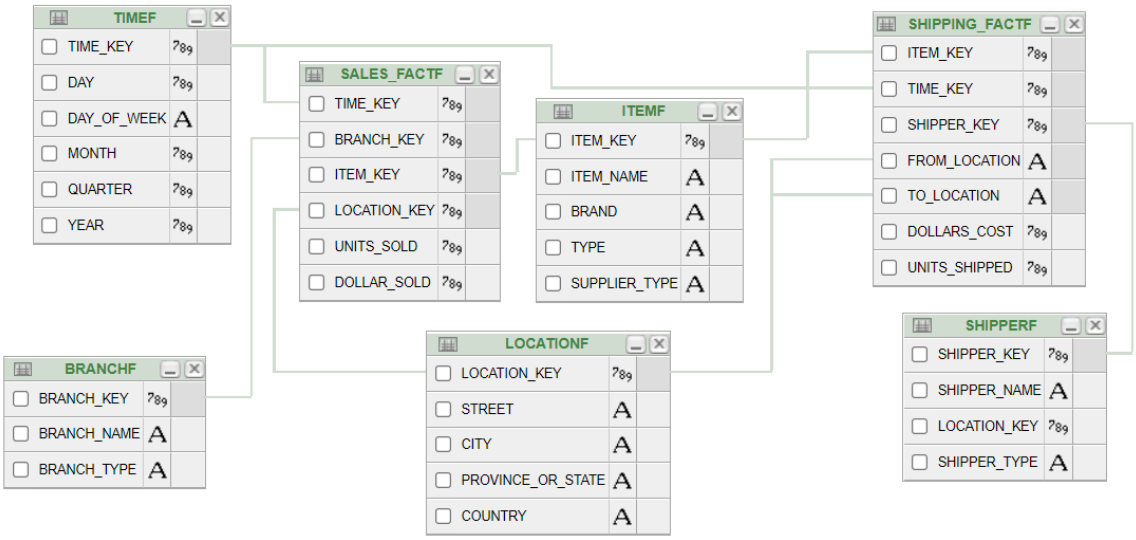
create table branchf(branch_key number primary key,branch_name varchar(20),branch_type varchar(20))

create table itemf(item_key number primary key, item_name varchar(20), brand varchar(20),type varchar(20),supplier_type varchar(20))

create table locationf(location_key number primary key, street varchar(20),city varchar(20), province_or_state varchar(20),country varchar(20))
create table sales_factf(time_key number, FOREIGN KEY(time_key) REFERENCES timef(time_key), branch_key number, FOREIGN KEY(branch_key)REFERENCES branchf(branch_key), item_key number, FOREIGN KEY(item_key)REFERENCES itemf(item_key), location_key number, FOREIGN KEY(location_key) REFERENCES locationf(location_key), units_sold number, dollar_sold number);

create table shipping_factf(item_key number, FOREIGN KEY(item_key) REFERENCES itemf(item_key), time_key number, FOREIGN KEY(time_key) REFERENCES timef(time_key),shipper_key number , FOREIGN KEY(shipper_key) REFERENCES shipperf(shipper_key), from_location varchar(20), to_location varchar(20), dollars_cost number, units_shipped number)

create table shipperf(shipper_key number primary key, shipper_name varchar(20), location_key number, FOREIGN KEY(location_key) REFERENCES locationf(location_key),shipper_type varchar(20))


TIMEF
TIME_KEY
DAY
DAY_OF_WEEK
MONTH
QUARTER
YEAR
SALES_FACTF
TIME_KEY
BRANCH_KEY
ITEM_KEY
LOCATION_KEY
UNITS_SOLD
DOLLAR_SOLD
ITEMF
ITEM_KEY
ITEM_NAME
BRAND
TYPE
SUPPLIER_TYPE
SHIPPING_FACTF
ITEM_KEY
TIME_KEY
SHIPPER_KEY
FROM_LOCATION
TO_LOCATION
DOLLARS_COST
UNITS_SHIPPED
BRANCHF
BRANCH_KEY
BRANCH_NAME
BRANCH_TYPE
LOCATIONF
LOCATION_KEY
STREET
CITY
PROVINCE_OR_STATE
COUNTRY
SHIPPERF
SHIPPER_KEY
SHIPPER_NAME
LOCATION_KEY
SHIPPER_TYPE