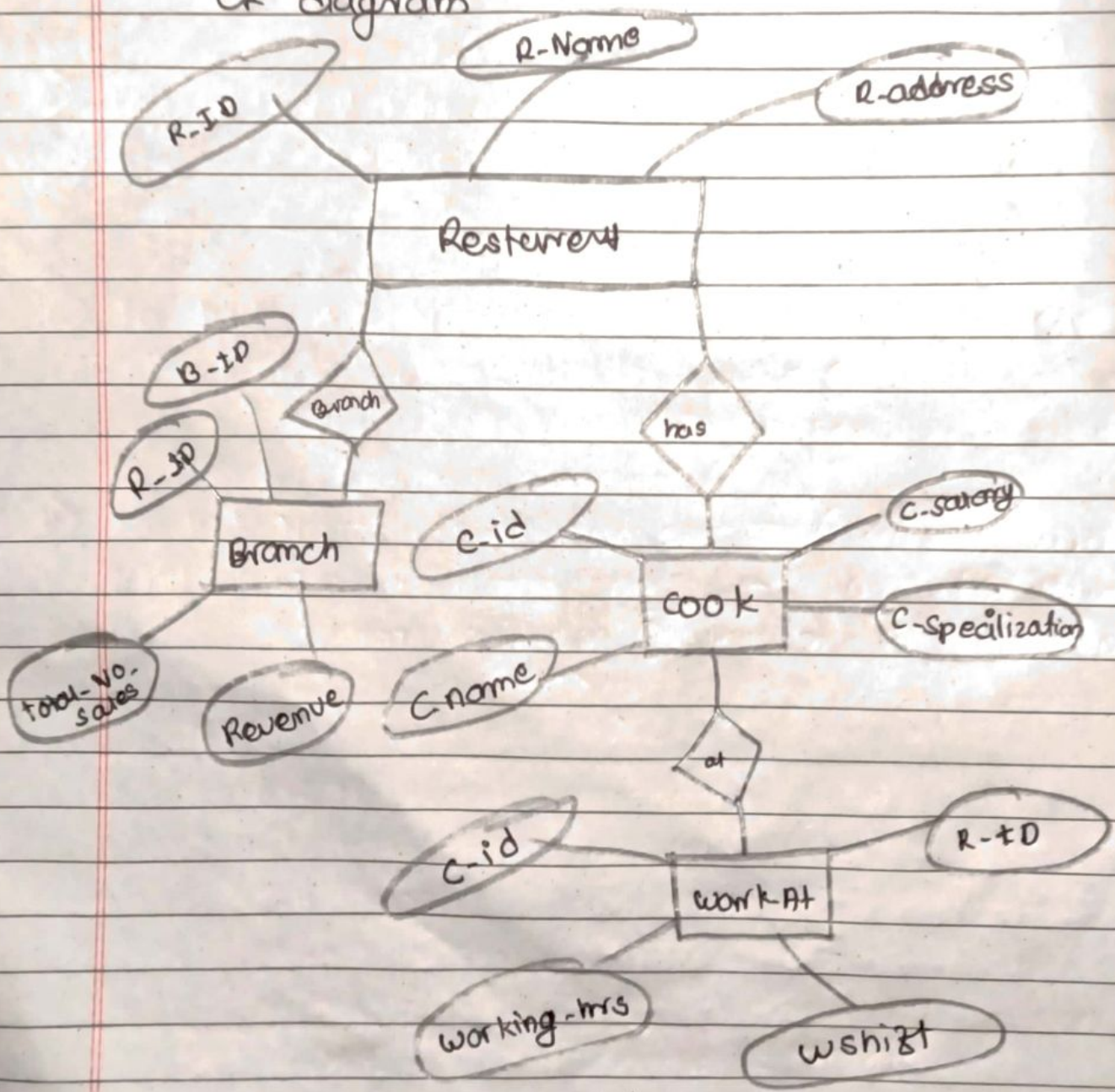
Assignment: 4

Q No: 1

Design an ER diagram from above schema and write SQL statement for following queries

ER diagram



a) Select the name and address of restaurant wher working shift is "day".

```
Select R.R_Name, R.R_address
from Resturent R
Join Works_At W ON R.R_ID = W.R_ID
where w.wshift = 'day';
```

b) select the name of all cook having specialization 'Italian';

```
Select C.C_Name from Cook C
where C.C_specialization = 'Italian';
```

c) counts the number of cook whose working hours are 'night'

```
Select COUNT (C.C_ID) AS NUM_Cooks
from Cook C
Join works_At ON C.C_ID = W.C_ID
where W.working hrs = 'night';
```

d) find the average salary of the cooks

```
Select AVG (C.salary) As Avg_salary
from Cook C;
```

e) find names of resturent and their branches whic generate revenue more than 15000

```
Select R.R_Name, B.B_ID
From Resturent R
Join Branch B on R.R_ID = B.R_ID
Where B.Revenue > 15000;
```

Q NO: 2

Write Relation algebra

a) To find all rows where age is less than 20

$\sigma_{Age < 20}(Student)$

b) To list all the student

$\pi_{ID, S.Name, Address, Gender, Age}(Student)$

c) To list the Name and Gender of student

$\pi_{S.Name, Gender}(Student)$

d) To list Name and Address of student whose gender is 'm' and age is greater than 30

$\pi_{S.Name, Address}(\sigma_{Gender = "m" \wedge Age > 30}(Student))$

Q.NO: 3

a) find the name and price of product whose name starts with 'k' and end with 'T'.

```
Select P.name, product-price
from Product
where P-name like 'k%T';
```

b) find the name of costomer whose purchased 'Pen'.

```
Select C.C-Name from Costomer C
Join Purchase P on C.c_id = P.c-id
Join Product Pr on P.pr-id = Pr.pr_id
where Pr.P-name = 'Pen';
```

c) insert the record of new costomer

```
insert into Costomer (c-id, C-Name, address, gender, age
phone, email, created-date)
Value (1001, 'Hari', 'Banepa', 'm', '25', '9813626742',
'harishrestha@gmail.com', CURDATE());
```

d) Delete the product 'Pen'

```
Delete from Product
where P-name = 'Pen';
```

e) Increase the price of all product by 25%

```
UPDATE Product
SET product-price = product-price * 1.25;
```

8) DDL statement ~~from~~ for creating above relation

```
CREATE TABLE customerC
    C_id INT PRIMERY key,
    C_Name varchar (100);
    address varchar (50),
    gender varchar (50),
    age int ;
    phone varchar (20),
    email varchar (90);
    created_date DATE
    );

Create table ProductC
    pr_id Int PRIMARY key,
    P_name varchar (100),
    product_price varchar (50, 90),
    mfg_date DATE,
    exp_date DATE
    );

Create table PerchaseC
    id int primary key,
    C_id int,
    pr_id int,
    quantity int,
    total_price decimal (10, 20),
    entered_by varchar (100),
```

entered_at DATETIME,
foreign key (c_id) REFRENCE Customer (c_id),
foreign key (pr_id) reference Product (pr_id)
);

QNO:4

What is join operation?

A join operation in SQL is used to combine rows from two or more table based on a related column between them. There are several type of joins:

1) Inner join: Return only the matching rows between the tables
2) left outer join: Return all rows from the left table and the matching rows from the right table If there is no match, Null is returned for colum from the right table.
3) Right outer joind: Return all rows from the right table and the matching rows from the left table If there is no match, NULL is returned for column from the left table.

→ left outer join

A left outer join will return all record from the left table (Employee) and the matching records from the right table (Branch). If there is no match NULL value are returned from the right table

SELECT e.Emp-name, e.Province, e.city, b.Branch
b.Salary from Employee e
left JOIN Branch b ON e.Emp_name = b.Emp-name;

Emp-name	Province	City	Branch	Salary
Ram	Bagmati	ktm	NTC	10000
Shyam	karnali	Surkhet	Ncell	20000
Hari	Madhesh	Janakpur	NTV	30000
Sita	Chandaki	Pokhara	NULL	NULL

2) Right Outer Join

A right outer join will return all record from the right table (Branch) and the matching record from the left table (Employee). If there is no ~~recor~~ match, NULL value are returned from the left table

Select e.Emp-name, e.Province, e.city, b.Branch
b.Salary from Employee e
Right Join Branch b on e.Emp-name = b.Emp-name;

Emp-name	Province	City	Branch	Salary
Ram	Bagmati	ktm	NTC	10000
Shyam	karnali	Surkhet	Ncell	20000
Hari	Madhesh	Janakpur	NTV	30000
NULL	NULL	NULL	Radio Nepal	25000