Organic Veget_Ables-Database Designing

Database Planning:

Mission Statement

The purpose of Organic Veget_Ables Database system is to maintain data that is generated and used while purchase and sale of vegetables meanwhile providing the ease of shopping to the clients with a unique shopping way and benefiting them and fascilitating cooperation and resource sharing between outlets.

Mission Objectives

- To maintain(enter,update&delete) data on branches
- To maintain(enter,update&delete) data on departments
- To maintain(enter,update&delete) data on employees working in branch
- To maintain(enter,update&delete) data on item purchase
- To maintain(enter,update&delete) data on vendors
- To maintain(enter,update&delete) data on item sell
- To maintain(enter,update&delete) data on customers
- To maintain(enter,update&delete) data on marketing
- To maintain (enter,update&delete) data on payments

- To perform searches on branches
- To perform searches on employees working in branch
- To perform searches on item purchase
- To perform searches on vendors
- To perform searches on item sell
- To perform searches on customers
- To perform searches on marketing
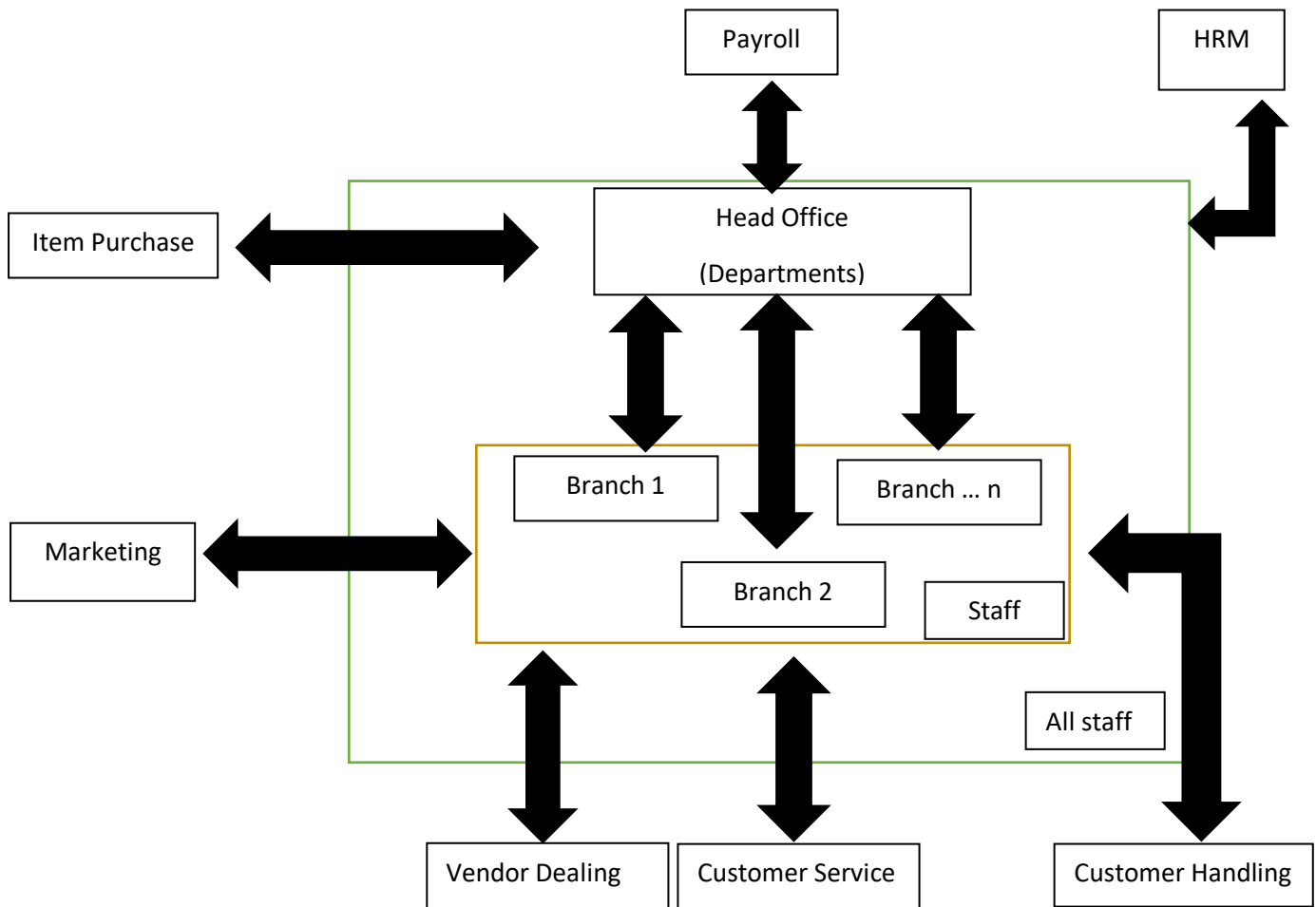- To perform searches on payments

- To track the status of item purchase
- To track the status of item sell
- To track the status of vendors contracted
- To perform searches on new customers
- To track status of payments

- To report on branches
- To report on departments
- To report on employees
- To report item purchase
- To report on vendors
- To report on marketing
- To report on item sell

- To report on customers
- To report on payments
- To report on profit

System Definition:

Defining System Boundary

Requirement Collection and Analysis:

<u>Major User View</u>

Data	Access Type	Proprietor	Manager	Supervisor	Employees
All Departments	Maintain		X		
	Query	X	X		
	Report	X	X		
All Branches	Maintain				
	Query	X	X		
	Report	X	X		
Single Branch	Maintain		X		
	Query		X		
	Report		X		
All Employees	Maintain				
	Query	X	X		
	Report	X	X		
Branch Employees	Maintain		X		
	Query		X	X	
	Report		X	X	
All Item Purchase	Maintain		X	X	
	Query	X	X	X	X
	Report	X	X	X	X
Branch Purchase	Maintain				
	Query				
	Report				
All Item Sell	Maintain				
	Query	X			
	Report	X	X		
Branch Sell	Maintain		X	X	
	Query		X	X	X
	Report		X	X	X
All Vendors	Maintain				
	Query	X			
	Report	X	X		
Branch Vendors	Maintain		X	X	
	Query		X	X	
	Report		X	X	
All Customers	Maintain		X		
	Query		X		
	Report	X	X		
Branch Customers	Maintain				X
	Query		X	X	X
	Report	X	X	X	X
All Viewing	Maintain				
	Query				
	Report				

Branch Viewing	Maintain				X	X
	Query				X	X
	Report				X	X
All Profit	Maintain			X		
	Query	X		X		
	Report	X		X		
Branch Profit	Maintain				X	
	Query			X	X	
	Report			X	X	

Systems Requirements for Organic Veget-Ables Database System

Initial database size

- There will be approximately 100 members of staff working at over 10 branches. There will be an average of 10 and a maximum of 13 members of staff at each branch.
- There will be approximately 12 vendors available at all branches. There will be an average of 1 and a maximum of 2 vendors at each branch.
- There will be approximately 20,000 customers. There will be an average of 2000 and a maximum of 2200 customers at each branch.
- There will be approximately 50,000 viewings across all branches. There will be an average of 5,000 and a maximum of 7,000 viewings at each branch.

Database rate of growth

- Approximately 2 new vendors will be added to the database each year.
- If a vendor does not supply at any time within a period of two years, his or her record will be deleted.
- Approximately 10 members of staff will join and leave the company each month. The records of staff who have leaves the company will be deleted after one year. Approximately 10 staff records will be deleted each month.
- Approximately 500 new customers will be registered at branches each month. If a customer does not purchase at any time within a period of two years, his or her record will be deleted. Approximately 50 customer records are deleted each month.
- Approximately 5 new items will be added across all branches each month.

The types and average number of record searches

- Searching for the details of all branches – approximately 2 per day.
- Searching for the details of a member of staff at a branch – approximately 3 per day.
- Searching for the details of available items in all branches – approximately 10 per day (Monday to Thursday), approximately 15 per day (Friday and Saturday). Peak workloads will be 09.00–11.00 and 18.00–21.00 daily.
- Searching for the details of vendors – approximately 1 per day.
- Searching for the details of a customer – approximately 1 per day.

Networking and Shared Access Requirements

All branches should be securely networked to a centralized database located at

Organic Veget_Ables Head office. The system should allow for at least 5

people concurrently accessing the system from each branch. Consideration needs to be

given to the licensing requirements for this number of concurrent accesses.

Performance

- During opening hours but not during peak periods expect less than 1 second response for all single record searches. During peak periods expect less than 5 second response for each search.
- During opening hours but not during peak periods expect less than 3 second response for each multiple record search. During peak periods expect less than 7 second response for each multiple record search.
- During opening hours but not during peak periods expect less than 1 second response for each update/save. During peak periods expect less than 3 second response for each update/save.

Security

- The database should be password-protected.
- Each member of staff should be assigned database access privileges appropriate to a particular user view, namely Propitor, Manager, Supervisor, or Assistant.
- A member of staff should only see the data necessary to do his or her job in a form that suits what he or she is doing.

Backup/Recovery

- The database should be backed up daily at 10 pm.

Legal Issues

Each country has laws that govern the way that the computerized storage of personal data

is handled. As the Organic Veget_Ables database holds data on staff, customers, and vendors

any legal issues that must be complied with should be investigated and implemented.

Case Scenario:

The Organic vegetables is a startup that purchase vegetable, fruits & other eatable items from different vendors and provide one shop solution to its customer.

The Organic vegetables (Head Office) have many departments & branches. The departments have many employees.

Entities:

1) Head Office

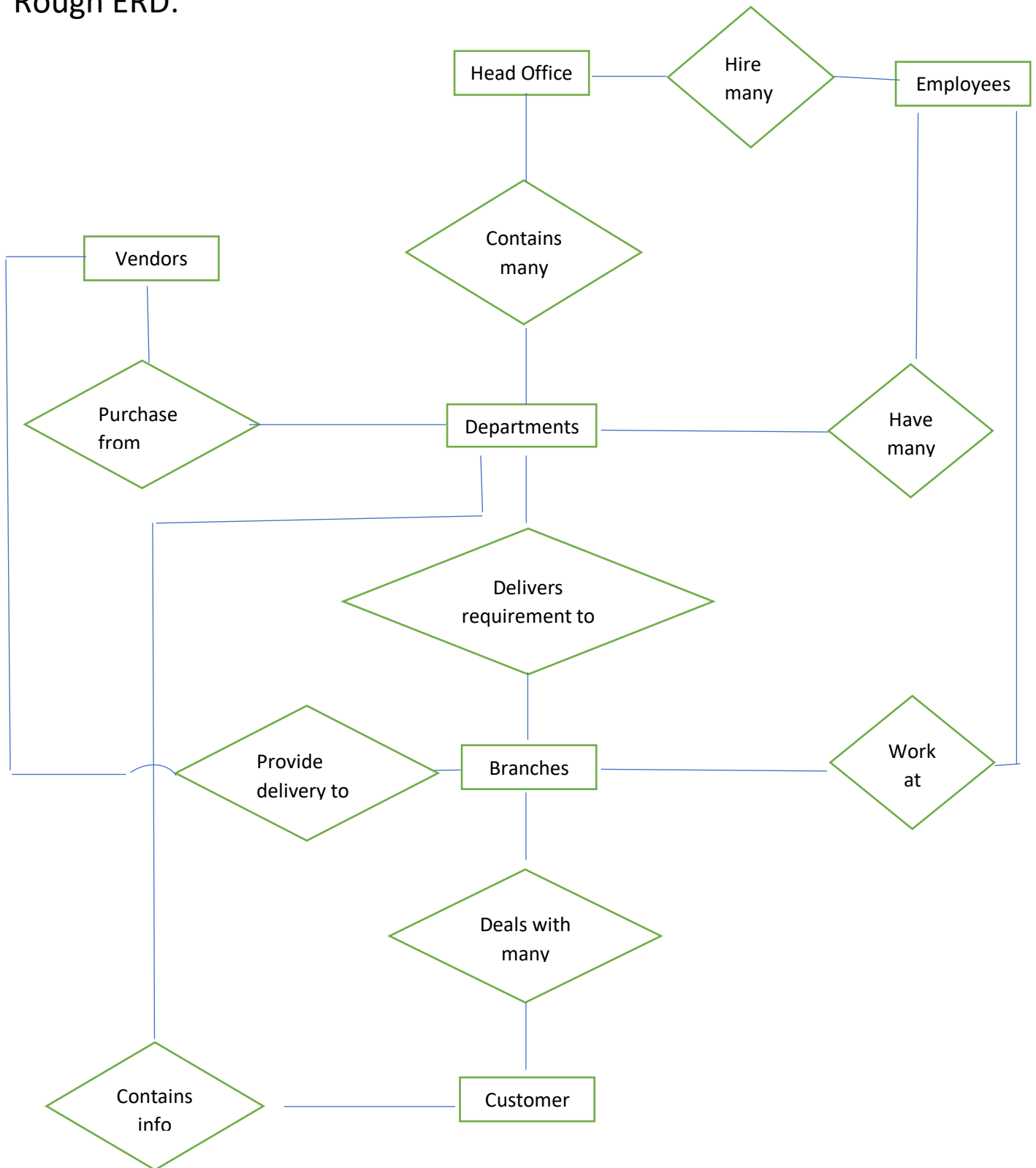2) Departments

3) Employees

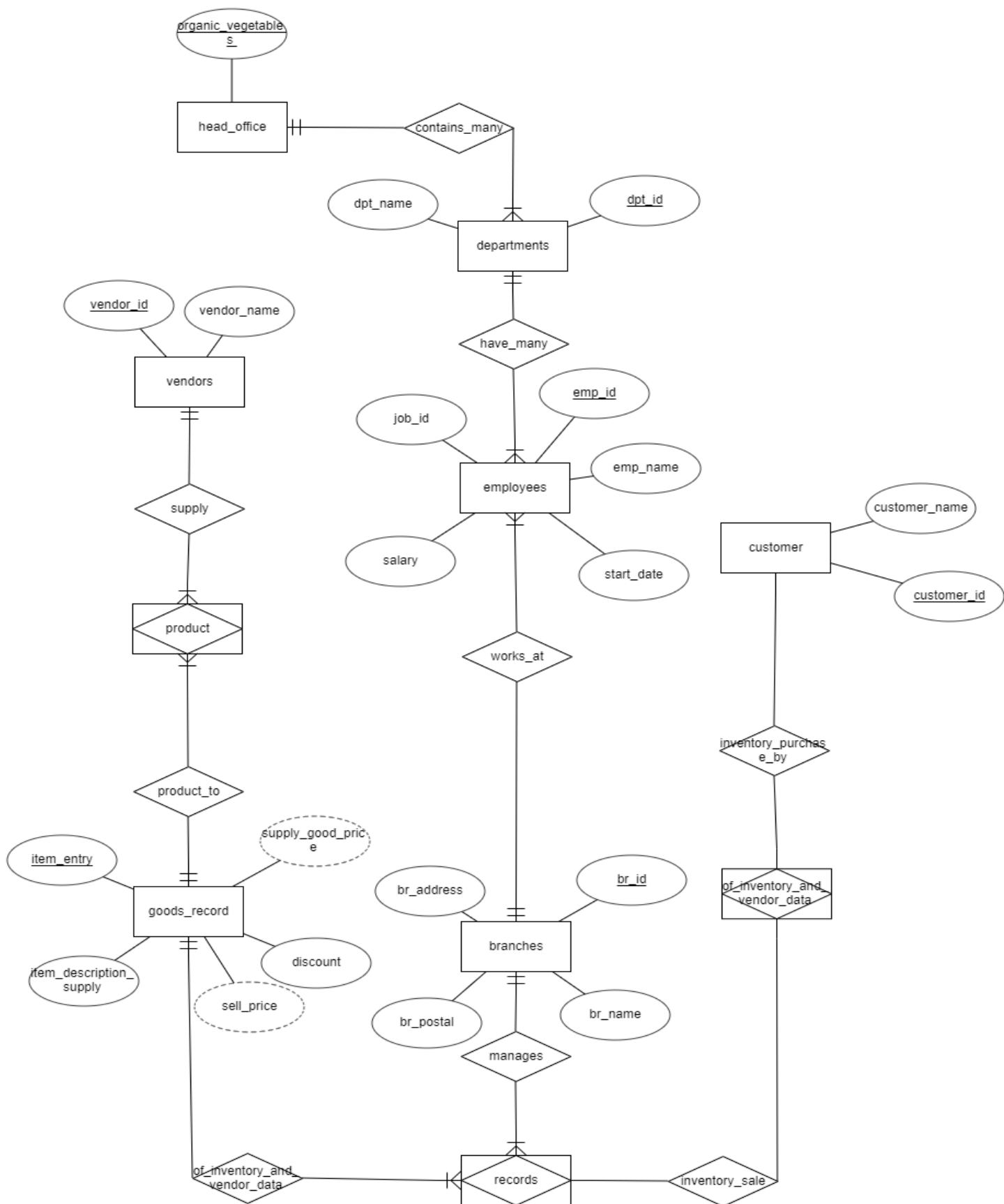4) Branches

5) Vendors

6) Customer

Relationships among entities:

	Head Office	Departments	Employees	Branches	Vendors	Customers
Head Office		contains many	Hire			
Departments			have many		Deal with d/f vendors	
Employees				works at		
Branches						Deals with many
Vendors		information stored by		Provide delivery to		
Customers				information stored by		

Rough ERD:

Organic Veget-Ables ERD

organic_vegetables

head_office

contains_many

dpt_name

dpt_id

departments

have_many

vendor_id

vendor_name

vendors

job_id

emp_id

emp_name

employees

salary

start_date

customer_name

customer

customer_id

supply

product

works_at

inventory_purchase_by

product_to

supply_good_price

item_entry

goods_record

of_inventory_and_vendor_data

br_address

br_id

item_description_supply

discount

branches

sell_price

br_postal

br_name

manages

of_inventory_and_vendor_data

records

inventory_sale

Documentation

Organic Veget-Ables is a conceptual startup idea that is aimed at providing the community with fresh and organic vegetables and fruits in a pocket friendly price and in bio secure environment. For additional ease to the customers and providing data related to business to the branch manager, a database is designed. This database is aimed at providing customer ease of shopping by introducing a system of ordering for a hasile free environment as well as ordering through e-portal.
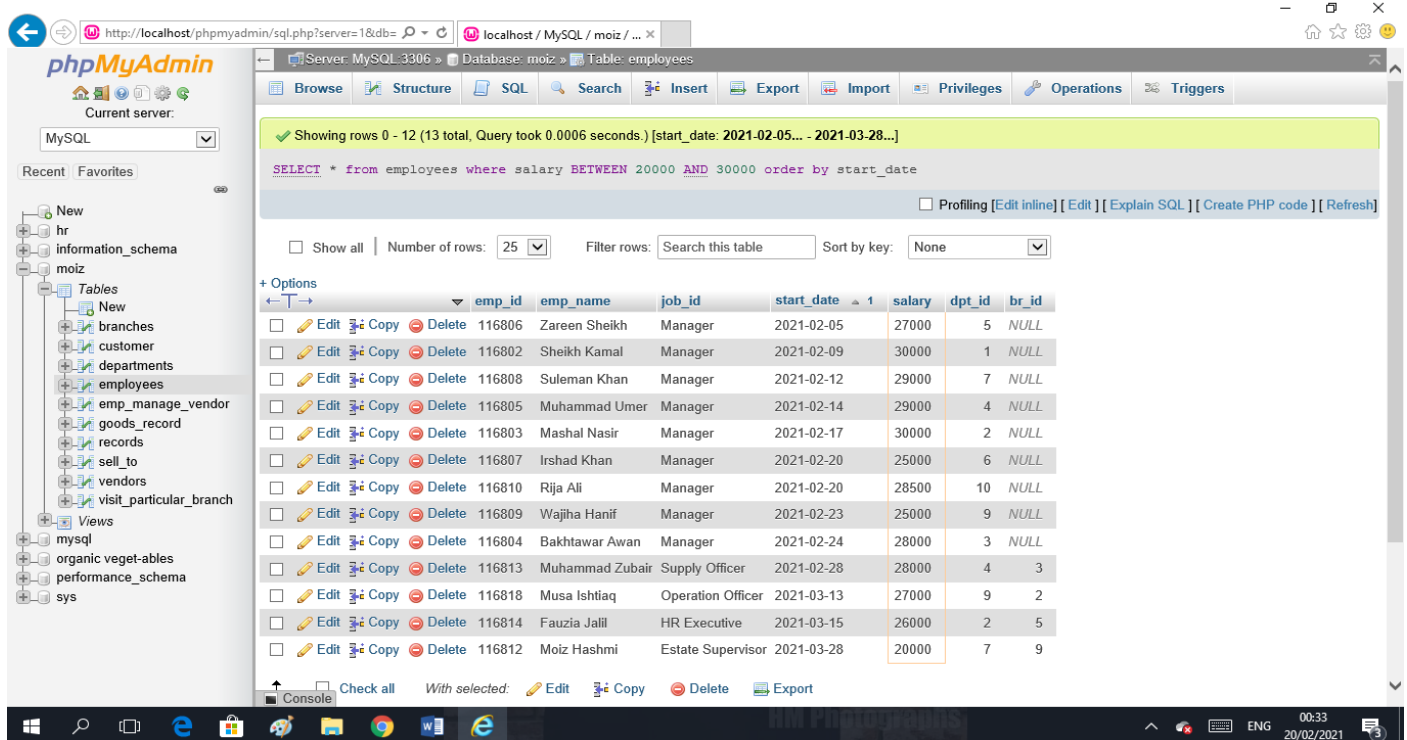
This database will also be helpful in branch operations by providing a system to keep track of purchase and sale of items and also generating financial reports. It also provide branch staffs to keep track of valuable customers and sellers linked to the branches.

This database will also provide view for the propitor of the business to have whole picture of the transections occuring in the business.

The entities in this database will help the branch manager, employees, customers and different departments to have their desired views of what is happening in the business and keep track of all the dealings with vendors and customers. These views will reduce the complexity for users while maintaining the records concurrently.

We have also applied access control contrain as all the viewers (President, Vice President Manager Etc) will have personal accessing id and passoward that enables us to protect the database from theft and unidentified accessing.

Organic Veget-Ables Database Queries Performed

Showing rows 0 - 2 (3 total, Query took 0.0404 seconds.)

```
SELECT emp_id, emp_name as 'Name', job_id, (Sysdate()- start_date) as 'No. of days' , salary, dpt_id FROM `employees` where emp_id<
116805 AND job_id LIKE('M%') AND salary<= 30000
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 ☑ | Filter rows: Search this table | Sort by key: None ☑

+ Options

	emp_id	Name	job_id	No. of days	salary	dpt_id
☐ 🖉 Edit ⊟ Copy ⊖ Delete	116802	Sheikh Kamal	Manager	20210199792705	30000	1
☐ 🖉 Edit ⊟ Copy ⊖ Delete	116803	Mashal Nasir	Manager	20210199792697	30000	2
☐ 🖉 Edit ⊟ Copy ⊖ Delete	116804	Bakhtawar Awan	Manager	20210199792690	28000	3

↑ ☐ Check all   With selected: 🖉 Edit ⊟ Copy ⊖ Delete 🖺 Export

☐ Show all | Number of rows: 25 ☑ | Filter rows: Search this table | Sort by key: None ☑

Query results operations

🖶 Print ⊟ Copy to clipboard 🖺 Export 📊 Display chart 🗔 Create view

Screenshot 1

Server: MySQL:3306 » Database: moiz » Table: vendors

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | Triggers

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 9 (10 total, Query took 0.0005 seconds.)

```sql
SELECT Vendor_id, Upper(vendor_name), instr(vendor_name,'e') FROM `vendors`
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

Vendor_id	Upper(vendor_name)	instr(vendor_name,'e')
100500	KHAN BROTHERS	11
100501	KHAN ASSOCIATES	14
100502	LIMTON ASSOCIATES	16
100503	TAPAL	0
100504	ASAD BROTHERS	11
100505	AQUA TECH	7
100506	NELSON	2
100507	AL-AYUB PACKAGES	15
100508	KHAREEDO SABZI	5
100509	TAHIR FRUITS	0

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

🖶 Print ⧉ Copy to clipboard 📤 Export 📊 Display chart 📝 Create view

Console

Screenshot 2

Server: MySQL:3306 » Database: moiz » Table: employees

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | Triggers

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 8 (9 total, Query took 0.0006 seconds.)

```sql
SELECT emp_name, salary, MOD(salary, 25000) as 'Bonus' FROM employees WHERE job_id = 'Manager'
```

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

emp_name	salary	Bonus
Sheikh Kamal	30000	5000
Mashal Nasir	30000	5000
Bakhtawar Awan	28000	3000
Muhammad Umer	29000	4000
Zareen Sheikh	27000	2000
Irshad Khan	25000	0
Suleman Khan	29000	4000
Wajiha Hanif	25000	0
Rija Ali	28500	3500

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

🖶 Print ⧉ Copy to clipboard 📤 Export 📊 Display chart 📝 Create view

Console

Screenshot 1:

http://localhost/phpmyadmin/sql.php?server=1&db=

localhost / MySQL / moiz / ...

phpMyAdmin

Current server:
MySQL

Recent Favorites

- New
  - hr
  - information_schema
  - moiz
    - Tables
      - New
      - branches
      - customer
      - departments
      - employees
      - emp_manage_vendor
      - goods_record
      - records
      - sell_to
      - vendors
      - visit_particular_branch
    - Views
  - mysql
  - organic veget-ables
  - performance_schema
  - sys

Server: MySQL:3306 » Database: moiz » Table: employees

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | Triggers

⚠ Current selection does not contain a unique column. Grid edit, checkbox, Edit, Copy and Delete features are not available.

✓ Showing rows 0 - 1 (2 total, Query took 0.0007 seconds.)

SELECT emp_name, (SYSDATE()-start_date)/30 AS MONTHS FROM employees WHERE dpt_id = 5

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

emp_name	MONTHS
Zareen Sheikh	673673326514.8667
Atka Ejaz	673673326514.8000

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Query results operations

🖨 Print Copy to clipboard Export Display chart Create view

Console

00:57
20/02/2021
ENG

Screenshot 2:

http://localhost/phpmyadmin/sql.php?server=1&db=

localhost / MySQL / moiz / ...

phpMyAdmin

Current server:
MySQL

Recent Favorites

- New
  - hr
  - information_schema
  - moiz
    - Tables
      - New
      - branches
      - customer
      - departments
      - employees
      - emp_manage_vendor
      - goods_record
      - records
      - sell_to
      - vendors
      - visit_particular_branch
    - Views
  - mysql
  - organic veget-ables
  - performance_schema
  - sys

Server: MySQL:3306 » Database: moiz » Table: employees

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | Triggers

✓ Showing rows 0 - 19 (20 total, Query took 0.0006 seconds.)

select emp_id, DATE_FORMAT(start_date, '%d-%b-%Y') as 'Joining Date' from employees

☐ Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

☐ Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

	emp_id	Joining Date
Edit Copy Delete	116800	01-Feb-2021
Edit Copy Delete	116802	09-Feb-2021
Edit Copy Delete	116803	17-Feb-2021
Edit Copy Delete	116804	24-Feb-2021
Edit Copy Delete	116805	14-Feb-2021
Edit Copy Delete	116806	05-Feb-2021
Edit Copy Delete	116807	20-Feb-2021
Edit Copy Delete	116808	12-Feb-2021
Edit Copy Delete	116809	23-Feb-2021
Edit Copy Delete	116810	20-Feb-2021
Edit Copy Delete	116811	17-Mar-2021
Edit Copy Delete	116812	28-Mar-2021
Edit Copy Delete	116813	28-Feb-2021
Edit Copy Delete	116814	15-Mar-2021
Copy Delete	116815	07-Feb-2021

Console

01:00
20/02/2021
ENG

First screenshot — departments table query

Browse | Structure | SQL | Search | Insert | Export | Import | Privileges | Operations | Triggers

Showing rows 0 - 19 (20 total, Query took 0.0008 seconds.)

```
SELECT DISTINCT e.emp_id, e.emp_name, d.dpt_name FROM departments d, employees e where d.dpt_id=e.dpt_id
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

emp_id	emp_name	dpt_name
116802	Sheikh Kamal	Administration
116811	Mansoor Baig	Administration
116817	Aamir Khan	Administration
116803	Mashal Nasir	Human Resource
116814	Fauzia Jalil	Human Resource
116804	Bakhtawar Awan	Marketing
116816	John Ibraham	Marketing
116805	Muhammad Umer	Procurement
116813	Muhammad Zubair	Procurement
116806	Zareen Sheikh	Security
116815	Atka Ejaz	Security
116807	Irshad Khan	Information Technology
116820	Ann Rodriguez	Information Technology
116808	Suleman Khan	Real Estate
116812	Moiz Hashmi	Real Estate
116800	Ali Islam	Management
116809	Wajiha Hanif	Finance
116818	Musa Ishtiaq	Finance
116810	Rija Ali	E-com
116819	Salman Khan	E-com

Second screenshot — employees revised salary

Show all | Number of rows: 25 | Filter rows: Search this table

+ Options

emp_name	job_id	salary	REVISED SALARY
Ali Islam	President	50000	65000
Ahsan Baig	Vice President	45000	56250
Sheikh Kamal	Manager	30000	36000
Mashal Nasir	Manager	30000	36000
Bakhtawar Awan	Manager	28000	33600
Muhammad Umer	Manager	29000	34800
Zareen Sheikh	Manager	27000	32400
Irshad Khan	Manager	25000	30000
Suleman Khan	Manager	29000	34800
Wajiha Hanif	Manager	25000	30000
Rija Ali	Manager	28500	34200
Mansoor Baig	Admin Officer	15000	16500
Moiz Hashmi	Estate Supervisor	20000	23000
Muhammad Zubair	Supply Officer	28000	33600
Fauzia Jalil	HR Executive	26000	29900
Atka Ejaz	Security In-charge	10000	10500
John Ibraham	Sales person	14900	NULL
Aamir Khan	Admin Officer	8000	8800
Musa Ishtiaq	Operation Officer	27000	31050
Salman Khan	Customer Care	15000	16500
Ann Rodriguez	IT Officer	17000	18700

TOP-N Analysis

```
select item_entry,item_description_supply,sell_price-good_supply_price "Profit" from `goods_record` order by profit desc limit 3
```

☐ Profiling [Edit inline] [Edi

+ Options

	item_entry	item_description_supply	Profit
☐ 🖉 Edit 🖹 Copy ⊝ Delete	4	Potato, Eggplant, Sweet potato, Turnip	500
☐ 🖉 Edit 🖹 Copy ⊝ Delete	3	Carrot, Brussels, sprout, Pumpkin, Cabbage	400
☐ 🖉 Edit 🖹 Copy ⊝ Delete	5	Green chilli, Onion, Lettuce, Radish	300

↑   ☐ Check all   With selected: 🖉 Edit   🖹 Copy   ⊝ Delete   🖳 Export

Analytical View