Problem Identification:

AIM:

To develop a concise, specific, and accurate problem statement that serves as the focal point for the project that is to be executed in the present semester.

PROBLEM STATEMENT:

The Café Management System project is conceived to tackle the operational inefficiencies and manual challenges faced by café managers in their daily oversight of operations. Currently in its conceptual stage, the project is driven by the anticipation of impending difficulties, such as issues with hiring new employees, tracking open positions, and managing inventory and sales calculations. The absence of a centralized system, coupled with reliance on manual methods like Microsoft Excel, serves as pain points leading to potential inefficiencies and errors, necessitating the development of a systematic solution. The envisioned Café Management System aims to alleviate these challenges by introducing a sophisticated SQL Server database. In this early stage, the project focuses on planning and designing the database structure, laying the groundwork for subsequent development phases. The overarching goal is to establish a centralized platform for efficiently managing critical information, encompassing employee details, leave records, schedules, open positions, sales, and inventory. Although the project is yet to commence, early considerations for business rules include assigning a single supervisor for the café unit, setting basic restrictions on employee work hours, and outlining preliminary guidelines for employee assignment to specific shifts and positions. These initial rules serve as a foundational step towards establishing system integrity and ensuring a structured approach to café management. In conclusion, the Café Management System project adopts a proactive and systematic approach to address imminent challenges faced by café managers. By harnessing the power of a SQL Server database, the project aims to deliver a centralized solution that streamlines operations, reduces manual efforts, and enhances overall efficiency. As the project progresses, further details will be refined, and the implementation phases will be initiated to realize the vision of a comprehensive Café Management System.

RESULT:

Successfully implementing the Café Management System, driven by a sophisticated SQL Server database, has efficiently addressed operational challenges faced by café managers. Our centralized platform streamlines critical information management, reduces manual efforts, and establishes system integrity. Early business rules set the groundwork, ensuring a structured and efficient approach to café management.

REQUIREMENT GATHERING:

AIM:

To meticulously collect and document specific needs, preferences, and expectations related to café management, aiming to define the project's scope and objectives comprehensively. This process establishes a solid foundation for the design and development phases, ensuring the Café Management System aligns effectively with operational requirements.

REQUIREMENT GATHERING:

Requirement gathering for the Café Management System involves identifying and specifying essential functionalities to address operational inefficiencies faced by café managers. Key requirements include:

1. Employee Management:
   - Capture and store detailed employee information, including personal details and contact information.
   - Develop features for tracking leave records, schedules, and efficiently managing employee assignments to shifts and positions.
   - Implement rules for a single supervisor per café unit and set restrictions on employee work hours.

2. Hiring and Open Positions:
   - Design a module for tracking open positions, streamlining the hiring process for new employees.
   - Define criteria for recruitment and develop workflows for efficient position filling.

3. Inventory and Sales Management:
   - Integrate functionalities to manage inventory, track stock levels, and automating sales calculations.
   - Implement features for monitoring sales transactions, generating revenue reports, and assessing inventory levels.

4. Centralized Database System:
   - Develop a sophisticated SQL Server database to serve as a centralized platform for managing critical information.
   - Establish database structures for employee details, leave records, schedules, open positions, sales, and inventory.

5. Business Rules:
   - Formalize early considerations for business rules, including assigning a single supervisor, setting work-hour restrictions, and outlining guidelines for employee shifts and positions.

6. User-Friendly Interfaces:
   - Create intuitive web and mobile interfaces for both café staff and administrators to facilitate easy navigation and usage.

7. Scalability:
   - Design the system to handle a growing number of users and expanding café operations. Consider load balancing and performance optimization for scalability.

8. Security Measures:
- Implement robust security measures to protect sensitive data, ensuring the confidentiality and integrity of employee and operational information.

9. Testing:
- Develop a comprehensive testing plan encompassing unit testing, integration testing, and user acceptance testing to ensure the reliability and accuracy of the system.
- Implement rigorous testing procedures to identify and rectify any potential issues or bugs in the system before deployment.

10. Quality Assurance:
- Establish quality assurance protocols to ensure that the Café Management System meets defined standards and fulfills the specified requirements.
- Conduct thorough quality checks at each development phase to guarantee the system's robustness, reliability, and adherence to industry best practices.

11. Documentation:
- Develop comprehensive documentation outlining system functionalities, business rules, testing procedures, and user guides for effective system utilization.

RESULT:

The result of our comprehensive requirement gathering phase is a detailed blueprint guiding the development of the Café Management System. This ensures alignment with café goals, effectively addressing operational challenges, and setting the stage for enhanced efficiency in daily operations.

ER DIAGRAM:

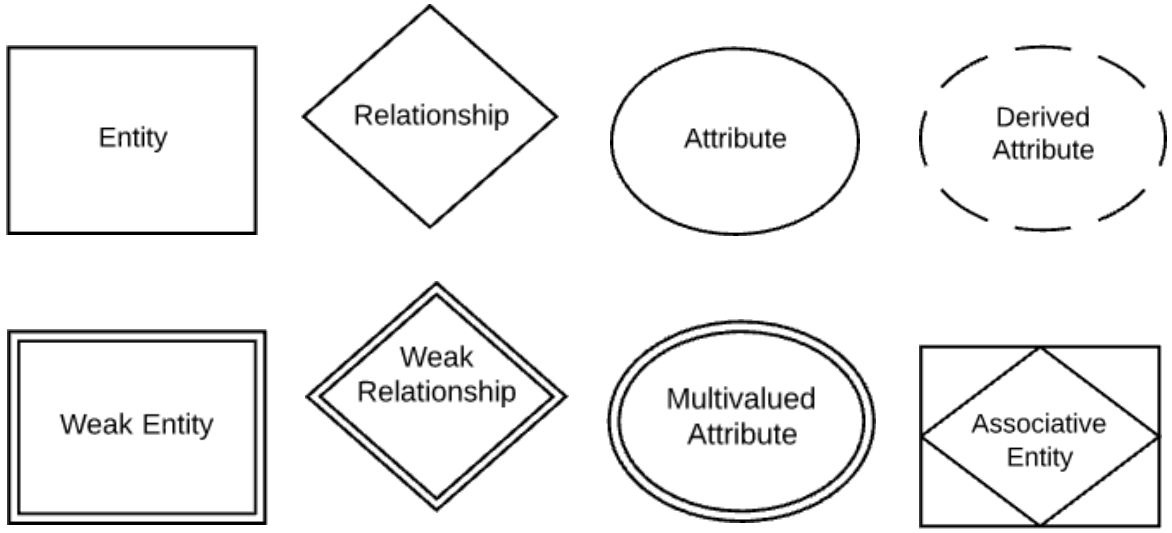
AIM:

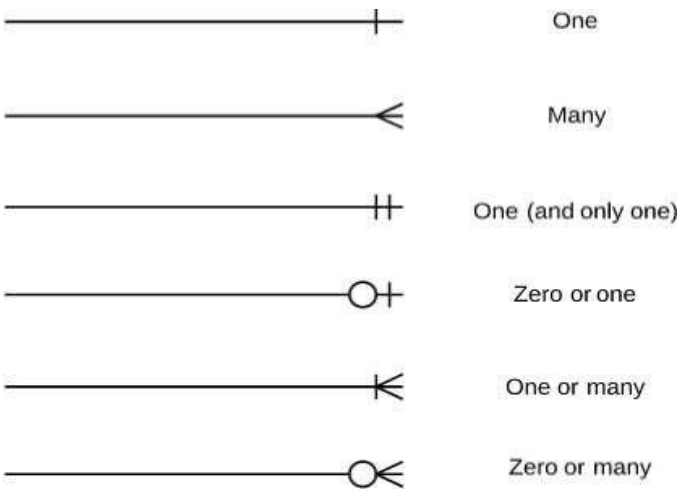
To brainstorm and create an ER Diagram for our project that is titled “Café Management System”.

ER DIAGRAM:

An Entity Relationship (ER) Diagram is a type of flowchart that illustrates how “entities” such as people, objects or concepts relate to each other within a system. ER Diagrams are most often used to design or debug relational databases.

ER NOTATIONS:

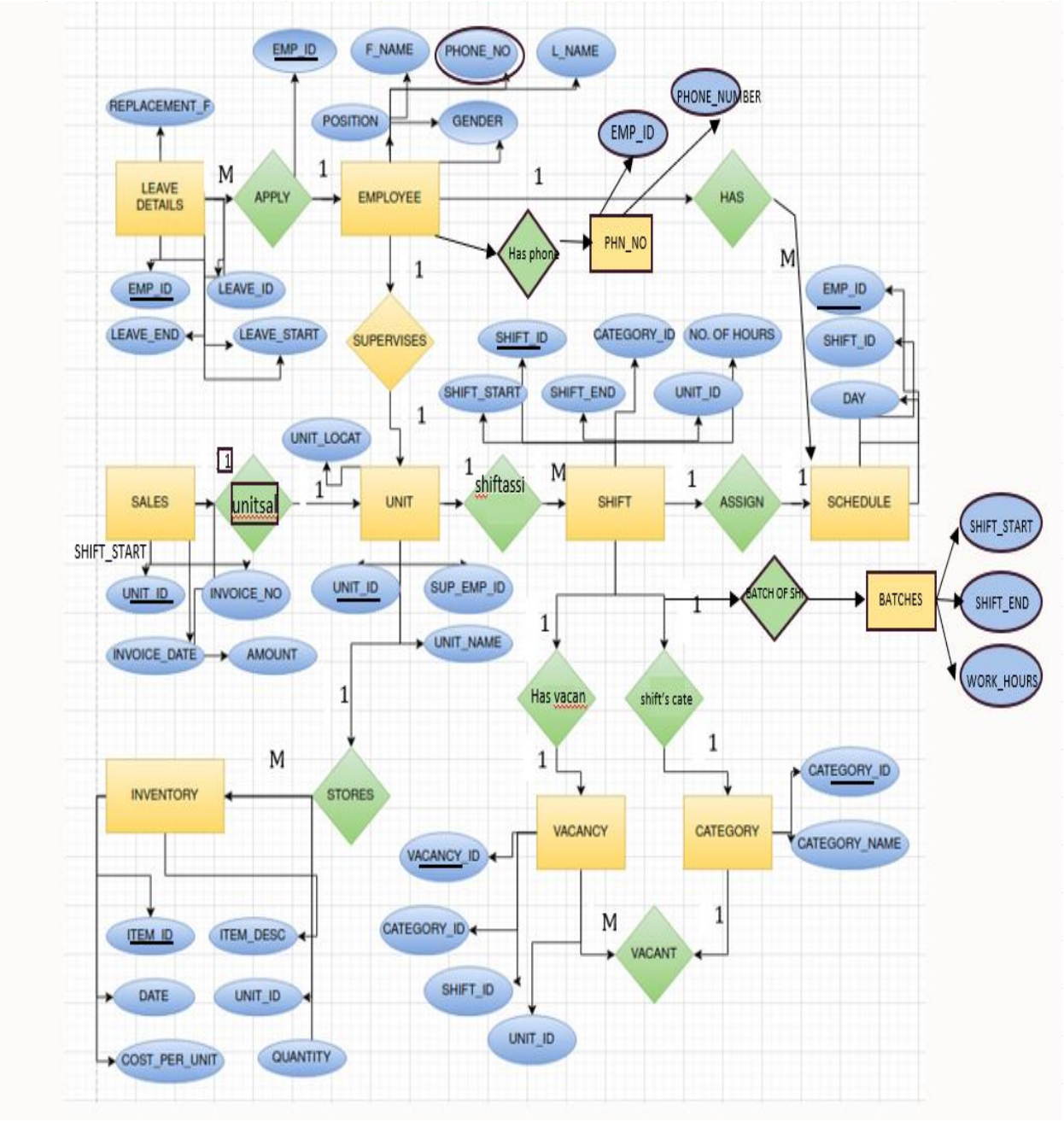




Entities and their Attributes along with Primary Key denoted by underline(__):

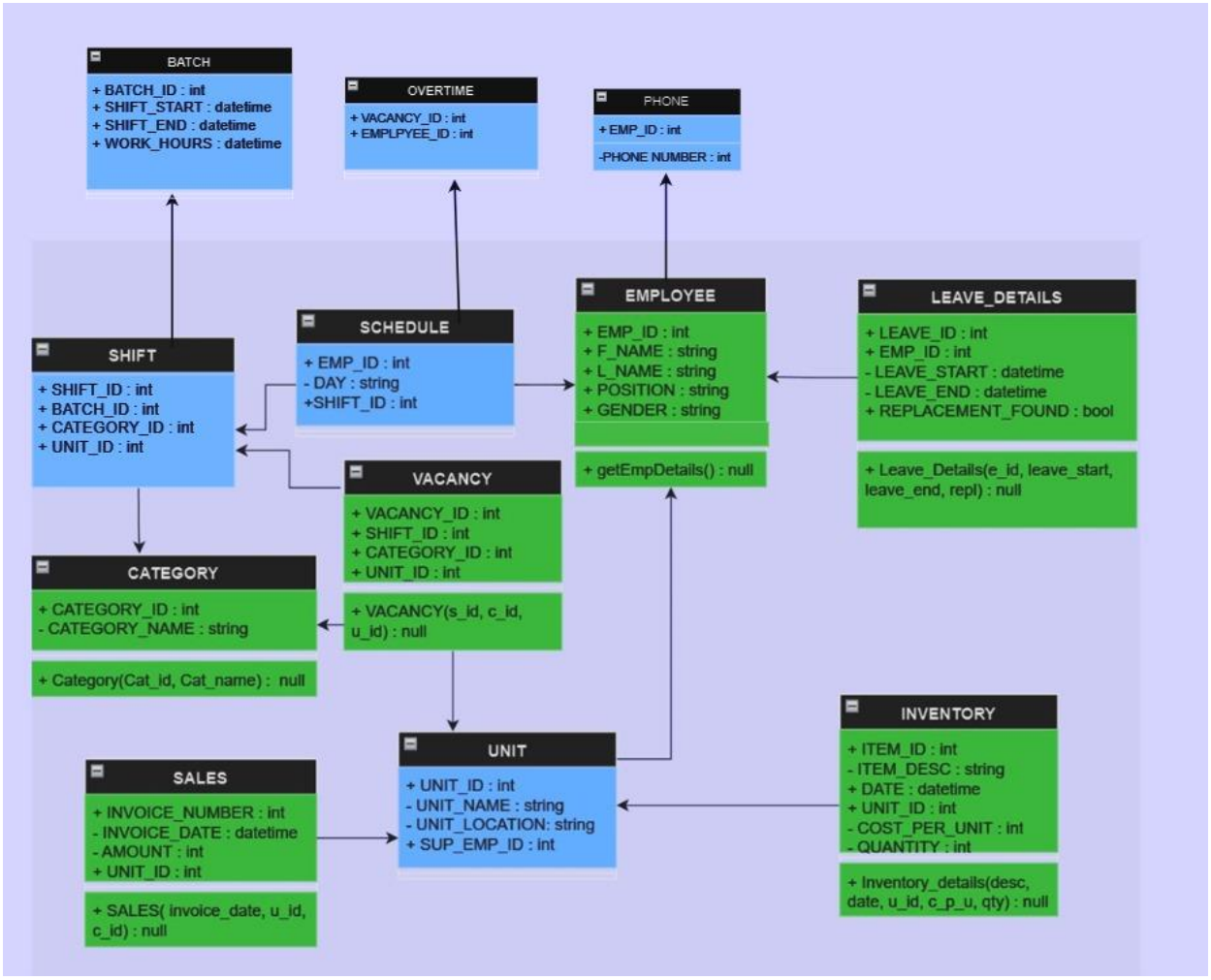
- SHIFT (SHIFT_ID, CATEGORY_ID, SHIFT_START, SHIFT_END, UNIT_ID, NUMBER OF HOURS),
- EMPLOYEE (EMP_ID, F_NAME, L_NAME, POSITION, PHONE_NUMBER, GENDER),
- CATEGORY (CATEGORY_ID, CATEGORY_NAME),
- UNIT (UNIT_ID, SUP_EMP_ID, UNIT_NAME, UNIT_LOCATION),
- SCHEDULE (EMP_ID, SHIFT_ID, DAY),
- LEAVE DETAILS (EMP_ID, LEAVE_ID, LEAVE_START, LEAVE_END, REPLACEMENT_FOUND),
- VACANCY (VACANCY_ID, CATEGORY_ID, SHIFT_ID, UNIT_ID),
- SALES (INVOICE_NUMBER, UNIT_ID, INVOICE_DATE, AMOUNT),
- INVENTORY (ITEM_ID, ITEM_DESC, DATE, UNIT_ID, COST_PER_UNIT, QUANTITY)

ER DIAGRAM OF OUR PROJECT:

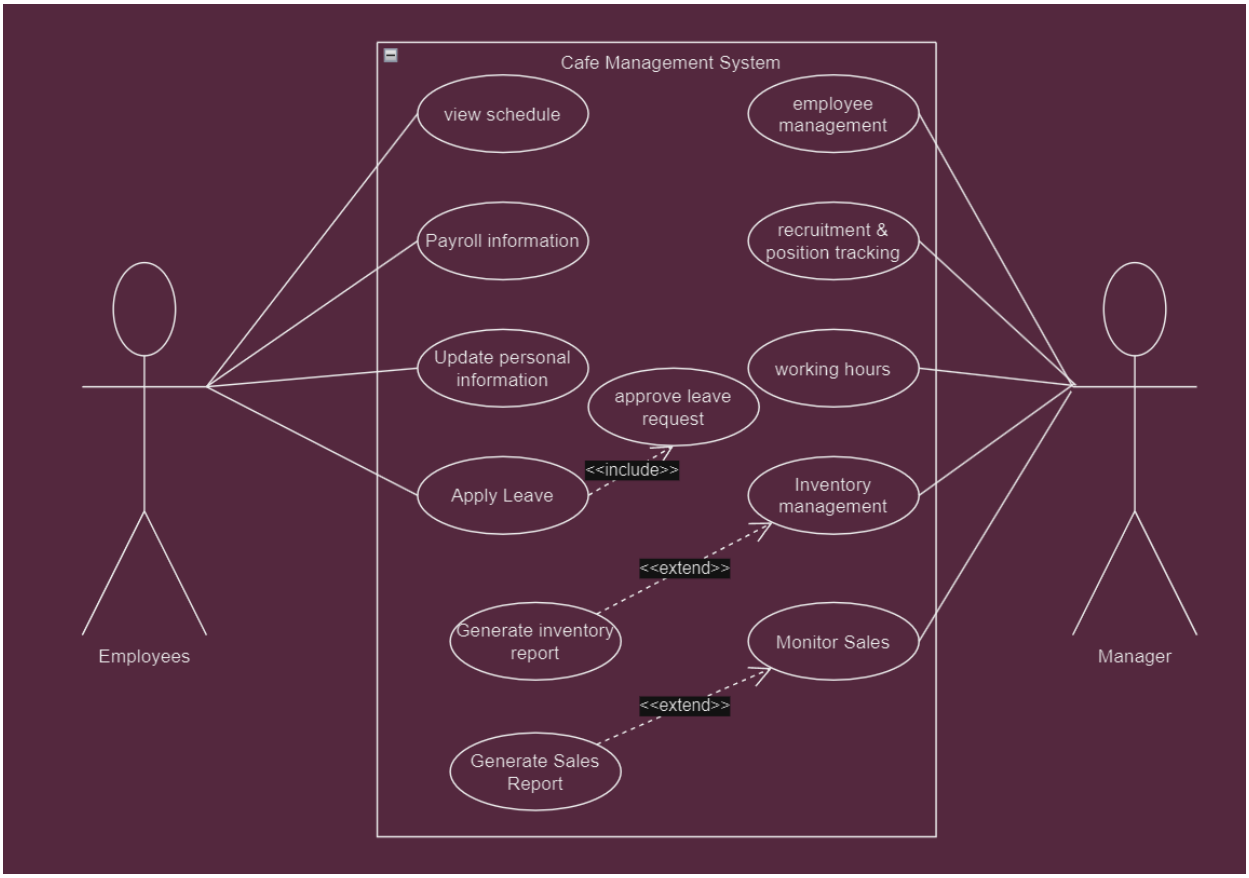


UML DIAGRAM:

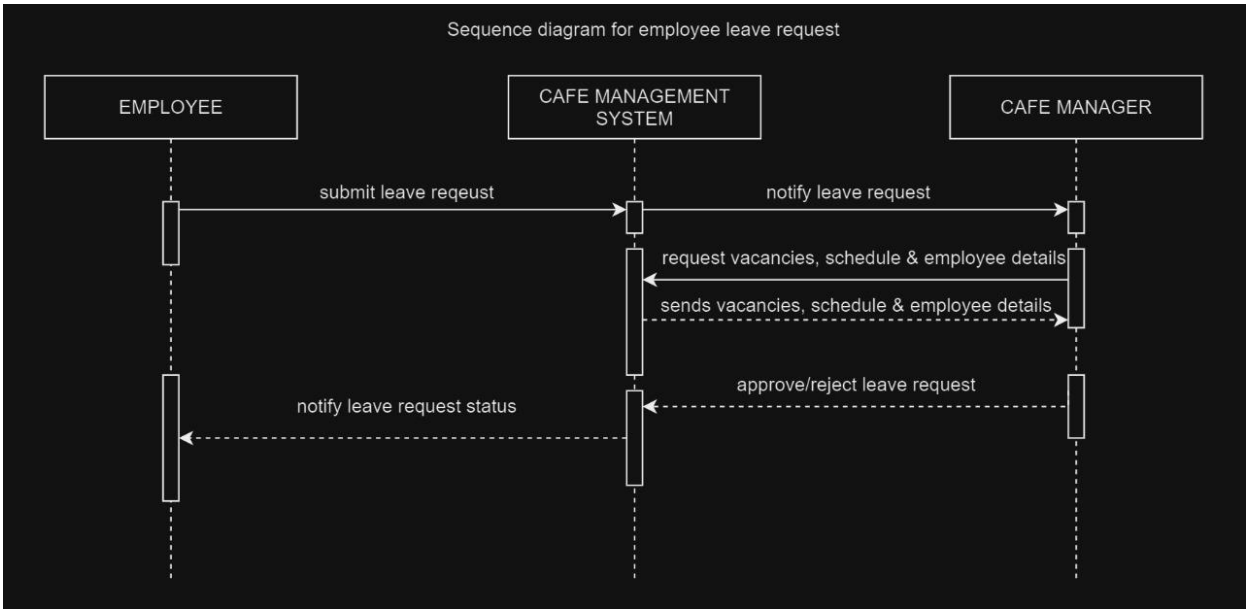
Class Diagram:



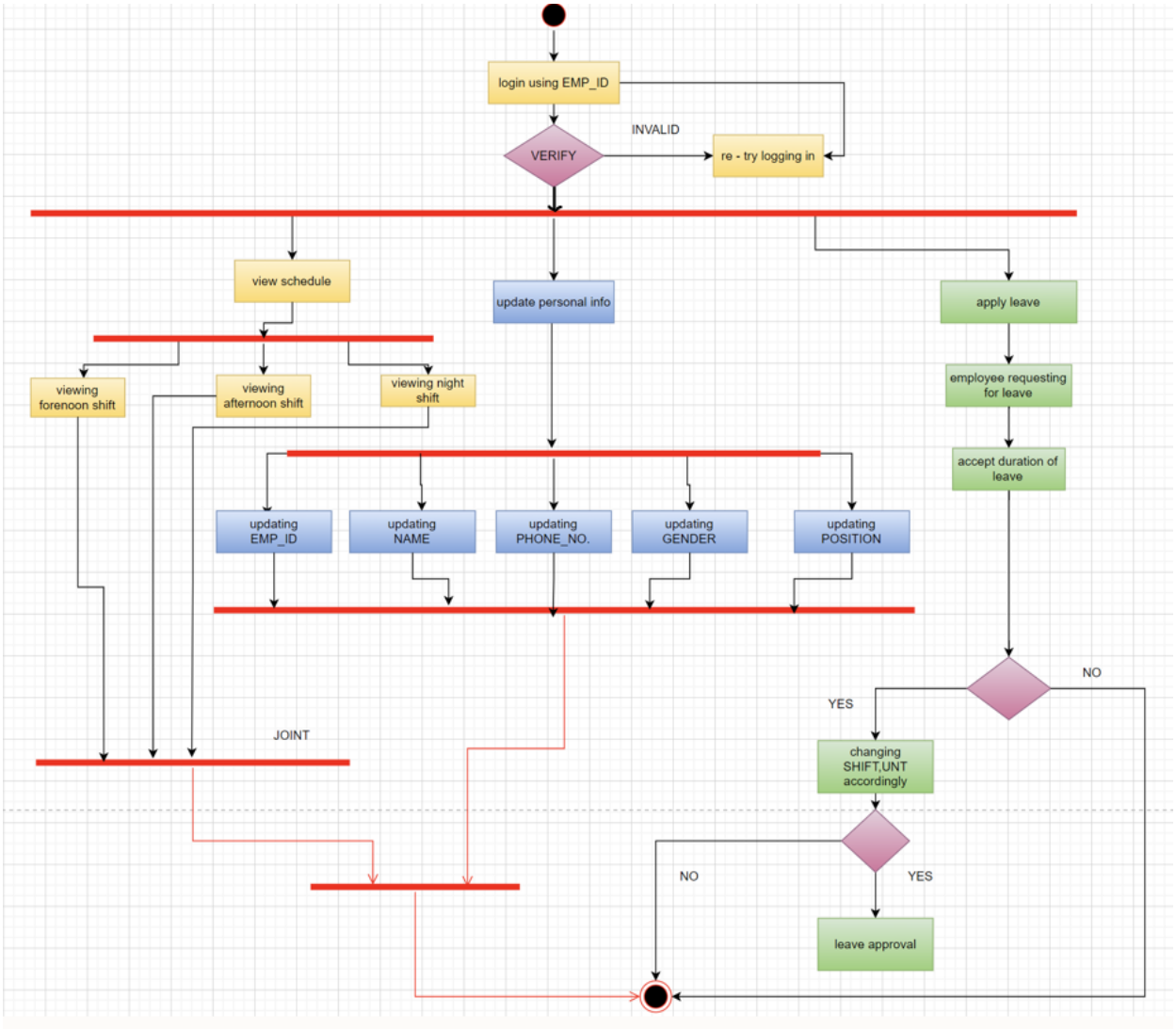
Use case diagram:



Sequence Diagram:



Activity Diagram:



RESULT:

Therefore, UML diagrams for the topic Café Management System has been designed successfully based on the given requirements.

QUERIES RELATED TO PROJECT:

All the 40 questions with queries:

1)

```
-- What are all the batches with their shift start and end times?
SELECT * FROM BATCHES;
```

SQL ▾ 1 / 1 1 - 6 of 6

BATCH_ID	SHIFT_START	SHIFT_END	WORK_HOURS
1	07:00:00	11:00:00	4
2	11:00:00	15:00:00	4
3	15:00:00	19:00:00	4
4	19:00:00	23:00:00	4
5	07:00:00	15:00:00	8
6	15:00:00	23:00:00	8

2)

```
-- what are all the categories?
SELECT * FROM CATEGORY;
```

SQL ▾ 1 / 1 1 - 5 of 5

CATEGORY_ID	CATEGORY_NAME
1	SUPERVISOR
2	CASHIER
3	COFFEE
4	STOCKER
5	HOT FOOD

3)

```
-- SHow the details of every employee in the Cafe:
SELECT * FROM EMPLOYEE;
```

SQL ▾ 1 / 1 1 - 20 of 20

EMP_ID	F_NAME	L_NAME	POSITION	PHONE_NUMBER	GENDER	EMAIL_ID	JOIN_DATE	ADDRESS
1	Chirag	Bilimoria	Supervisor	405-614-9950	M	chirag@email.com	2023-05-10	123 Main St, Stillwater, OK, 7407
2	Akshay	Arora	Hot Food	405-614-9951	M	akshay@email.com	2023-05-15	456 Elm St, Stillwater, OK, 74075
3	Ankit	Singh	Supervisor	405-614-9952	M	ankit@email.com	2023-06-01	789 Oak St, Stillwater, OK, 74076
4	Mudassir	Ahmad	Cashier	405-614-9953	M	mudassir@email.com	2023-06-10	101 Pine St, Stillwater, OK, 7407
5	Adithya	Popuri	Stocker	405-614-9954	M	adithya@email.com	2023-07-01	222 Maple St, Stillwater, OK, 740
6	Gaurav	Khatri	Cashier	405-614-9955	M	gaurav@email.com	2023-07-15	333 Walnut St, Stillwater, OK, 74
7	Kartik	Josyula	Stocker	405-614-9956	M	kartik@email.com	2023-08-01	444 Cedar St, Stillwater, OK, 740
8	Sophia	Dsouza	Coffee	405-614-9957	F	sophia@email.com	2023-08-10	555 Oak St, Stillwater, OK, 74081
9	Kinsey	McCool	Hot Food	405-614-9958	F	kinsey@email.com	2023-09-01	666 Pine St, Stillwater, OK, 7408
10	Bijoy	Thomas	Cashier	405-614-9957	M	bijoy@email.com	2023-09-15	777 Maple St, Stillwater, OK, 740
11	Devika	Kale	Cashier	405-614-9960	F	devika@email.com	2023-10-01	888 Walnut St, Stillwater, OK, 74
12	Ishan	Malpotra	Hot Food	405-614-9961	M	ishan@email.com	2023-10-10	999 Cedar St, Stillwater, OK, 740
13	Aman	Tayal	Coffee	485-614-9962	M	aman@email.com	2023-11-01	123 Pine St, Stillwater, OK, 7408
14	Prachiti	Garg	Stocker	405-614-9963	F	prachiti@email.com	2023-11-15	456 Elm St, Stillwater, OK, 74087
15	Adrian	Lee	Stocker	405-614-9964	F	adrian@email.com	2023-12-01	789 Oak St, Stillwater, OK, 74088
16	Grace	Bowman	Hot Food	405-614-9965	F	grace@email.com	2023-12-10	101 Maple St, Stillwater, OK, 740
17	Steph	Curry	Coffee	405-614-9966	M	steph@email.com	2024-01-01	222 Walnut St, Stillwater, OK, 74
18	Lauren	Phillips	Coffee	405-614-9967	F	lauren@email.com	2024-01-15	333 Cedar St, Stillwater, OK, 740
19	Brett	Hart	Coffee	405-614-9968	M	brett@email.com	2024-02-01	444 Oak St, Stillwater, OK, 74092
20	Paige	Jackson	Hot Food	405-614-9969	F	paige@email.com	2024-02-10	555 Pine St, Stillwater, OK, 7409

4)

```
-- what are the items in the inventory?
SELECT * FROM INVENTORY;
```

SQL ▾ 1 / 1 1 - 40 of 40

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
1	Milk	2017-08-11	1	4	20
2	Coffee Beans	2017-08-14	1	12	10
3	Sugar Pack	2017-08-08	1	1.25	100
4	Coffee Sleeves	2017-08-21	1	2	100
5	Soft Drinks	2017-08-28	1	1.19	50
6	Milk	2017-08-05	2	5	25
7	Coffee Beans	2017-08-01	2	14	12
8	Sugar Pack	2017-08-16	2	1.32	94
9	Coffee Sleeves	2017-08-22	2	2.23	100
10	Soft Drinks	2017-08-29	2	1.25	51
11	Milk	2017-09-13	1	4	22
12	Coffee Beans	2017-09-11	1	12	12
13	Sugar Packs	2017-09-28	1	1.25	102
14	Coffee Sleeves	2017-09-09	1	2	98
15	Soft Drinks	2017-09-21	1	1.19	45
16	Milk	2017-09-02	2	3.75	20
17	Coffee Beans	2017-09-10	2	12	12
18	Sugar Packs	2017-09-21	2	1.47	105
19	Coffee Sleeves	2017-09-28	2	2.2	100
20	Soft Drinks	2017-09-15	2	1.19	66
21	Milk	2017-10-05	1	3.75	22
22	Coffee Beans	2017-10-13	1	12	18
23	Sugar Packs	2017-10-19	1	1.47	10

5)

```
-- show the details of employees who have took leave:
SELECT * FROM LEAVE_DETAILS;
```

SQL ▾ 1 / 1 1 - 8 of 8

LEAVE_ID	EMP_ID	LEAVE_START	LEAVE_END	REPLACEMENT_ID
4	1	2017-08-30	2017-08-30	3
5	2	2017-09-03	2017-09-04	20
7	3	2017-09-09	2017-09-09	NULL
8	4	2017-09-15	2017-09-16	N
9	5	2017-09-24	2017-09-24	NULL
14	6	2017-10-05	2017-10-06	4
16	7	2017-10-30	2017-10-30	NULL
18	8	2017-11-11	2017-11-11	NULL

6)

```
-- Show all overtime details:
SELECT * FROM OVER_TIME;
```

SQL ▾ 1 / 1 1 - 3 of 3

VACANCY_ID	EMP_ID
21	5
41	8
42	19

7)

```
-- Display the phone numbers of all employees:
SELECT * FROM PHN_NO;
```

SQL ▾ 1 / 1 1 - 28 of 28

EMP_ID	PHONE_NUMBER
1	555-123-4567
1	555-987-6543
2	555-234-5678
2	555-876-5432
3	555-345-6789
3	555-765-4321
4	555-456-7890
5	555-567-8901
5	555-012-3456
6	555-678-9012
7	555-789-0123
7	555-210-9876
8	555-890-1234
9	555-901-2345
10	555-987-6543
10	555-234-5678
11	555-012-3456
12	555-123-4567
12	555-456-7890
13	555-234-5678
14	555-345-6789
15	555-456-7890
15	555-567-8901

8)

```
-- show all sales records:
SELECT * FROM SALES;
```

SQL ▾ 1 / 1 1 - 24 of 24

INVOICE_NUMBER	INVOICE_DATE	AMOUNT	UNIT_ID
INV001	2017-08-08	1	30
INV002	2017-08-12	1	45
INV003	2017-08-16	1	37
INV004	2017-08-25	1	27
INV005	2017-08-13	2	52
INV006	2017-08-17	2	42
INV007	2017-08-22	2	33
INV008	2017-08-27	2	27
INV009	2017-09-09	1	22
INV010	2017-09-13	1	34
INV011	2017-09-17	1	42
INV012	2017-09-26	1	29
INV013	2017-09-11	2	63
INV014	2017-09-12	2	53
INV015	2017-09-20	2	47
INV016	2017-09-27	2	26
INV017	2017-10-10	1	82
INV018	2017-10-17	1	65
INV019	2017-10-21	1	43
INV020	2017-10-28	1	46
INV021	2017-10-07	2	27
INV022	2017-10-11	2	31
INV023	2017-10-19	2	63

9)

```sql
-- show all schedules:
SELECT * FROM SCHEDULE;
```

SQL ▾ < 1 / 3 > 1 - 50

EMP_ID	DAY_	SHIFT_ID
1	Mon	17
1	Tue	17
1	Wed	17
1	Thu	17
1	Fri	17
1	Sat	17
3	Mon	18
3	Tue	18
3	Wed	18
3	Thu	18
3	Fri	18
3	Sat	18
4	Mon	1
4	Tue	1
4	Wed	1
4	Thu	1
19	Fri	1
19	Sat	1
5	Mon	3
5	Tue	3
5	Wed	3
5	Thu	3
5	Fri	3

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10)

```sql
-- Show all shifts:
SELECT * FROM SHIFT_;
```

SQL ▾ < 1 / 1 > 1 - 22 of 22

SHIFT_ID	BATCH_ID	UNIT_ID	CATEGORY_ID
1	1	1	2
2	2	1	2
3	1	1	4
4	1	1	4
5	2	1	3
6	3	1	3
7	3	1	5
8	4	1	5
9	5	2	2
10	1	2	2
11	1	2	4
12	3	2	4
13	5	2	3
14	4	2	3
15	4	2	5
16	3	2	5
17	1	1	1
18	1	2	1
19	2	1	2
20	2	1	3
21	3	2	4
22	3	2	5

11)

```sql
-- what are the units of the cafe?
SELECT * FROM UNIT;
```

SQL ▾ 1 / 1 1 - 2 of 2

UNIT_ID	UNIT_NAME	UNIT_LOCATION	SUP_EMP_ID
1	Cafe Libro	Library	1
2	Fast Break	Bennett Hall	3

12)

```sql
-- Select all vacancies:
SELECT * FROM VACANCY;
```

SQL ▾ 1 / 1 1 - 4 of 4

VACANCY_ID	SHIFT_ID	CATEGORY_ID	UNIT_ID
1	19	2	1
2	20	3	1
3	21	4	2
4	22	5	2

13)

```sql
-- which employees work in which units of the cafe?
SELECT EMPLOYEE.*, UNIT.UNIT_NAME
FROM EMPLOYEE
INNER JOIN UNIT ON EMPLOYEE.UNIT_ID = UNIT.UNIT_ID;
```

SQL ▾ 1 / 1 1 - 20 of 20

EMP_ID	F_NAME	L_NAME	POSITION	PHONE_NUMBER	GENDER	EMAIL_ID	JOIN_DATE	ADDRESS
1	Chirag	Bilimoria	Supervisor	405-614-9950	M	chirag@email.com	2023-05-10	123 Main St, Stillwater, OK, 7407
2	Akshay	Arora	Hot Food	405-614-9951	M	akshay@email.com	2023-05-15	456 Elm St, Stillwater, OK, 74075
3	Ankit	Singh	Supervisor	405-614-9952	M	ankit@email.com	2023-06-01	789 Oak St, Stillwater, OK, 74076
4	Mudassir	Ahmad	Cashier	405-614-9953	M	mudassir@email.com	2023-06-10	101 Pine St, Stillwater, OK, 7407
5	Adithya	Popuri	Stocker	405-614-9954	M	adithya@email.com	2023-07-01	222 Maple St, Stillwater, OK, 740
6	Gaurav	Khatri	Cashier	405-614-9955	M	gaurav@email.com	2023-07-15	333 Walnut St, Stillwater, OK, 74
7	Kartik	Josyula	Stocker	405-614-9956	M	kartik@email.com	2023-08-01	444 Cedar St, Stillwater, OK, 740
8	Sophia	Dsouza	Coffee	405-614-9957	F	sophia@email.com	2023-08-10	555 Oak St, Stillwater, OK, 74081
9	Kinsey	McCool	Hot Food	405-614-9958	F	kinsey@email.com	2023-09-01	666 Pine St, Stillwater, OK, 7408
10	Bijoy	Thomas	Cashier	405-614-9957	M	bijoy@email.com	2023-09-15	777 Maple St, Stillwater, OK, 740
11	Devika	Kale	Cashier	405-614-9960	F	devika@email.com	2023-10-01	888 Walnut St, Stillwater, OK, 74
12	Ishan	Malpotra	Hot Food	405-614-9961	M	ishan@email.com	2023-10-10	999 Cedar St, Stillwater, OK, 740
13	Aman	Tayal	Coffee	485-614-9962	M	aman@email.com	2023-11-01	123 Pine St, Stillwater, OK, 7408
14	Prachiti	Garg	Stocker	405-614-9963	F	prachiti@email.com	2023-11-15	456 Elm St, Stillwater, OK, 74087
15	Adrian	Lee	Stocker	405-614-9964	F	adrian@email.com	2023-12-01	789 Oak St, Stillwater, OK, 74088
16	Grace	Bowman	Hot Food	405-614-9965	F	grace@email.com	2023-12-10	101 Maple St, Stillwater, OK, 740
17	Steph	Curry	Coffee	405-614-9966	M	steph@email.com	2024-01-01	222 Walnut St, Stillwater, OK, 74
18	Lauren	Phillips	Coffee	405-614-9967	F	lauren@email.com	2024-01-15	333 Cedar St, Stillwater, OK, 740
19	Brett	Hart	Coffee	405-614-9968	M	brett@email.com	2024-02-01	444 Oak St, Stillwater, OK, 74092
20	Paige	Jackson	Hot Food	405-614-9969	F	paige@email.com	2024-02-10	555 Pine St, Stillwater, OK, 7409

14)

```sql
-- display the shift of each category of employees:
SELECT CATEGORY.*, SHIFT_.SHIFT_ID
FROM CATEGORY
INNER JOIN SHIFT_ ON CATEGORY.CATEGORY_ID = SHIFT_.CATEGORY_ID;
```

SQL ▾ < 1 / 1 > 1 - 22 of 22

CATEGORY_ID	CATEGORY_NAME	SHIFT_ID
2	CASHIER	1
2	CASHIER	2
4	STOCKER	3
4	STOCKER	4
3	COFFEE	5
3	COFFEE	6
5	HOT FOOD	7
5	HOT FOOD	8
2	CASHIER	9
2	CASHIER	10
4	STOCKER	11
4	STOCKER	12
3	COFFEE	13
3	COFFEE	14
5	HOT FOOD	15
5	HOT FOOD	16
1	SUPERVISOR	17
1	SUPERVISOR	18
2	CASHIER	19
3	COFFEE	20
4	STOCKER	21
5	HOT FOOD	22

15)

```sql
-- WHat is the status of each item in the inventory of each units?
SELECT INVENTORY.*, UNIT.UNIT_NAME
FROM INVENTORY
INNER JOIN UNIT ON INVENTORY.UNIT_ID = UNIT.UNIT_ID;
```

SQL ▾ 1 / 1 1 - 40 of 40

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY	UNIT_NAME
1	Milk	2017-08-11	1	4	20	Cafe Libro
2	Coffee Beans	2017-08-14	1	12	10	Cafe Libro
3	Sugar Pack	2017-08-08	1	1.25	100	Cafe Libro
4	Coffee Sleeves	2017-08-21	1	2	100	Cafe Libro
5	Soft Drinks	2017-08-28	1	1.19	50	Cafe Libro
6	Milk	2017-08-05	2	5	25	Fast Break
7	Coffee Beans	2017-08-01	2	14	12	Fast Break
8	Sugar Pack	2017-08-16	2	1.32	94	Fast Break
9	Coffee Sleeves	2017-08-22	2	2.23	100	Fast Break
10	Soft Drinks	2017-08-29	2	1.25	51	Fast Break
11	Milk	2017-09-13	1	4	22	Cafe Libro
12	Coffee Beans	2017-09-11	1	12	12	Cafe Libro
13	Sugar Packs	2017-09-28	1	1.25	102	Cafe Libro
14	Coffee Sleeves	2017-09-09	1	2	98	Cafe Libro
15	Soft Drinks	2017-09-21	1	1.19	45	Cafe Libro
16	Milk	2017-09-02	2	3.75	20	Fast Break
17	Coffee Beans	2017-09-10	2	12	12	Fast Break
18	Sugar Packs	2017-09-21	2	1.47	105	Fast Break
19	Coffee Sleeves	2017-09-28	2	2.2	100	Fast Break
20	Soft Drinks	2017-09-15	2	1.19	66	Fast Break
21	Milk	2017-10-05	1	3.75	22	Cafe Libro
22	Coffee Beans	2017-10-13	1	12	18	Cafe Libro

16)

```sql
-- which employees have taken leave?
SELECT F_NAME, L_NAME
FROM EMPLOYEE
INNER JOIN LEAVE_DETAILS ON EMPLOYEE.EMP_ID = LEAVE_DETAILS.EMP_ID;
```

SQL ▼ 1 / 1 1 - 8 c

F_NAME	L_NAME
Chirag	Bilimoria
Akshay	Arora
Ankit	Singh
Mudassir	Ahmad
Adithya	Popuri
Gaurav	Khatri
Kartik	Josyula
Sophia	Dsouza

17)

```sql
-- what are all the shifts with respect to batches:
SELECT SHIFT_.*, BATCHES.BATCH_ID
FROM SHIFT_
INNER JOIN BATCHES ON SHIFT_.BATCH_ID = BATCHES.BATCH_ID;
```

SQL ▾ 1 / 1 1 - 22 of 22

SHIFT_ID	BATCH_ID	UNIT_ID	CATEGORY_ID	BATCH_ID
1	1	1	2	1
2	2	1	2	2
3	1	1	4	1
4	1	1	4	1
5	2	1	3	2
6	3	1	3	3
7	3	1	5	3
8	4	1	5	4
9	5	2	2	5
10	1	2	2	1
11	1	2	4	1
12	3	2	4	3
13	5	2	3	5
14	4	2	3	4
15	4	2	5	4
16	3	2	5	3
17	1	1	1	1
18	1	2	1	1
19	2	1	2	2
20	2	1	3	2
21	3	2	4	3
22	3	2	5	3

18)

```sql
-- who are the supervisors of each unit?
SELECT UNIT.*, EMPLOYEE.F_NAME, EMPLOYEE.L_NAME
FROM UNIT
INNER JOIN EMPLOYEE ON UNIT.SUP_EMP_ID = EMPLOYEE.EMP_ID;
```

SQL ▾ 1 / 1 1 - 2 of 2

UNIT_ID	UNIT_NAME	UNIT_LOCATION	SUP_EMP_ID	F_NAME	L_NAME
1	Cafe Libro	Library	1	Chirag	Bilimoria
2	Fast Break	Bennett Hall	3	Ankit	Singh

19)

```sql
-- What is the total number of sales invoices issued after '2017-06-01'?
SELECT COUNT(*) AS Total_Sales_Invoices FROM SALES WHERE INVOICE_DATE > '2017-06-01';
```

SQL ▾ 1 / 1 1 - 1

Total_Sales_Invoices
24

20)

```sql
-- which employees belong to which categories?
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME, CATEGORY.CATEGORY_NAME
FROM EMPLOYEE
INNER JOIN CATEGORY ON EMPLOYEE.CATEGORY_ID = CATEGORY.CATEGORY_ID;
```

SQL ▾ < 1 / 1 > 1 - 20 of 20

EMP_ID	F_NAME	L_NAME	CATEGORY_NAME
1	Chirag	Bilimoria	SUPERVISOR
2	Akshay	Arora	CASHIER
3	Ankit	Singh	SUPERVISOR
4	Mudassir	Ahmad	COFFEE
5	Adithya	Popuri	STOCKER
6	Gaurav	Khatri	COFFEE
7	Kartik	Josyula	STOCKER
8	Sophia	Dsouza	HOT FOOD
9	Kinsey	McCool	CASHIER
10	Bijoy	Thomas	COFFEE
11	Devika	Kale	COFFEE
12	Ishan	Malpotra	CASHIER
13	Aman	Tayal	HOT FOOD
14	Prachiti	Garg	STOCKER
15	Adrian	Lee	STOCKER
16	Grace	Bowman	CASHIER
17	Steph	Curry	HOT FOOD
18	Lauren	Phillips	HOT FOOD
19	Brett	Hart	HOT FOOD
20	Paige	Jackson	CASHIER

21)

```sql
-- List all employees with a salary greater than 50000:
SELECT * FROM EMPLOYEE WHERE SALARY > 50000;
```

SQL ▾ 1 / 1 1 - 2 of 2

EMP_ID	F_NAME	L_NAME	POSITION	PHONE_NUMBER	GENDER	EMAIL_ID	JOIN_DATE	ADDRESS	UNI
3	Ankit	Singh	Supervisor	405-614-9952	M	ankit@email.com	2023-06-01	789 Oak St, Stillwater, OK, 74076	1
17	Steph	Curry	Coffee	405-614-9966	M	steph@email.com	2024-01-01	222 Walnut St, Stillwater, OK, 74090	1

22)

```sql
-- Retrieve the inventory items with a cost per unit less than 10:
SELECT * FROM INVENTORY WHERE COST_PER_UNIT < 10;
```

SQL ▾ 1 / 1 1 - 32 of 32

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
1	Milk	2017-08-11	1	4	20
3	Sugar Pack	2017-08-08	1	1.25	100
4	Coffee Sleeves	2017-08-21	1	2	100
5	Soft Drinks	2017-08-28	1	1.19	50
6	Milk	2017-08-05	2	5	25
8	Sugar Pack	2017-08-16	2	1.32	94
9	Coffee Sleeves	2017-08-22	2	2.23	100
10	Soft Drinks	2017-08-29	2	1.25	51
11	Milk	2017-09-13	1	4	22
13	Sugar Packs	2017-09-28	1	1.25	102
14	Coffee Sleeves	2017-09-09	1	2	98
15	Soft Drinks	2017-09-21	1	1.19	45
16	Milk	2017-09-02	2	3.75	20
18	Sugar Packs	2017-09-21	2	1.47	105
19	Coffee Sleeves	2017-09-28	2	2.2	100
20	Soft Drinks	2017-09-15	2	1.19	66
21	Milk	2017-10-05	1	3.75	22
23	Sugar Packs	2017-10-19	1	1.47	10
24	Coffee Sleeves	2017-10-24	1	2.2	90
25	Soft Drinks	2017-10-27	1	1.19	70
26	Milk	2017-10-01	2	3.75	25
28	Sugar Packs	2017-10-20	2	1.47	20
29	Coffee Sleeves	2017-10-29	2	2.2	20

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23)

```
-- Retrieve the phone numbers of the employees with EMP_IDs 7, 8 and 9:
SELECT * FROM PHN_NO WHERE EMP_ID IN (7, 8, 9);
```

SQL ▾ 1 / 1 1 -

EMP_ID	PHONE_NUMBER
7	555-789-0123
7	555-210-9876
8	555-890-1234
9	555-901-2345

24)

```
-- Who are all the employees with a rating of 4.
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME, RATING FROM EMPLOYEE WHERE RATING = 4;
```

SQL ▾ 1 / 1 1 - 4 of 4

EMP_ID	F_NAME	L_NAME	RATING
2	Akshay	Arora	4
9	Kinsey	McCool	4
14	Prachiti	Garg	4
18	Lauren	Phillips	4

25)

```
-- Find the inventory items with a quantity less than 50 and a cost per unit greater than 6.
SELECT * FROM INVENTORY WHERE QUANTITY < 50 AND COST_PER_UNIT > 6;
```

SQL ▾ 1 / 1 1 - 7 of 7

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
2	Coffee Beans	2017-08-14	1	12	10
7	Coffee Beans	2017-08-01	2	14	12
12	Coffee Beans	2017-09-11	1	12	12
17	Coffee Beans	2017-09-10	2	12	12
22	Coffee Beans	2017-10-13	1	12	18
27	Coffee Beans	2017-10-10	2	12	15
32	Coffee Beans	2017-11-10	1	12	43

26)

```sql
-- List all employees with a position of 'Supervisor' and a salary greater than 45000:
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME, SALARY
FROM EMPLOYEE
WHERE POSITION = 'Supervisor' AND SALARY > 45000;
```

SQL ▾ 1 / 1 1 - 2 of 2

EMP_ID	F_NAME	L_NAME	SALARY
1	Chirag	Bilimoria	50000
3	Ankit	Singh	55000

27)

```sql
-- List all employees with a qualification of 'Bachelor's Degree'.
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME
FROM EMPLOYEE
WHERE QUALIFICATION = 'Bachelor Degree';
```

SQL ▾ 1 / 1 1

EMP_ID	F_NAME	L_NAME
1	Chirag	Bilimoria
8	Sophia	Dsouza
10	Bijoy	Thomas
12	Ishan	Malpotra
16	Grace	Bowman
19	Brett	Hart

28)

```
-- Retrieve the employees who have a salary less than 40000 or a rating greater than 4.
SELECT * FROM EMPLOYEE WHERE SALARY < 40000 OR RATING > 4;
```

SQL ▾ 1 / 1 1 - 15 of 15

EMP_ID	F_NAME	L_NAME	POSITION	PHONE_NUMBER	GENDER	EMAIL_ID	JOIN_DATE	ADDRESS
1	Chirag	Bilimoria	Supervisor	405-614-9950	M	chirag@email.com	2023-05-10	123 Main St, Stillwater, OK, 7407
3	Ankit	Singh	Supervisor	405-614-9952	M	ankit@email.com	2023-06-01	789 Oak St, Stillwater, OK, 74076
4	Mudassir	Ahmad	Cashier	405-614-9953	M	mudassir@email.com	2023-06-10	101 Pine St, Stillwater, OK, 7407
5	Adithya	Popuri	Stocker	405-614-9954	M	adithya@email.com	2023-07-01	222 Maple St, Stillwater, OK, 740
6	Gaurav	Khatri	Cashier	405-614-9955	M	gaurav@email.com	2023-07-15	333 Walnut St, Stillwater, OK, 74
7	Kartik	Josyula	Stocker	405-614-9956	M	kartik@email.com	2023-08-01	444 Cedar St, Stillwater, OK, 740
8	Sophia	Dsouza	Coffee	405-614-9957	F	sophia@email.com	2023-08-10	555 Oak St, Stillwater, OK, 74081
10	Bijoy	Thomas	Cashier	405-614-9957	M	bijoy@email.com	2023-09-15	777 Maple St, Stillwater, OK, 740
11	Devika	Kale	Cashier	405-614-9960	F	devika@email.com	2023-10-01	888 Walnut St, Stillwater, OK, 74
12	Ishan	Malpotra	Hot Food	405-614-9961	M	ishan@email.com	2023-10-10	999 Cedar St, Stillwater, OK, 740
14	Prachiti	Garg	Stocker	405-614-9963	F	prachiti@email.com	2023-11-15	456 Elm St, Stillwater, OK, 74087
15	Adrian	Lee	Stocker	405-614-9964	F	adrian@email.com	2023-12-01	789 Oak St, Stillwater, OK, 74088
16	Grace	Bowman	Hot Food	405-614-9965	F	grace@email.com	2023-12-10	101 Maple St, Stillwater, OK, 740
17	Steph	Curry	Coffee	405-614-9966	M	steph@email.com	2024-01-01	222 Walnut St, Stillwater, OK, 74
19	Brett	Hart	Coffee	405-614-9968	M	brett@email.com	2024-02-01	444 Oak St, Stillwater, OK, 74092

29)

```sql
-- List all employees who are female and joined after '2017-01-01'.
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME, GENDER, JOIN_DATE
FROM EMPLOYEE WHERE GENDER = 'F' AND JOIN_DATE > '2023-01-01';
```

SQL ▾ < 1 / 1 > 1 - 8 of 8

EMP_ID	F_NAME	L_NAME	GENDER	JOIN_DATE
8	Sophia	Dsouza	F	2023-08-10
9	Kinsey	McCool	F	2023-09-01
11	Devika	Kale	F	2023-10-01
14	Prachiti	Garg	F	2023-11-15
15	Adrian	Lee	F	2023-12-01
16	Grace	Bowman	F	2023-12-10
18	Lauren	Phillips	F	2024-01-15
20	Paige	Jackson	F	2024-02-10

30)

```sql
-- Find the inventory items with a description starting with 'A'.
SELECT * FROM INVENTORY WHERE ITEM_DESC LIKE 'C%';
```

SQL ▾ 1 / 1 1 - 16 of 16

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
2	Coffee Beans	2017-08-14	1	12	10
4	Coffee Sleeves	2017-08-21	1	2	100
7	Coffee Beans	2017-08-01	2	14	12
9	Coffee Sleeves	2017-08-22	2	2.23	100
12	Coffee Beans	2017-09-11	1	12	12
14	Coffee Sleeves	2017-09-09	1	2	98
17	Coffee Beans	2017-09-10	2	12	12
19	Coffee Sleeves	2017-09-28	2	2.2	100
22	Coffee Beans	2017-10-13	1	12	18
24	Coffee Sleeves	2017-10-24	1	2.2	90
27	Coffee Beans	2017-10-10	2	12	15
29	Coffee Sleeves	2017-10-29	2	2.2	20
32	Coffee Beans	2017-11-10	1	12	43
34	Coffee Sleeves	2017-11-26	1	2.2	200
37	Coffee Beans	2017-11-02	2	12	79
39	Coffee Sleeves	2017-11-28	2	2.2	205

31)

```sql
-- Find the inventory items with a cost per unit between 10 and 20.
SELECT * FROM INVENTORY WHERE COST_PER_UNIT BETWEEN 10 AND 20;
```

SQL ▾ 1 / 1 1 - 8 of 8

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
2	Coffee Beans	2017-08-14	1	12	10
7	Coffee Beans	2017-08-01	2	14	12
12	Coffee Beans	2017-09-11	1	12	12
17	Coffee Beans	2017-09-10	2	12	12
22	Coffee Beans	2017-10-13	1	12	18
27	Coffee Beans	2017-10-10	2	12	15
32	Coffee Beans	2017-11-10	1	12	43
37	Coffee Beans	2017-11-02	2	12	79

32)

```sql
-- Retrieve the employees who joined before '2023-09-31' and have a rating greater than 5.
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME, JOIN_DATE, RATING
FROM EMPLOYEE
WHERE JOIN_DATE < '2023-09-31' AND RATING > 4;
```

SQL ▾ 1 / 1 1 - 6 of 6

EMP_ID	F_NAME	L_NAME	JOIN_DATE	RATING
1	Chirag	Bilimoria	2023-05-10	4.5
3	Ankit	Singh	2023-06-01	4.7
4	Mudassir	Ahmad	2023-06-10	4.2
6	Gaurav	Khatri	2023-07-15	4.1
8	Sophia	Dsouza	2023-08-10	4.6
10	Bijoy	Thomas	2023-09-15	4.3

33)

```
-- Retrieve the employees who have taken leaves but haven't been assigned replacements.
SELECT * FROM LEAVE_DETAILS WHERE REPLACEMENT_ID IS NULL;
```

SQL ▾ 1 / 1 1 - 4 of 4

LEAVE_ID	EMP_ID	LEAVE_START	LEAVE_END	REPLACEMENT_ID
7	3	2017-09-09	2017-09-09	NULL
9	5	2017-09-24	2017-09-24	NULL
16	7	2017-10-30	2017-10-30	NULL
18	8	2017-11-11	2017-11-11	NULL

34)

```
-- Find the inventory items whose stock is less than 15
SELECT * FROM INVENTORY WHERE QUANTITY <15;
```

SQL ▾ 1 / 1 1 - 5 of 5

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
2	Coffee Beans	2017-08-14	1	12	10
7	Coffee Beans	2017-08-01	2	14	12
12	Coffee Beans	2017-09-11	1	12	12
17	Coffee Beans	2017-09-10	2	12	12
23	Sugar Packs	2017-10-19	1	1.47	10

35)

```sql
-- List all employees who are male.
SELECT * FROM EMPLOYEE WHERE GENDER = 'M';
```

SQL ▾ 1 / 1

EMP_ID	F_NAME	L_NAME	POSITION	PHONE_NUMBER	GENDER
1	Chirag	Bilimoria	Supervisor	405-614-9950	M
2	Akshay	Arora	Hot Food	405-614-9951	M
3	Ankit	Singh	Supervisor	405-614-9952	M
4	Mudassir	Ahmad	Cashier	405-614-9953	M
5	Adithya	Popuri	Stocker	405-614-9954	M
6	Gaurav	Khatri	Cashier	405-614-9955	M
7	Kartik	Josyula	Stocker	405-614-9956	M
10	Bijoy	Thomas	Cashier	405-614-9957	M
12	Ishan	Malpotra	Hot Food	405-614-9961	M
13	Aman	Tayal	Coffee	485-614-9962	M
17	Steph	Curry	Coffee	405-614-9966	M
19	Brett	Hart	Coffee	405-614-9968	M

36)

```sql
-- List all employees who are not supervisors:
SELECT EMPLOYEE.EMP_ID,F_NAME,L_NAME,POSITION
FROM EMPLOYEE WHERE POSITION != 'Supervisor';
```

SQL ▾ < 1 / 1 > 1 - 18 of 18

EMP_ID	F_NAME	L_NAME	POSITION
2	Akshay	Arora	Hot Food
4	Mudassir	Ahmad	Cashier
5	Adithya	Popuri	Stocker
6	Gaurav	Khatri	Cashier
7	Kartik	Josyula	Stocker
8	Sophia	Dsouza	Coffee
9	Kinsey	McCool	Hot Food
10	Bijoy	Thomas	Cashier
11	Devika	Kale	Cashier
12	Ishan	Malpotra	Hot Food
13	Aman	Tayal	Coffee
14	Prachiti	Garg	Stocker
15	Adrian	Lee	Stocker
16	Grace	Bowman	Hot Food
17	Steph	Curry	Coffee
18	Lauren	Phillips	Coffee
19	Brett	Hart	Coffee
20	Paige	Jackson	Hot Food

37)

```sql
-- Retrieve the employees who have taken leaves and their leave ended before '2023-06-01'.
SELECT * FROM LEAVE_DETAILS WHERE LEAVE_END < '2023-06-01';
```

SQL ▾ 1 / 1 1 - 8 of 8

LEAVE_ID	EMP_ID	LEAVE_START	LEAVE_END	REPLACEMENT_ID
4	1	2017-08-30	2017-08-30	3
5	2	2017-09-03	2017-09-04	20
7	3	2017-09-09	2017-09-09	NULL
8	4	2017-09-15	2017-09-16	N
9	5	2017-09-24	2017-09-24	NULL
14	6	2017-10-05	2017-10-06	4
16	7	2017-10-30	2017-10-30	NULL
18	8	2017-11-11	2017-11-11	NULL

38)

```sql
-- Find the total number of shifts for unit 1.
SELECT COUNT(*) AS Total_Shifts FROM SHIFT_ WHERE UNIT_ID = 1;
```

SQL ▾

Total_Shifts
11

39)

```sql
-- Find the inventory items with a quantity between 10 and 20.
SELECT * FROM INVENTORY WHERE QUANTITY BETWEEN 10 AND 20;
```

SQL ▾ 1 / 1 1 - 11 of 11

ITEM_ID	ITEM_DESC	DATE_	UNIT_ID	COST_PER_UNIT	QUANTITY
1	Milk	2017-08-11	1	4	20
2	Coffee Beans	2017-08-14	1	12	10
7	Coffee Beans	2017-08-01	2	14	12
12	Coffee Beans	2017-09-11	1	12	12
16	Milk	2017-09-02	2	3.75	20
17	Coffee Beans	2017-09-10	2	12	12
22	Coffee Beans	2017-10-13	1	12	18
23	Sugar Packs	2017-10-19	1	1.47	10
27	Coffee Beans	2017-10-10	2	12	15
28	Sugar Packs	2017-10-20	2	1.47	20
29	Coffee Sleeves	2017-10-29	2	2.2	20

40)

```sql
-- List all employees who have a qualification other than 'High School'.
SELECT EMPLOYEE.EMP_ID, F_NAME, L_NAME, QUALIFICATION
FROM EMPLOYEE
WHERE QUALIFICATION != 'High School';
```

SQL ▾ < 1 / 1 > 1 - 16 of 16

EMP_ID	F_NAME	L_NAME	QUALIFICATION
1	Chirag	Bilimoria	Bachelor Degree
2	Akshay	Arora	Diploma
3	Ankit	Singh	Master Degree
5	Adithya	Popuri	None
6	Gaurav	Khatri	Diploma
7	Kartik	Josyula	None
8	Sophia	Dsouza	Bachelor Degree
10	Bijoy	Thomas	Bachelor Degree
11	Devika	Kale	Diploma
12	Ishan	Malpotra	Bachelor Degree
14	Prachiti	Garg	None
15	Adrian	Lee	None
16	Grace	Bowman	Bachelor Degree
17	Steph	Curry	Master Degree
18	Lauren	Phillips	Diploma
19	Brett	Hart	Bachelor Degree