National University of Computer and Emerging Sciences (FAST)
Department of FSM

Introduction to Database Management Systems
Semester Project

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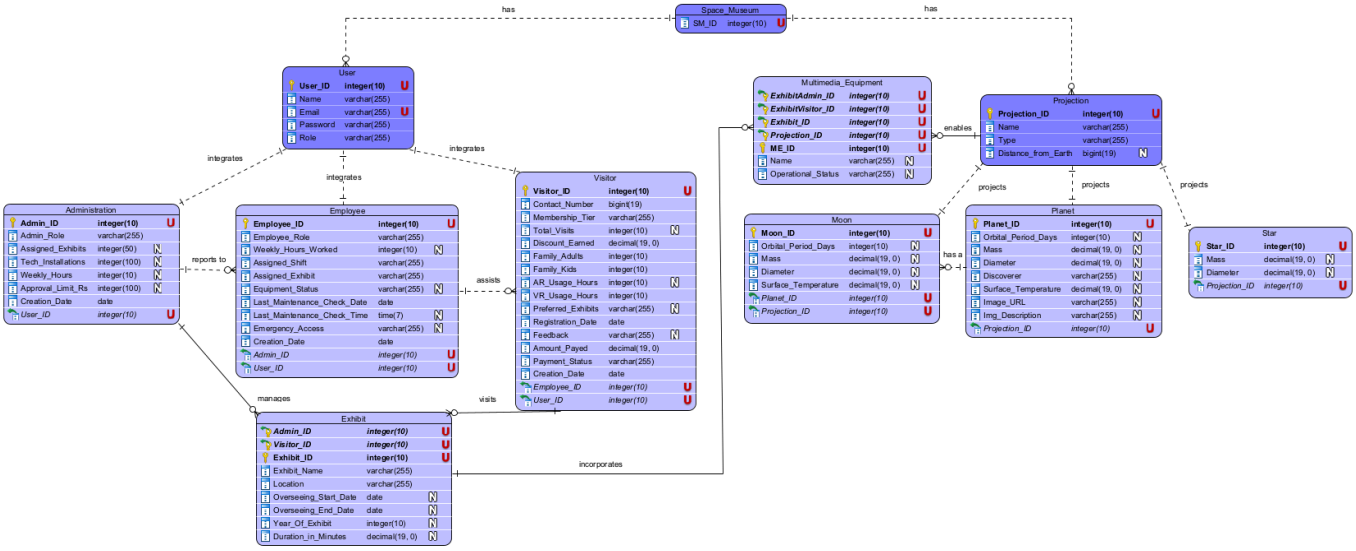
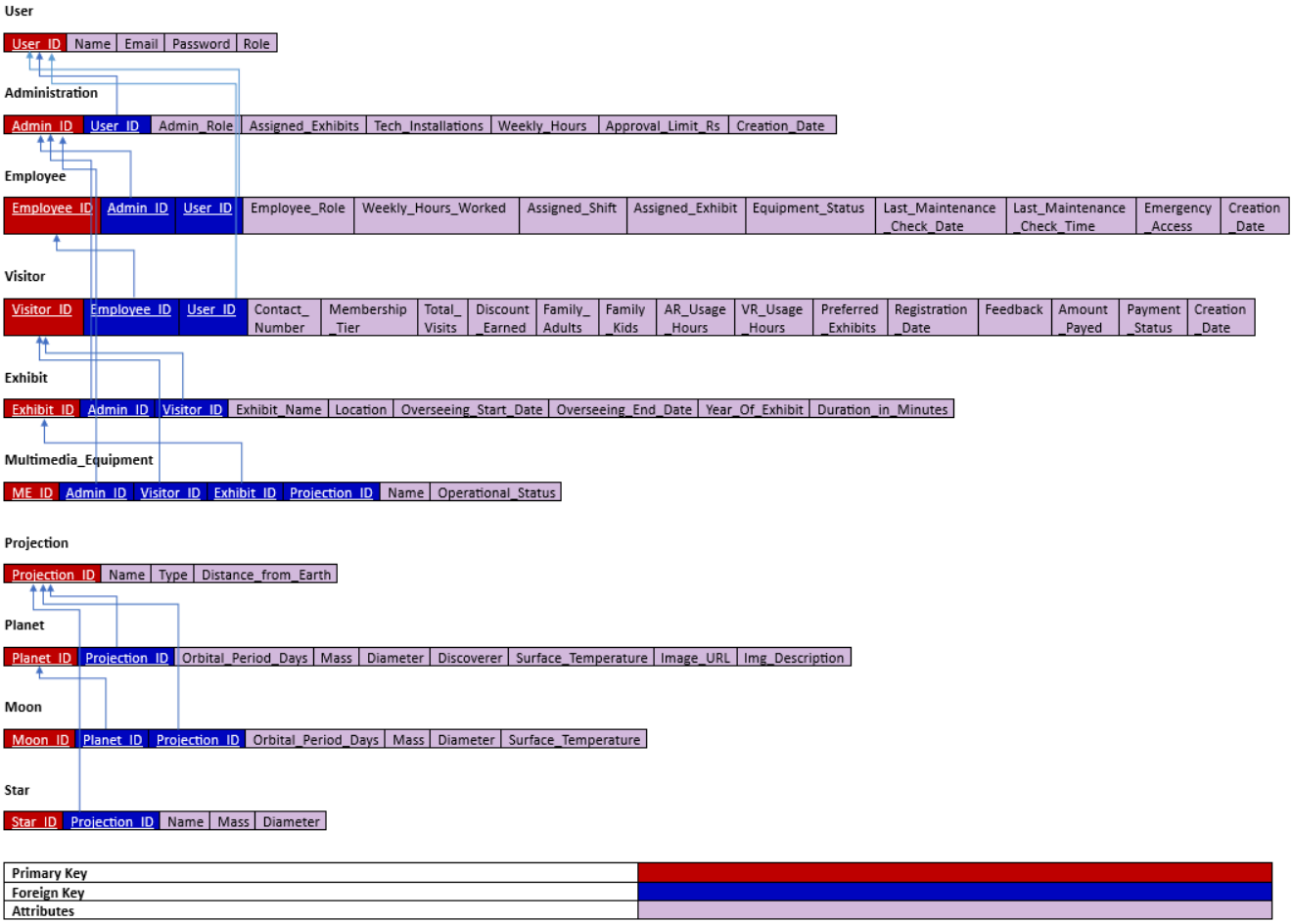
Space Museum Database

ERD Diagram:



Relational Schema and Mapping:



SQL Queries Output:

1. Administration Interface:

```
Select * from Administration;
Select * from Users;
```

91 %

Results Messages

	Admin_ID	Admin_Role	Assigned_Exhibits	Tech_Installations	Weekly_Hours	Approval_Limit_Rs	Creation_Date	User_ID
1	101	CEO	NULL	NULL	50	1000000	2020-01-15	1
2	102	Senior Curator	15	8	45	500000	2020-03-10	2
3	103	Curator	10	5	40	250000	2021-02-20	3
4	104	Curator	12	6	40	250000	2021-03-15	4
5	105	Curator	8	4	40	250000	2021-04-05	5
6	106	Senior DEM	5	20	45	300000	2020-06-18	6
7	107	DEM	3	15	40	200000	2021-01-22	7
8	108	DEM	4	18	40	200000	2021-02-10	8
9	109	DEM	2	12	40	200000	2021-05-30	9
10	110	Exhibit Manager	20	10	45	400000	2020-05-12	10
11	111	Security Head	NULL	NULL	50	300000	2020-02-28	11

```
Select * from Users;
```

91 %

Results Messages

	User_ID	Name	Email	Password	Role
1	1	Neil D. Tyson	neil.tyson@spacemuseum.com	Tys0n@Cosmos	Administration
2	2	Carl Sagan	carl.sagan@spacemuseum.com	Sag@nCosmos	Administration
3	3	Jocelyn Bell	jocelyn.bell@spacemuseum.com	Puls@r123	Administration
4	4	Edwin Hubble	edwin.hubble@spacemuseum.com	Hubb1eTelesc0pe	Administration
5	5	Vera Rubin	vera.rubin@spacemuseum.com	DarkM@tter1	Administration
6	6	Katherine Johnson	katherine.johnson@spacemuseum.com	N@saHero1	Administration
7	7	Wernher von Braun	wernher.braun@spacemuseum.com	R0cketSci3nce	Administration
8	8	Nancy Roman	nancy.roman@spacemuseum.com	Hubb1eM0m	Administration
9	9	George Ellery Hale	george.hale@spacemuseum.com	T3lescop3s	Administration
10	10	Amina Khan	amina.khan@spacemuseum.com	Amy@1234	Administration
11	11	Levi Ackerman	levi.ackerman@spacemuseum.com	Levi@7788	Administration

```sql
--1.List all administrators' IDs, their roles, names, and emails by joining the Administration and Users tables.

Select A.Admin_ID, A.Admin_Role, U.Name, U.Email
from Administration A
Join Users U ON A.User_ID = U.User_ID;
```

91 %

Results | Messages

	Admin_ID	Admin_Role	Name	Email
1	101	CEO	Neil D. Tyson	neil.tyson@spacemuseum.com
2	102	Senior Curator	Carl Sagan	carl.sagan@spacemuseum.com
3	103	Curator	Jocelyn Bell	jocelyn.bell@spacemuseum.com
4	104	Curator	Edwin Hubble	edwin.hubble@spacemuseum.com
5	105	Curator	Vera Rubin	vera.rubin@spacemuseum.com
6	106	Senior DEM	Katherine Johnson	katherine.johnson@spacemuseum.com
7	107	DEM	Wernher von Braun	wernher.braun@spacemuseum.com
8	108	DEM	Nancy Roman	nancy.roman@spacemuseum.com
9	109	DEM	George Ellery Hale	george.hale@spacemuseum.com
10	110	Exhibit Manager	Amina Khan	amina.khan@spacemuseum.com
11	111	Security Head	Levi Ackerman	levi.ackerman@spacemuseum.com

```sql
--2.Display the names and roles of all admins who are assigned more than 3 exhibits

Select U.Name, A.Admin_Role
from Administration A
JOIN Users U ON A.User_ID = U.User_ID
where A.Assigned_Exhibits > 3
```

91 %

Results | Messages

	Name	Admin_Role
1	Carl Sagan	Senior Curator
2	Jocelyn Bell	Curator
3	Edwin Hubble	Curator
4	Vera Rubin	Curator
5	Katherine Johnson	Senior DEM
6	Nancy Roman	DEM
7	Amina Khan	Exhibit Manager

```sql
--3.Find users whose emails belong to the space museum official domain

SELECT
    Name,
    Email,
    CASE
        WHEN Email LIKE '%@spacemuseum.com' THEN 'Official Domain'
        ELSE 'External Domain'
    END AS Email_Type
FROM Users;
```

91 %

Results | Messages

	Name	Email	Email_Type
1	Neil D. Tyson	neil.tyson@spacemuseum.com	Official Domain
2	Carl Sagan	carl.sagan@spacemuseum.com	Official Domain
3	Jocelyn Bell	jocelyn.bell@spacemuseum.com	Official Domain
4	Edwin Hubble	edwin.hubble@spacemuseum.com	Official Domain
5	Vera Rubin	vera.rubin@spacemuseum.com	Official Domain
6	Katherine Johnson	katherine.johnson@spacemuseum.com	Official Domain
7	Wernher von Braun	wernher.braun@spacemuseum.com	Official Domain
8	Nancy Roman	nancy.roman@spacemuseum.com	Official Domain
9	George Ellery Hale	george.hale@spacemuseum.com	Official Domain
10	Amina Khan	amina.khan@spacemuseum.com	Official Domain
11	Levi Ackerman	levi.ackerman@spacemuseum.com	Official Domain

```sql
--4.For each admin role, calculate the average number of weekly working hours.

Select Admin_Role, AVG(Weekly_Hours) AS Avg_Weekly_Hours
from Administration
group by Admin_Role;
```

91 %

Results | Messages

	Admin_Role	Avg_Weekly_Hours
1	CEO	50
2	Curator	40
3	DEM	40
4	Exhibit Manager	45
5	Finance Officer	45
6	HR Coordinator	40
7	Security Head	50
8	Senior Curator	45
9	Senior DEM	45

```sql
--5.Find the name of the admin who has the highest number of assigned exhibits.

Select TOP 1 U.Name, A.Assigned_Exhibits
from Administration A
JOIN Users U ON A.User_ID = U.User_ID
order by A.Assigned_Exhibits DESC;
```

91 %

Results | Messages

	Name	Assigned_Exhibits
1	Amina Khan	20

```sql
--6.List all admin names and their approval limits where the approval limit is more than the average approval limit of all admins.

Select U.Name, A.Approval_Limit_Rs
from Administration A
JOIN Users U ON A.User_ID = U.User_ID
where A.Approval_Limit_Rs > (
    Select AVG(Approval_Limit_Rs)
    from Administration
);
```

91 %

Results | Messages

	Name	Approval_Limit_Rs
1	Neil D. Tyson	1000000
2	Carl Sagan	500000
3	Amina Khan	400000
4	Emre Altan	800000

```sql
---7.Find all admins whose names contain the letter 'e' anywhere in their name.

Select U.Name, A.Admin_Role
from Administration A
JOIN Users U ON A.User_ID = U.User_ID
where U.Name LIKE '%e%';
```

91 %

Results | Messages

	Name	Admin_Role
1	Neil D. Tyson	CEO
2	Jocelyn Bell	Curator
3	Edwin Hubble	Curator
4	Vera Rubin	Curator
5	Katherine Johnson	Senior DEM
6	Wernher von Braun	DEM
7	George Ellery Hale	DEM
8	Levi Ackerman	Security Head
9	Annie Leonhart	HR Coordinator
10	Emre Altan	Finance Officer

```sql
--8. EXHIBIT PERFORMANCE REPORT
CREATE PROCEDURE ExhibitPerformanceReport @sort_by VARCHAR(20) = 'popularity' --popularity or revenue
AS
BEGIN
    SELECT
        e.Exhibit_ID,
        e.Exhibit_Name,
        CASE
            WHEN e.Exhibit_Name LIKE '%VR%' OR e.Exhibit_Name LIKE '%AR%' THEN 'Interactive'
            WHEN e.Exhibit_Name LIKE '%Space%' THEN 'Space Exploration'
            ELSE 'General Astronomy'
        END AS Exhibit_Type,
        COUNT(v.Visitor_ID) AS Visitor_Count,
        AVG(e.Duration_in_Minutes) AS Avg_Duration_Minutes,
        COUNT(v.Visitor_ID) * 100.0 / (SELECT COUNT(*) FROM Visitor) AS Capacity_Utilization_Pct,
        SUM(v.Amount_Payed) AS Total_Revenue
    FROM Exhibit e
    LEFT JOIN Visitor v ON e.Visitor_ID = v.Visitor_ID
    GROUP BY e.Exhibit_ID, e.Exhibit_Name
    ORDER BY
        CASE WHEN @sort_by = 'revenue' THEN SUM(v.Amount_Payed) ELSE COUNT(v.Visitor_ID) END DESC;
END;

-- Execute with default sorting by popularity
EXEC ExhibitPerformanceReport;

-- Execute sorting by revenue
EXEC ExhibitPerformanceReport @sort_by = 'revenue';
```

Results | Messages

	Exhibit_ID	Exhibit_Name	Exhibit_Type	Visitor_Count	Avg_Duration_Minutes	Capacity_Utilization_Pct	Total_Revenue
1	401	Journey to Mars	Interactive	1	60.000000	6.666666666666	12000
2	402	Satellite Lab	General Astronomy	1	50.000000	6.666666666666	8000
3	403	Lunar Landin...	Interactive	1	55.000000	6.666666666666	5000
4	404	Astronaut Fitn...	General Astronomy	1	40.000000	6.666666666666	5000
5	405	Deep Space ...	Space Exploration	1	70.000000	6.666666666666	14000
6	406	Black Hole Ex...	General Astronomy	1	65.000000	6.666666666666	9000
7	407	Alien Life Exhi...	General Astronomy	1	50.000000	6.666666666666	11000
8	408	Robotic Rove...	General Astronomy	1	45.000000	6.666666666666	5000
9	409	Space Weath...	Space Exploration	1	60.000000	6.666666666666	3000
10	410	Gravity Explor...	General Astronomy	1	55.000000	6.666666666666	5000
11	411	Mars Habitat ...	Interactive	1	50.000000	6.666666666666	7000
12	412	Comet Tracki...	General Astronomy	1	40.000000	6.666666666666	5000
13	413	Rocket Engin...	General Astronomy	1	65.000000	6.666666666666	4000
14	414	Hubble Spac...	Space Exploration	1	70.000000	6.666666666666	12500
15	415	Mission Contr...	General Astronomy	1	75.000000	6.666666666666	8500

Results | Messages

	Exhibit_ID	Exhibit_Name	Exhibit_Type	Visitor_Count	Avg_Duration_Minutes	Capacity_Utilization_Pct	Total_Revenue
1	405	Deep Space Telescope	Space Exploration	1	70.000000	6.666666666666	14000
2	414	Hubble Space Telescope	Space Exploration	1	70.000000	6.666666666666	12500
3	401	Journey to Mars	Interactive	1	60.000000	6.666666666666	12000
4	407	Alien Life Exhibit	General Astronomy	1	50.000000	6.666666666666	11000
5	406	Black Hole Experience	General Astronomy	1	65.000000	6.666666666666	9000
6	415	Mission Control Room	General Astronomy	1	75.000000	6.666666666666	8500
7	402	Satellite Lab	General Astronomy	1	50.000000	6.666666666666	8000
8	411	Mars Habitat Dome	Interactive	1	50.000000	6.666666666666	7000
9	412	Comet Tracking Station	General Astronomy	1	40.000000	6.666666666666	5000
10	410	Gravity Exploration Zone	General Astronomy	1	55.000000	6.666666666666	5000
11	403	Lunar Landing Simulation	Interactive	1	55.000000	6.666666666666	5000
12	404	Astronaut Fitness Zone	General Astronomy	1	40.000000	6.666666666666	5000
13	408	Robotic Rover Showcase	General Astronomy	1	45.000000	6.666666666666	5000
14	413	Rocket Engine Display	General Astronomy	1	65.000000	6.666666666666	4000
15	409	Space Weather Station	Space Exploration	1	60.000000	6.666666666666	3000

```sql
--9. STAFF ALLOCATION REPORT
CREATE PROCEDURE StaffAllocationReport
AS
BEGIN
    SELECT
        u.Name AS Employee_Name,
        e.Employee_Role,
        e.Assigned_Exhibit,
        e.Weekly_Hours_Worked,
        a.Admin_Role AS Supervised_By,
        e.Assigned_Shift
    FROM Employee e
    JOIN Users u ON e.User_ID = u.User_ID
    LEFT JOIN Administration a ON e.Admin_ID = a.Admin_ID
    ORDER BY e.Employee_Role, u.Name;
END;

-- Execute the report
EXEC StaffAllocationReport;
```

Results | Messages

	Employee_Name	Employee_Role	Assigned_Exhibit	Weekly_Hours_Worked	Supervised_By	Assigned_Shift
1	Lin Wei Chen	Data Analyst	NULL	40	Finance Officer	Morning
2	Magnus Johansson	IT Support	NULL	40	Senior DEM	Evening
3	Sven Magnusson	IT Support	NULL	40	Senior DEM	Morning
4	Abdul Rahman	Logistics Admin	NULL	40	Exhibit Manager	Evening
5	Ismail Bey	Logistics Admin	NULL	40	Exhibit Manager	Morning
6	Bilal Ahmed	Tech Supervisor	Main Hall	40	Senior DEM	Morning
7	Mehmet Altan	Tech Supervisor	Planetarium	40	Senior DEM	Evening
8	Omar Farooq	Tech Supervisor	Space Exploration Wing	35	Senior DEM	Night
9	Zara bint Khalid	Visitor Services	Main Entrance	35	HR Coordinator	Flexible

```sql
--10. MAINTENANCE ALERT REPORT
SELECT me.ME_ID, me.Name, me.Operational_Status, v.Visitor_ID, v.AR_Usage_Hours, v.VR_Usage_Hours, e.Last_Maintenance_Check_Date
FROM Multimedia_Equipment me
JOIN Visitor v ON me.Visitor_ID = v.Visitor_ID
LEFT JOIN Employee e ON v.Employee_ID = e.Employee_ID
WHERE (me.Name LIKE '%AR%' OR me.Name LIKE '%VR%' OR me.Name LIKE '%Projector%')
      AND (v.AR_Usage_Hours >= 3 OR v.VR_Usage_Hours >= 5);
```

Results Messages

	ME_ID	Name	Operational_Status	Visitor_ID	AR_Usage_Hours	VR_Usage_Hours	Last_Maintenance_Check_Date
1	501	Deep Space VR Rig	Operational	301	5	4	2023-10-15
2	502	Mars Rover Feed Display	Under Maintenance	302	3	2	2023-10-12
3	503	Black Hole VR Dome	Operational	303	10	6	2023-10-18

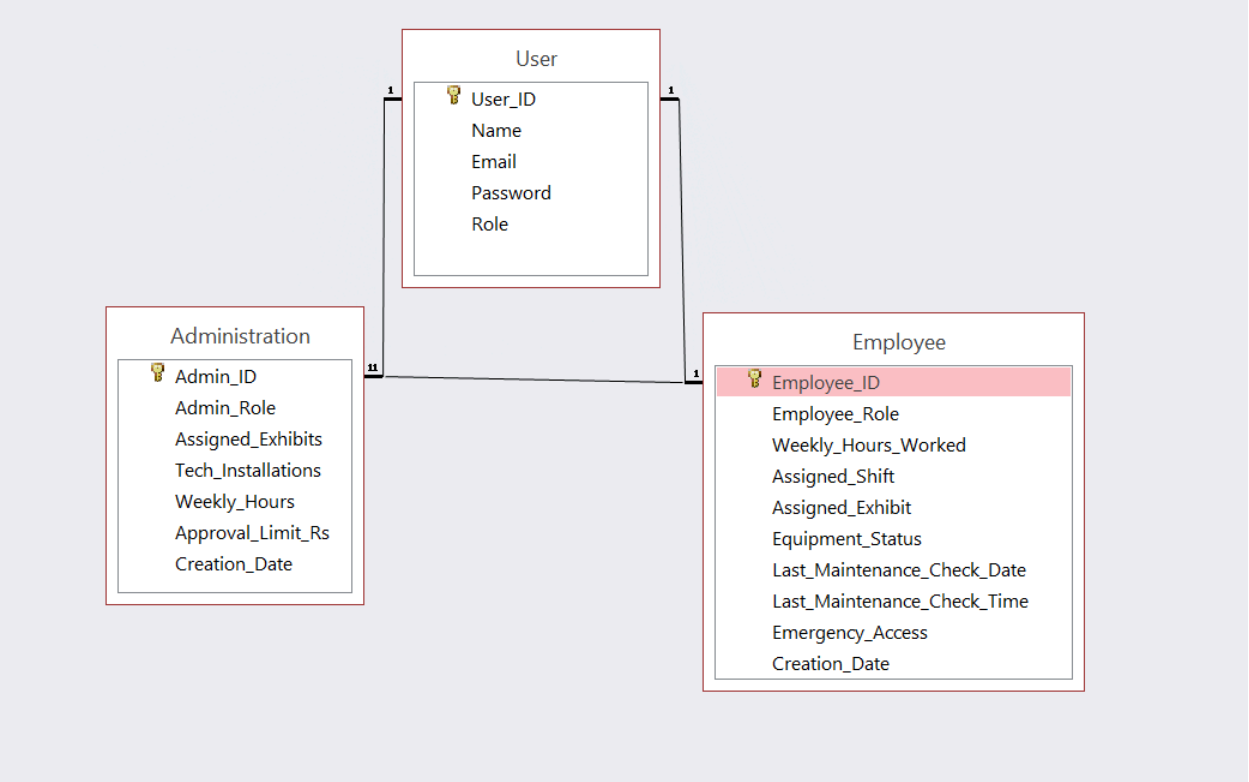
```sql
--11. FINNCIAL SUMMARY REPORT
SELECT
    ex.Exhibit_Name,
    SUM(v.Amount_Payed) AS Total_Revenue,
    SUM(COALESCE(a.Weekly_Hours, 0) * 500) + SUM(COALESCE(e.Weekly_Hours_Worked, 0) * 300) AS Estimated_Expenses,
    SUM(v.Amount_Payed) - (SUM(COALESCE(a.Weekly_Hours, 0) * 500) + SUM(COALESCE(e.Weekly_Hours_Worked, 0) * 300)) AS Profit_Loss,
    a.Approval_Limit_Rs,
    CASE
        WHEN a.Approval_Limit_Rs >= 100000 THEN 'Highlight'
        ELSE 'Normal'
    END AS Approval_Status
FROM
    Exhibit ex
LEFT JOIN Visitor v ON ex.Visitor_ID = v.Visitor_ID
LEFT JOIN Administration a ON ex.Admin_ID = a.Admin_ID
LEFT JOIN Employee e ON e.Assigned_Exhibit = ex.Exhibit_Name
GROUP BY
    ex.Exhibit_Name, a.Approval_Limit_Rs;
```

Results Messages

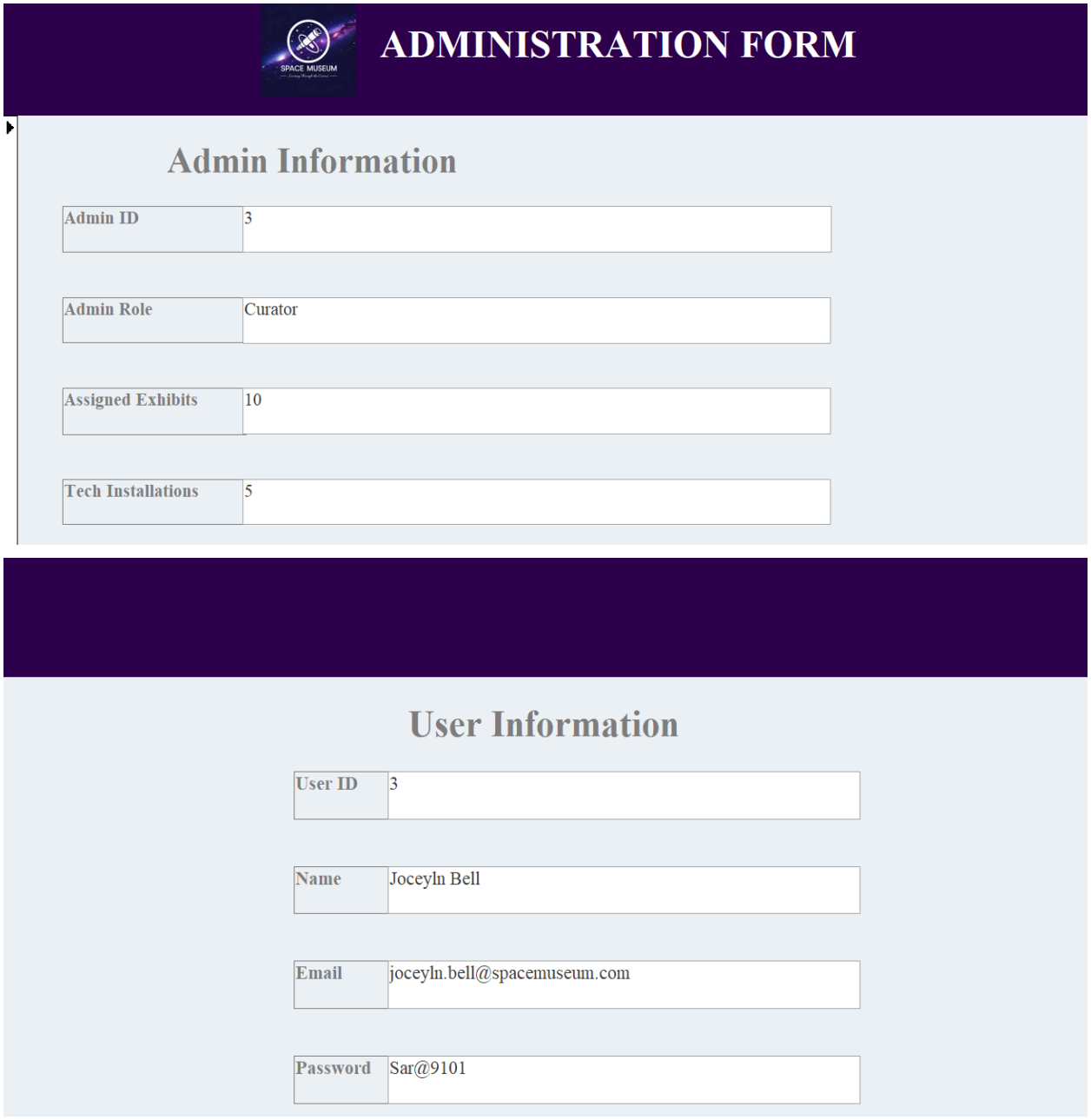
	Exhibit_Name	Total_Revenue	Estimated_Expenses	Profit_Loss	Approval_Limit_Rs	Approval_Status
1	Alien Life Exhibit	11000	20000	-9000	250000	Highlight
2	Astronaut Fitness Zone	5000	20000	-15000	250000	Highlight
3	Black Hole Experience	9000	20000	-11000	250000	Highlight
4	Comet Tracking Station	5000	20000	-15000	250000	Highlight
5	Deep Space Telescope	14000	20000	-6000	250000	Highlight
6	Gravity Exploration Zone	5000	20000	-15000	250000	Highlight
7	Hubble Space Telescope	12500	20000	-7500	250000	Highlight
8	Journey to Mars	12000	20000	-8000	250000	Highlight
9	Lunar Landing Simulation	5000	20000	-15000	250000	Highlight
10	Mars Habitat Dome	7000	20000	-13000	250000	Highlight
11	Mission Control Room	8500	20000	-11500	250000	Highlight
12	Robotic Rover Showcase	5000	20000	-15000	250000	Highlight
13	Rocket Engine Display	4000	20000	-16000	250000	Highlight
14	Satellite Lab	8000	20000	-12000	250000	Highlight
15	Space Weather Station	3000	20000	-17000	250000	Highlight

On Microsoft Access:

Relationship:



Admin Form:


SPACE MUSEUM
ADMINISTRATION FORM
Admin Information
Admin ID
3
Admin Role
Curator
Assigned Exhibits
10
Tech Installations
5
User Information
User ID
3
Name
Joceyln Bell
Email
joceyln.bell@spacemuseum.com
Password
Sar@9101

Admin Report:

ADMIN REPORT

Admin ID				
1				
Admin Role				
CEO				
Assigned Exhibits	**Tech Installations**	**Weekly Hours**	**Max Approval Limit**	**Account Creation Date**
0	0	50	1000000	2020-01-15

Admin ID				
2				
Admin Role				
Senior Curator				
Assigned Exhibits	**Tech Installations**	**Weekly Hours**	**Max Approval Limit**	**Account Creation Date**

2. Employee User Interface:

Queries:

```
--1. List all employees with their assigned shifts and roles.
SELECT Employee_ID, Employee_Role, Assigned_Shift
FROM Employee;
```

Results | Messages

	Employee_ID	Employee_Role	Assigned_Shift
1	201	Tech Supervisor	Morning
2	202	Tech Supervisor	Evening
3	203	Tech Supervisor	Night
4	204	Logistics Admin	Morning
5	205	Logistics Admin	Evening
6	206	IT Support	Morning
7	207	IT Support	Evening
8	208	Data Analyst	Morning
9	209	Visitor Services	Flexible

```
--2. Show equipment that needs maintenance.
SELECT ME_ID, Name, Operational_Status
FROM Multimedia_Equipment
WHERE Operational_Status != 'Operational';
```

Results | Messages

	ME_ID	Name	Operational_Status
1	502	Mars Rover Feed Display	Under Maintenance
2	505	Telescope Feed Panel	Calibration Needed

```
--3. List employees with their names, emails and roles.
Select u.Name, u.Email, e.employee_role
From Users u
JOIN Employee e
ON u.User_ID = e.User_ID;
```

Results | Messages

	Name	Email	employee_role
1	Bilal Ahmed	bilal.ahmed@spacemuseum.com	Tech Supervisor
2	Mehmet Altan	mehmet.altan@spacemuseum.com	Tech Supervisor
3	Omar Farooq	omar.farooq@spacemuseum.com	Tech Supervisor
4	Ismail Bey	ismail.bey@spacemuseum.com	Logistics Admin
5	Abdul Rahman	abdul.rahman@spacemuseum.com	Logistics Admin
6	Sven Magnusson	sven.magnus@spacemuseum.com	IT Support
7	Magnus Johans...	magnus.johan@spacemuseum.c...	IT Support
8	Lin Wei Chen	lin.weichen@spacemuseum.com	Data Analyst
9	Zara bint Khalid	zara.khalid@spacemuseum.com	Visitor Services

```sql
--4. Show employees with their supervising admin (Daily Operations Report).
SELECT e.Employee_ID, e.Employee_Role, a.Admin_ID, a.Admin_Role
FROM Employee e
INNER JOIN Administration a ON e.Admin_ID = a.Admin_ID;
```

Results Messages

	Employee_ID	Employee_Role	Admin_ID	Admin_Role
1	201	Tech Supervisor	106	Senior DEM
2	202	Tech Supervisor	106	Senior DEM
3	203	Tech Supervisor	106	Senior DEM
4	204	Logistics Admin	110	Exhibit Manager
5	205	Logistics Admin	110	Exhibit Manager
6	206	IT Support	106	Senior DEM
7	207	IT Support	106	Senior DEM
8	208	Data Analyst	113	Finance Officer
9	209	Visitor Services	112	HR Coordinator

```sql
--5. List visitors handled by each employee (Visitor Log Report).
SELECT e.Employee_ID, e.Employee_Role, v.Visitor_ID, u.Name, v.Registration_Date
FROM Employee e
INNER JOIN Visitor v ON e.Employee_ID = v.Employee_ID
INNER JOIN Users u ON v.User_ID = u.User_ID;
```

Results Messages

	Employee_ID	Employee_Role	Visitor_ID	Name	Registration_Date
1	201	Tech Supervisor	301	Aisha bint Yusuf	2024-12-01
2	202	Tech Supervisor	302	Aylin Demir	2024-11-15
3	203	Tech Supervisor	303	Alistair Winthrop	2025-01-05
4	201	Tech Supervisor	304	Chen Xiao Ling	2025-02-20
5	202	Tech Supervisor	305	Edmund Blackwood	2025-03-10
6	203	Tech Supervisor	306	Eleanor Cavendish	2025-01-20
7	201	Tech Supervisor	307	Fatima Al-Qureshi	2025-02-15
8	202	Tech Supervisor	308	Hiroshi Yamamoto	2025-03-05
9	203	Tech Supervisor	309	Ingrid Bergström	2025-04-10
10	209	Visitor Services	310	Ismet Sultan	2025-01-25
11	209	Visitor Services	311	Li Na Zheng	2025-02-28
12	209	Visitor Services	312	Park Ji-Hoon	2025-03-15
13	209	Visitor Services	313	Sakamoto Ryu	2025-04-05
14	209	Visitor Services	314	Takeda Nobunaga	2025-01-30
15	201	Tech Supervisor	315	Tanaka Haruki	2025-03-20

```sql
--6. Find employees who have handled Platinum membership visitors.
SELECT Employee_ID, Employee_Role
FROM Employee
WHERE Employee_ID IN (
    SELECT Employee_ID
    FROM Visitor
    WHERE Membership_Tier = 'Platinum'
);
```

Results | Messages

	Employee_ID	Employee_Role
1	202	Tech Supervisor
2	203	Tech Supervisor
3	209	Visitor Services

```sql
--7. List exhibits that have equipment needing maintenance (Equipment Status Report).
SELECT e.Exhibit_ID, e.Exhibit_Name, me.Name AS Equipment, me.Operational_Status
FROM Exhibit e
INNER JOIN Multimedia_Equipment me ON e.Exhibit_ID = me.Exhibit_ID
WHERE me.ME_ID IN (
    SELECT ME_ID
    FROM Multimedia_Equipment
    WHERE Operational_Status != 'Operational'
);
```

Results | Messages

	Exhibit_ID	Exhibit_Name	Equipment	Operational_Status
1	401	Journey to Mars	Mars Rover Feed Display	Under Maintenance
2	414	Hubble Space Telescope	Telescope Feed Panel	Calibration Needed

```sql
--8. List employees assigned to shifts containing "ven".
Select *
From Employee
WHERE Assigned_Shift LIKE '%ven%';
```

Results | Messages

	Employee_ID	Employee_Role	Weekly_Hours_Worked	Assigned_Shift	Assigned_Exhibit	Equipment_Status	Last_Maintenance_Check_Date	Last_Maintenance_Check_Time	Emergency_Access	Creation_Date	Admin_ID	User_ID
1	202	Tech Supervisor	40	Evening	Planetarium	Needs Calibration	2023-10-12	14:45:00.0000000	Level 2	2022-02-15	106	15
2	205	Logistics Admin	40	Evening	NULL	N/A	2023-10-02	18:00:00.0000000	Level 1	2022-05-12	110	18
3	207	IT Support	40	Evening	NULL	System Updated	2023-10-11	17:15:00.0000000	Level 3	2022-07-22	106	20

```sql
--9. List exhibits with names starting with "A" or "P".
Select *
From Exhibit
WHERE Exhibit_Name LIKE 'A%' OR Exhibit_Name LIKE 'P%';
```

Results | Messages

	Exhibit_ID	Exhibit_Name	Location	Overseeing_Start_Date	Overseeing_End_Date	Year_Of_Exhibit	Duration_in_Minutes	Admin_ID	Visitor_ID
1	404	Astronaut Fitness Zone	Hall D - Sector 3	2025-02-01	2025-07-01	2025	40	104	304
2	407	Alien Life Exhibit	Hall G - Sector 7	2025-05-10	2025-10-10	2025	50	104	307

```sql
--10. Sort all employees by name alphabetically.
SELECT e.Employee_ID, u.Name, e.Employee_Role, e.Assigned_Shift
FROM Employee e
JOIN Users u ON e.User_ID = u.User_ID
ORDER BY u.Name ASC;
```

Results Messages

	Employee_ID	Name	Employee_Role	Assigned_Shift
1	205	Abdul Rahman	Logistics Admin	Evening
2	201	Bilal Ahmed	Tech Supervisor	Morning
3	204	Ismail Bey	Logistics Admin	Morning
4	208	Lin Wei Chen	Data Analyst	Morning
5	207	Magnus Johansson	IT Support	Evening
6	202	Mehmet Altan	Tech Supervisor	Evening
7	203	Omar Farooq	Tech Supervisor	Night
8	206	Sven Magnusson	IT Support	Morning
9	209	Zara bint Khalid	Visitor Services	Flexible

```sql
--11. Calculate total weekly hours worked by all employees.
SELECT SUM(Weekly_Hours_Worked) AS total_hours_worked
FROM Employee;
```

Results Messages

	total_hours_worked
1	350

```sql
--12. Average weekly hours worked by all employees.
SELECT AVG(Weekly_Hours_Worked) AS avg_weekly_hours
FROM Employee;
```

Results Messages

	avg_weekly_hours
1	38

```sql
--13. Count paid vs unpaid visitors.
SELECT
    SUM(CASE WHEN Payment_Status = 'Paid' THEN 1 ELSE 0 END) AS paid_visitors,
    SUM(CASE WHEN Payment_Status = 'Unpaid' THEN 1 ELSE 0 END) AS unpaid_visitors,
    COUNT(*) AS total_visitors
FROM Visitor;
```

Results Messages

	paid_visitors	unpaid_visitors	total_visitors
1	12	3	15

```sql
--14. List employees who have worked more than 38 hours per week.
SELECT Employee_ID, Employee_Role, Weekly_Hours_Worked
FROM Employee
GROUP BY Employee_ID, Employee_Role, Weekly_Hours_Worked
HAVING Weekly Hours Worked > 38;
```

Results | Messages

	Employee_ID	Employee_Role	Weekly_Hours_Worked
1	201	Tech Supervisor	40
2	202	Tech Supervisor	40
3	204	Logistics Admin	40
4	205	Logistics Admin	40
5	206	IT Support	40
6	207	IT Support	40
7	208	Data Analyst	40

```sql
--15. List exhibits named "Satellite Lab" or "Hubble Space Telescope".
Select* From Exhibit WHERE Exhibit_Name IN ('Satellite Lab', 'Hubble Space Telescope');
```

Results | Messages

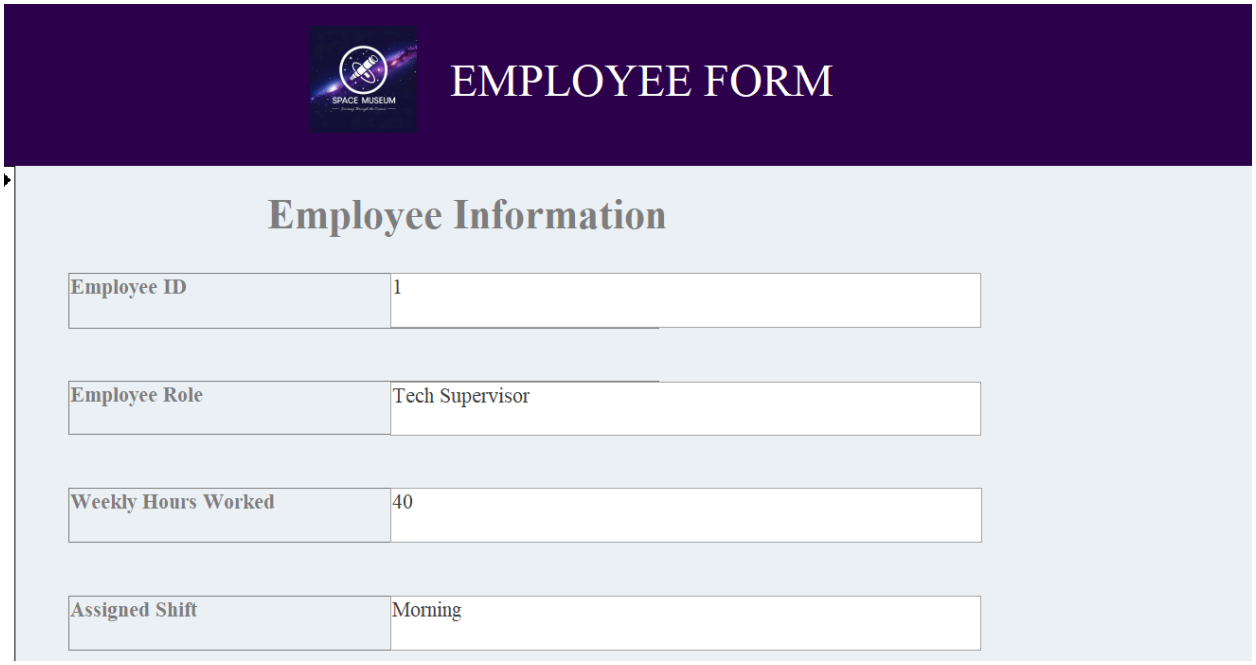
	Exhibit_ID	Exhibit_Name	Location	Overseeing_Start_Date	Overseeing_End_Date	Year_Of_Exhibit	Duration_in_Minutes	Admin_ID	Visitor_ID
1	402	Satellite Lab	Hall B - Sector 2	2025-01-10	2025-06-15	2025	50	103	302
2	414	Hubble Space Telescope	Hall N - Sector 14	2025-12-01	2026-05-01	2025	70	105	314

```sql
--16. List all employees with their names and roles (sorted Z-A).
SELECT u.Name, e.Employee_Role, e.Assigned_Shift
FROM Employee e
JOIN Users u ON e.User_ID = u.User_ID
ORDER BY u.Name DESC;
```

Results | Messages

	Name	Employee_Role	Assigned_Shift
1	Zara bint Khalid	Visitor Services	Flexible
2	Sven Magnusson	IT Support	Morning
3	Omar Farooq	Tech Supervisor	Night
4	Mehmet Altan	Tech Supervisor	Evening
5	Magnus Johansson	IT Support	Evening
6	Lin Wei Chen	Data Analyst	Morning
7	Ismail Bey	Logistics Admin	Morning
8	Bilal Ahmed	Tech Supervisor	Morning
9	Abdul Rahman	Logistics Admin	Evening

Employee Form:



Visitors Interface:

Visitor Table:

```
----------VISITOR----------
SELECT * FROM Visitor;
```

	Visitor_ID	Contact_Number	Membership_Tier	Total_Visits	Discount_Earned	Family_Adults	Family_Kids	AR_Usage_Hours	VR_Usage_Hours	Preferred_Exhibits	Registration_Date	Feedback	Amount_Payed	Payment_Status	Creation_Date	Employee_ID	User_ID
1	301	3001234567	Gold	12	1500	2	3	5	4	Space Exploration	2024-12-01	Loved the Mars exhibit!	12000	Paid	2024-12-01	201	23
2	302	3019876543	Silver	8	800	1	2	3	2	Astronaut Training	2024-11-15	Great experience for kids!	8000	Paid	2024-11-15	202	24
3	303	3111234567	Platinum	20	3000	2	2	10	6	Satellite Technology	2025-01-05	Highly engaging and fun.	18000	Unpaid	2025-01-05	203	25
4	304	3211231234	Bronze	5	0	1	1	1	2	Rocket Launch Sim	2025-02-20	Exciting but short.	5000	Paid	2025-02-20	201	26
5	305	3311239876	Gold	15	2000	3	0	6	5	Moon Landing Zone	2025-03-10	Very realistic simulation!	14000	Paid	2025-03-10	202	27
6	306	3412345678	Silver	7	700	2	1	4	3	Black Hole Experience	2025-01-20	Mind-blowing visuals!	9000	Paid	2025-01-20	203	28
7	307	3512349876	Gold	10	1200	1	2	5	4	Space Station Tour	2025-02-15	Kids loved the VR experience	11000	Paid	2025-02-15	201	29
8	308	3612398765	Platinum	18	2800	2	0	8	7	All Exhibits	2025-03-05	Worth every penny!	17000	Unpaid	2025-03-05	202	30
9	309	3712387654	Bronze	3	0	1	0	2	1	Telescope Gallery	2025-04-10	Educational but crowded	3000	Paid	2025-04-10	203	31
10	310	3812376543	Gold	9	1100	2	2	4	3	Children Space Zone	2025-01-25	Perfect family outing	10000	Paid	2025-01-25	209	32
11	311	3912365432	Silver	6	600	1	1	3	2	Mars Rover Exhibit	2025-02-28	Interactive and fun	7000	Paid	2025-02-28	209	33
12	312	4012354321	Platinum	22	3500	3	1	9	8	VR Space Walk	2025-03-15	Best museum experience e...	20000	Paid	2025-03-15	209	34
13	313	4112343210	Bronze	4	0	2	0	1	1	Astronomy Basics	2025-04-05	Good for beginners	4000	Unpaid	2025-04-05	209	35
14	314	4212332109	Gold	11	1300	1	3	5	4	Space Camp Area	2025-01-30	Kids did not want to leave!	12500	Paid	2025-01-30	209	36
15	315	4312321098	Silver	8	800	2	1	4	3	Solar System Tour	2025-03-20	Informative and engaging	8500	Paid	2025-03-20	201	37

Exhibit Table:

```
----------VISITOR----------
SELECT * FROM Exhibit;
SELECT * FROM Visitor;
```

	Exhibit_ID	Exhibit_Name	Location	Overseeing_Start_Date	Overseeing_End_Date	Year_Of_Exhibit	Duration_in_Minutes	Admin_ID	Visitor_ID
1	401	Journey to Mars	Hall A - Sector 1	2024-11-01	2025-03-01	2024	60	103	301
2	402	Satellite Lab	Hall B - Sector 2	2025-01-10	2025-06-15	2025	50	103	302
3	403	Lunar Landing Simulation	Hall C - Sector 5	2024-12-05	2025-04-30	2024	55	103	304
4	404	Astronaut Fitness Zone	Hall D - Sector 3	2025-02-01	2025-07-01	2025	40	104	304
5	405	Deep Space Telescope	Hall E - Sector 4	2025-03-20	2025-08-20	2025	70	104	305
6	406	Black Hole Experience	Hall F - Sector 6	2025-04-01	2025-09-01	2025	65	104	306
7	407	Alien Life Exhibit	Hall G - Sector 7	2025-05-10	2025-10-10	2025	50	104	307
8	408	Robotic Rover Showcase	Hall H - Sector 8	2025-06-15	2025-11-15	2025	45	105	304
9	409	Space Weather Station	Hall I - Sector 9	2025-07-20	2025-12-20	2025	60	105	309
10	410	Gravity Exploration Zone	Hall J - Sector 10	2025-08-25	2026-01-25	2025	55	105	304
11	411	Mars Habitat Dome	Hall K - Sector 11	2025-09-30	2026-02-28	2025	50	105	311
12	412	Comet Tracking Station	Hall L - Sector 12	2025-10-05	2026-03-05	2025	40	103	304
13	413	Rocket Engine Display	Hall M - Sector 13	2025-11-01	2026-04-01	2025	65	104	313
14	414	Hubble Space Telescope	Hall N - Sector 14	2025-12-01	2026-05-01	2025	70	105	314
15	415	Mission Control Room	Hall O - Sector 15	2026-01-01	2026-06-01	2026	75	103	315

Queries:

```
----------Membership Benefits Report:----------
--What is my Current Membership Tier & Total Visits
SELECT  u.Name, v.Membership_Tier
FROM Visitor v
JOIN Users u
ON v.User_ID=u.User_ID
WHERE Visitor_ID = 301;
```

	Name	Membership_Tier
1	Aisha bint Yusuf	Gold

```sql
--Am i eligible to any discounts?  (Ans:YES)
--(the criteria here is that discount is given to those whose visits are more than or equal to 5)
SELECT Discount_Earned, 'You have unlocked your 20% discount!' AS Message
FROM Visitor
WHERE Visitor_ID = 301 AND Total_Visits >= 5;
```

109 %

Results Messages

	Discount_Earned	Message
1	1500	You have unlocked your 20% discount!

```sql
--Am i eligible to any discounts?  (Ans:NO)
SELECT Discount_Earned, 'You do not have enough visits to unlock your 20% dicount!' AS Message
FROM Visitor
WHERE Visitor_ID = 304 AND Total_Visits < 10;

----------Personalized Visitor Summary report----------
```

109 %

Results Messages

	Discount_Earned	Message
1	0	You do not have enough visits to unlock your 20...

```sql
----------Personalized Visitor Summary report----------
--View my basic profile
SELECT u.Name, v.Contact_Number, v.Registration_Date, v.Creation_Date
FROM Visitor v
JOIN Users u
ON v.User_ID=u.User_ID
WHERE Visitor_ID = 302;
```

109 %

Results Messages

	Name	Contact_Number	Registration_Date	Creation_Date
1	Aylin Demir	3019876543	2024-11-15	2024-11-15

```sql
--display if Attended Exhibits of specific user is ≥15 minutes
SELECT
    u.Name,
    v.Total_Visits,
    e.Exhibit_Name,
    e.Year_Of_Exhibit,
    e.Duration_in_Minutes
FROM Visitor v
JOIN Users u ON v.User_ID=u.User_ID
JOIN Exhibit e ON v.Visitor_ID=e.Visitor_ID
WHERE v.Visitor_ID=304 AND e.Duration_in_Minutes >=15;
```

109 %

Results Messages

	Name	Total_Visits	Exhibit_Name	Year_Of_Exhibit	Duration_in_Minutes
1	Chen Xiao Ling	5	Lunar Landing Simulation	2024	55
2	Chen Xiao Ling	5	Astronaut Fitness Zone	2025	40
3	Chen Xiao Ling	5	Robotic Rover Showcase	2025	45
4	Chen Xiao Ling	5	Gravity Exploration Zone	2025	55
5	Chen Xiao Ling	5	Comet Tracking Station	2025	40

```sql
-- Summary of exhibits visited where duration >= 15min and used VR ≤ 3 hours in total
SELECT
    V.Visitor_ID,
    V.Preferred_Exhibits,
    V.VR_Usage_Hours,
    E.Exhibit_ID,
    E.Exhibit_Name,
    E.Duration_in_Minutes,
    E.Overseeing_Start_Date,
    E.Overseeing_End_Date
FROM Visitor V
JOIN Exhibit E ON V.Visitor_ID=E.Visitor_ID
WHERE
    V.Visitor_ID = 313 AND
    V.VR_Usage_Hours <= 3
    AND E.Duration_in_Minutes >= 15;
```

9 %

Results Messages

Visitor_ID	Preferred_Exhibits	VR_Usage_Hours	Exhibit_ID	Exhibit_Name	Duration_in_Minutes	Overseeing_Start_Date	Overseeing_End_Date
313	Astronomy Basics	1	413	Rocket Engine Display	65	2025-11-01	2026-04-01

```
AND E.Duration_in_Minutes >= 15;
----------------------------------Feedback History Report:-----------
--"What feedbacks has a visitor given about different Exihibits
SELECT
    U.Name,
    V.Membership_Tier,
    E.Exhibit_ID,
    E.Exhibit_Name,
    V.Feedback AS Visitor_Feedback
FROM Users u
JOIN Visitor V ON u.User_ID=V.User_ID
JOIN Exhibit E ON V.Visitor_ID = E.Visitor_ID
AND U.Name='Chen Xiao Ling';
```

109 %

Results | Messages

	Name	Membership_Tier	Exhibit_ID	Exhibit_Name	Visitor_Feedback
1	Chen Xiao Ling	Bronze	403	Lunar Landing Simulation	Exciting but short.
2	Chen Xiao Ling	Bronze	404	Astronaut Fitness Zone	Exciting but short.
3	Chen Xiao Ling	Bronze	408	Robotic Rover Showcase	Exciting but short.
4	Chen Xiao Ling	Bronze	410	Gravity Exploration Zone	Exciting but short.
5	Chen Xiao Ling	Bronze	412	Comet Tracking Station	Exciting but short.

```
--What are the feedbacks given by people who have "Silver" Mmebership
SELECT
    U.Name,
    V.Membership_Tier,
    E.Exhibit_ID,
    E.Exhibit_Name,
    V.Feedback AS Visitor_Feedback
FROM Users u
JOIN Visitor V ON u.User_ID=V.User_ID
JOIN Exhibit E ON V.Visitor_ID = E.Visitor_ID
AND V.Membership_Tier='Silver';
```

109 %

Results | Messages

	Name	Membership_Tier	Exhibit_ID	Exhibit_Name	Visitor_Feedback
1	Aylin Demir	Silver	402	Satellite Lab	Great experience for kids!
2	Eleanor Cavendish	Silver	406	Black Hole Experience	Mind-blowing visuals!
3	Li Na Zheng	Silver	411	Mars Habitat Dome	Interactive and fun
4	Tanaka Haruki	Silver	415	Mission Control Room	Informative and engaging

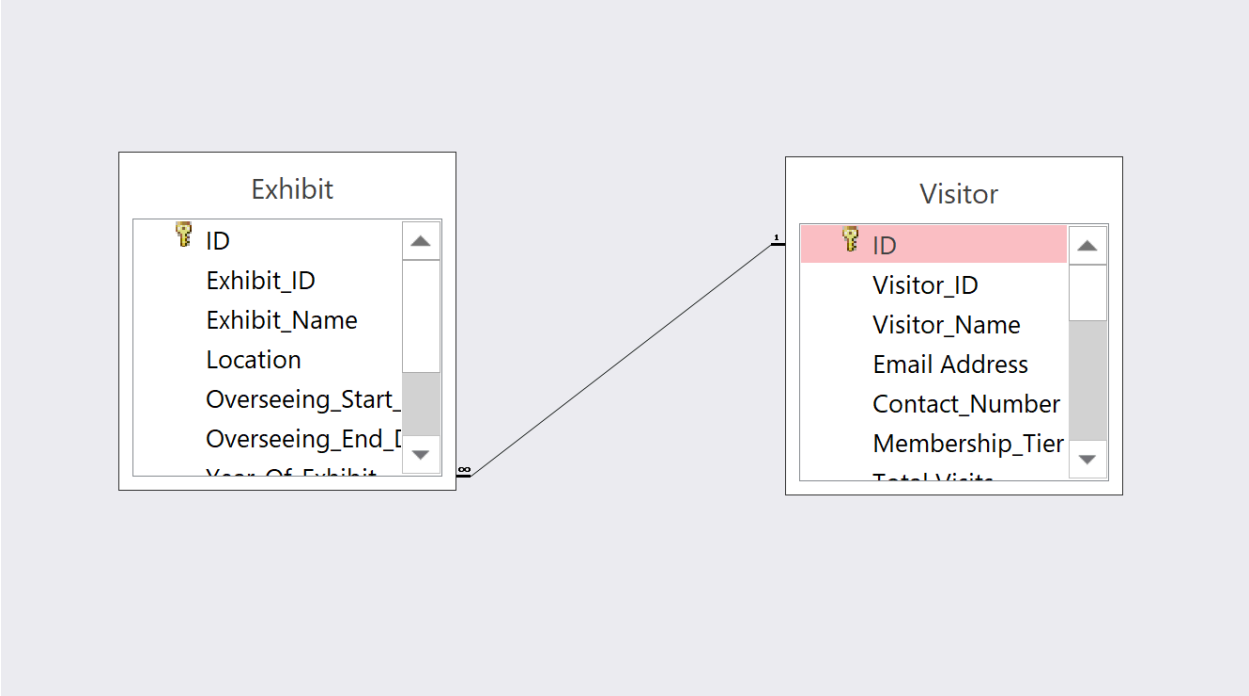
```sql
--What feedbacks are given by the members about exibit with longest duration
SELECT
    V.Visitor_ID,
    V.Membership_Tier,
    E.Exhibit_ID,
    E.Exhibit_Name,
    E.Duration_in_Minutes,
    V.Feedback
FROM Exhibit E
JOIN Visitor V ON E.Visitor_ID = V.Visitor_ID
WHERE E.Duration_in_Minutes = (
    SELECT MAX(Duration_in_Minutes) FROM Exhibit
);
```

109 %

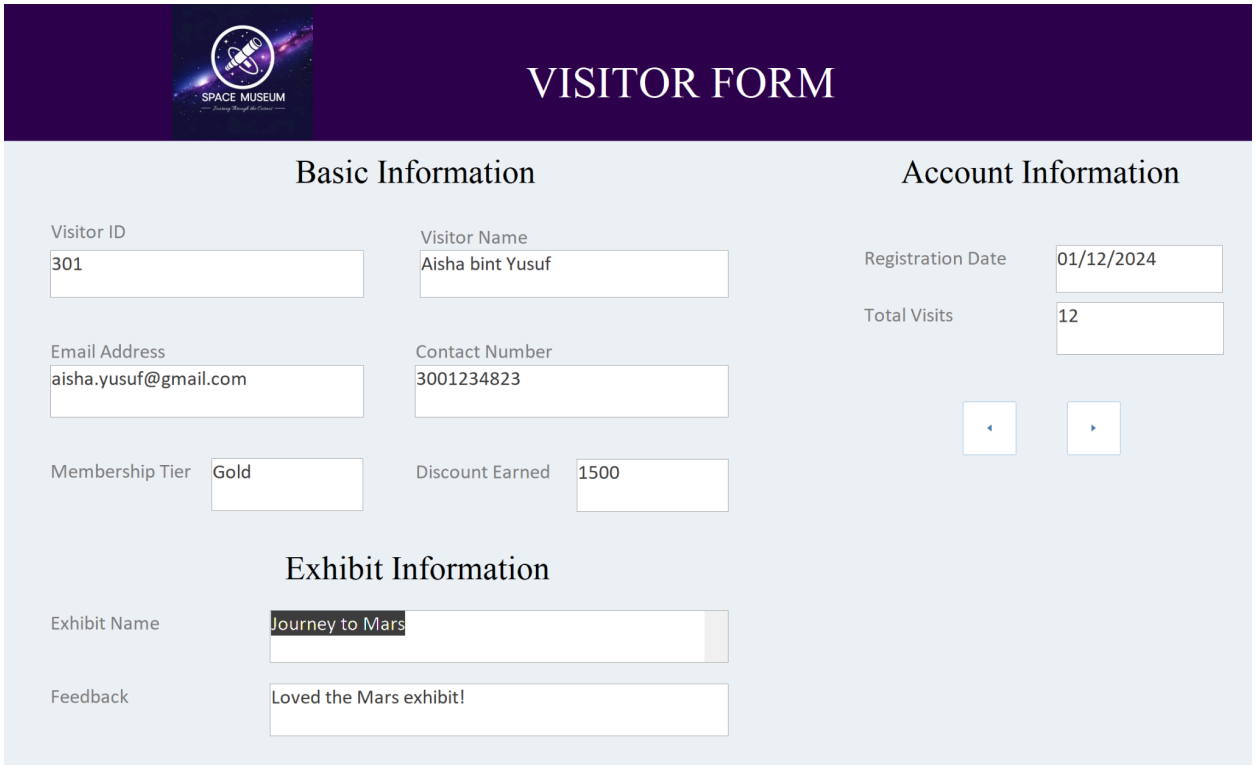
Results | Messages

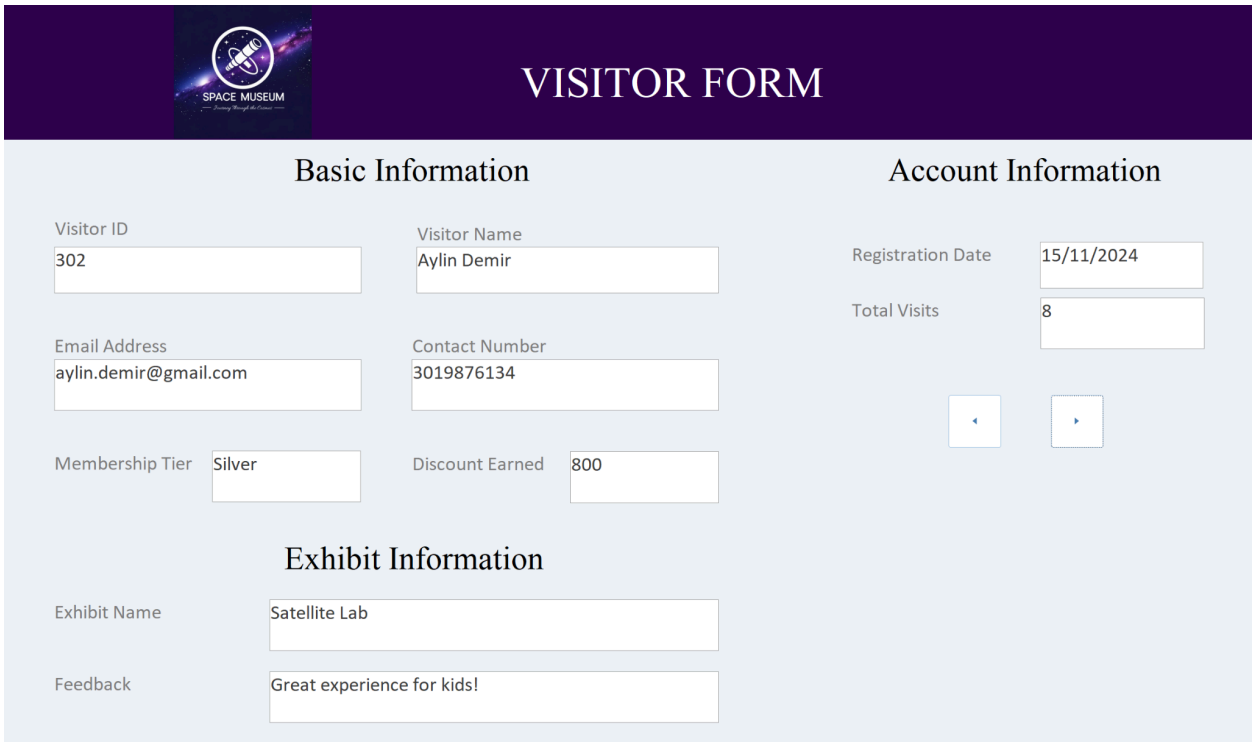
	Visitor_ID	Membership_Tier	Exhibit_ID	Exhibit_Name	Duration_in_Minutes	Feedback
1	315	Silver	415	Mission Control Room	75	Informative and engaging

On Microsoft Access:



Visitor Interface:





VISITOR FORM

Basic Information

Visitor ID: 303

Visitor Name: Alistair Winthrop

Email Address: alistair.winthrop@gmail.com

Contact Number: 3111234221

Membership Tier: Platinum

Discount Earned: 3000

Account Information

Registration Date: 05/01/2024

Total Visits: 20

Exhibit Information

Exhibit Name: Lunar Landing Simulation

Feedback: Highly engaging and fun.

VISITOR FORM

Basic Information

Account Information

Visitor ID: 304

Visitor Name: Chen Xiao Ling

Email Address: chen.xiaoling@gmail.com

Contact Number: 3211231321

Membership Tier: Bronze

Discount Earned: 0

Registration Date: 20/02/2024

Total Visits: 5

Exhibit Information

Exhibit Name: Astronaut Fitness Zone

Feedback: Exciting but short.

Projection Interface:

```sql
--1. List all planets with their information.
SELECT p.*, pl.Mass, pl.Diameter, pl.Surface_Temperature
FROM Projection p
JOIN Planet pl ON p.Projection_ID = pl.Projection_ID
ORDER BY p.Distance_from_Earth;
```

Results Messages

	Projection_ID	Name	Type	Distance_from_Earth	Mass	Diameter	Surface_Temperature
1	3	Earth	Planet	0	5.970000000	12756.000000000	15.000000000
2	2	Venus	Planet	41000000	4.870000000	12104.000000000	464.000000000
3	1	Mercury	Planet	77000000	0.330000000	4879.000000000	167.000000000
4	4	Mars	Planet	78000000	0.642000000	6792.000000000	-65.000000000
5	5	Jupiter	Planet	628730000	1898.000000000	142984.000000000	-110.000000000
6	6	Saturn	Planet	1275000000	568.000000000	120536.000000000	-140.000000000
7	7	Uranus	Planet	2724000000	86.800000000	51118.000000000	-195.000000000
8	8	Neptu...	Planet	4351000000	102.000000000	49528.000000000	-200.000000000
9	9	Pluto	Dwa...	5906400000	0.014600000	2376.600000000	-232.000000000

```sql
--2. Find moons with diameter larger than 4000 km.
SELECT m.Moon_ID, p.Name AS Planet, m.Diameter, m.Surface_Temperature
FROM Moon m
JOIN Planet pl ON m.Planet_ID = pl.Planet_ID
JOIN Projection p ON pl.Projection_ID = p.Projection_ID
WHERE m.Diameter > 4000
ORDER BY m.Diameter DESC;
```

Results Messages

	Moon_ID	Planet	Diameter	Surface_Temperature
1	806	Jupiter	5262.400000000	-160.000000000
2	809	Saturn	5150.000000000	-180.000000000
3	807	Jupiter	4820.600000000	-160.000000000

```sql
--3. Show stars and their distance from Earth
SELECT p.Name, p.Distance_from_Earth, s.Mass, s.Diameter
FROM Projection p
JOIN Star s ON p.Projection_ID = s.Projection_ID
ORDER BY p.Distance_from_Earth;
```

Results Messages

	Name	Distance_from_Earth	Mass	Diameter
1	Sun	0	1.000000000	1391000.000000000
2	Proxima Centauri	39900000000000	0.122000000	200000.000000000
3	Alpha Centauri A	41400000000000	1.100000000	1690000.000000000
4	Alpha Centauri B	41400000000000	0.907000000	1200000.000000000
5	Barnards Star	58700000000000	0.144000000	196000.000000000
6	Wolf 359	79000000000000	0.090000000	141000.000000000
7	Sirius	81400000000000	2.020000000	2400000.000000000

```sql
--4. Find planets with moons
SELECT p.Name AS Planet, COUNT(m.Moon_ID) AS Moon_Count
FROM Projection p
JOIN Planet pl ON p.Projection_ID = pl.Projection_ID
LEFT JOIN Moon m ON pl.Planet_ID = m.Planet_ID
GROUP BY p.Name
HAVING COUNT(m.Moon_ID) > 0
ORDER BY Moon_Count DESC;
```

Results Messages

	Planet	Moon_Count
1	Jupiter	5
2	Pluto	5
3	Satum	5
4	Mars	2
5	Earth	1

```sql
--5. Create procedure to just get planet names.
CREATE PROCEDURE GetPlanetNames
AS
    SELECT p.Name AS PlanetName
    FROM Projection p
    JOIN Planet pl ON p.Projection_ID = pl.Projection_ID
    WHERE p.Type = 'Planet'
    ORDER BY p.Name;

-- Execute the procedure
EXEC GetPlanetNames;
```

	PlanetName
1	Earth
2	Jupiter
3	Mars
4	Mercury
5	Neptune
6	Satum
7	Uranus
8	Venus

```sql
--6. Get all planets with their image URLs and descriptions.
SELECT p.Name AS Planet, p.Type, pl.Image_URL, pl.Img_Description, pl.Surface_Temperature, pl.Diameter
FROM Projection p
JOIN Planet pl ON p.Projection_ID = pl.Projection_ID
ORDER BY p.Distance_from_Earth;
```

Results Messages

	Planet	Type	Image_URL	Img_Description	Surface_Temperature	Diameter
1	Earth	Planet	https://solarsystem.nasa.gov/gltf_embed/2393/	Earth - Our home planet	15.000000000	12756.000000000
2	Venus	Planet	https://solarsystem.nasa.gov/gltf_embed/2342/	Venus - Brightest planet, thick atmosphere	464.000000000	12104.000000000
3	Mercury	Planet	https://solarsystem.nasa.gov/gltf_embed/2369/	Mercury - Smallest planet, closest to Sun	167.000000000	4879.000000000
4	Mars	Planet	https://solarsystem.nasa.gov/gltf_embed/2372/	Mars - The red planet	-65.000000000	6792.000000000
5	Jupiter	Planet	https://solarsystem.nasa.gov/gltf_embed/2375/	Jupiter - The gas giant	-110.000000000	142984.000000000
6	Saturn	Planet	https://solarsystem.nasa.gov/gltf_embed/2355/	Saturn - Known for its rings	-140.000000000	120536.000000000
7	Uranus	Planet	https://solarsystem.nasa.gov/gltf_embed/2344/	Uranus - Tilted rotation axis	-195.000000000	51118.000000000
8	Neptune	Planet	https://solarsystem.nasa.gov/gltf_embed/2364/	Neptune - Strongest winds in solar system	-200.000000000	49528.000000000
9	Pluto	Dwarf Planet	https://solarsystem.nasa.gov/gltf_embed/2357/	Pluto - Coldest dwarf planet	-232.000000000	2376.600000000

```sql
--7. Show planets with their discoverers and discovery methods.
SELECT p.Name AS Planet, pl.Discoverer,
    CASE
        WHEN p.Name IN ('Mercury', 'Venus', 'Mars', 'Jupiter', 'Saturn')
            THEN 'Ancient Observation'
        WHEN p.Name = 'Uranus' THEN 'Telescope Discovery'
        WHEN p.Name = 'Neptune' THEN 'Mathematical Prediction'
        WHEN p.Name = 'Pluto' THEN 'Systematic Search'
        ELSE 'Unknown'
    END AS Discovery_Method, pl.Image_URL
FROM Projection p
JOIN Planet pl ON p.Projection_ID = pl.Projection_ID
```

Results Messages

	Planet	Discoverer	Discovery_Method	Image_URL
1	Mercury	Galileo Galilei and Thomas Harriot	Ancient Observation	https://solarsystem.nasa.gov/gltf_embed/2369/
2	Venus	Galileo Galilei	Ancient Observation	https://solarsystem.nasa.gov/gltf_embed/2342/
3	Earth	Humankind	Unknown	https://solarsystem.nasa.gov/gltf_embed/2393/
4	Mars	Galileo Galilei	Ancient Observation	https://solarsystem.nasa.gov/gltf_embed/2372/
5	Jupiter	Galileo Galilei	Ancient Observation	https://solarsystem.nasa.gov/gltf_embed/2375/
6	Saturn	Galileo Galilei	Ancient Observation	https://solarsystem.nasa.gov/gltf_embed/2355/
7	Uranus	William Herschel	Telescope Discovery	https://solarsystem.nasa.gov/gltf_embed/2344/
8	Neptune	Johann Galle	Mathematical Prediction	https://solarsystem.nasa.gov/gltf_embed/2364/
9	Pluto	Venetia Burney	Systematic Search	https://solarsystem.nasa.gov/gltf_embed/2357/

```sql
--8. Find planets with surface temperature suitable for humans (-50°C to 50°C)
SELECT
    p.Name AS Planet,
    pl.Surface_Temperature,
    pl.Image_URL,
    CASE
        WHEN pl.Surface_Temperature BETWEEN -75 AND 100 THEN 'Potentially Habitable'
        ELSE 'Extreme Conditions'
    END AS Habitability
FROM Projection p
JOIN Planet pl ON p.Projection_ID = pl.Projection_ID
WHERE pl.Surface_Temperature BETWEEN -75 AND 100
ORDER BY pl.Surface_Temperature;
```

Results | Messages

	Planet	Surface_Temperature	Image_URL	Habitability
1	Mars	-65.000000000	https://solarsystem.nasa.gov/gltf_embed/2372/	Potentially Habitable
2	Earth	15.000000000	https://solarsystem.nasa.gov/gltf_embed/2393/	Potentially Habitable

Project's Key Assumption:

1. ***Hierarchical Administration Structure:*** The database assumes a clear hierarchy in the administration roles (CEO → Senior Curator/DEM → Curator/DEM → Exhibit Managers, etc.) with defined approval limits and responsibilities. This implies a top-down management approach where higher-level admins oversee broader aspects than lower-level ones.

2. ***Visitor Engagement Tracking:*** The database assumes that tracking visitor interactions with AR/VR equipment (hours used) and preferred exhibits is valuable for analytics, feedback, and potential personalization of experiences. This suggests the museum prioritizes technology-driven exhibits and data collection for improvement.

Thank You :)