

Esta evidencia se centra en la apropiación del conocimiento requerido para la creación y manipulación de

bases de datos no relacionales, utilizando SQL exclusivamente.

Deberá utilizar un script, ejecutarlo en un motor de bases de datos MySQL o MSSQL según su

preferencia y resolver algunas consultas para extraer o manipular información, usando sentencias DDL o

DML según sea el caso. Los detalles del modelo de datos físicos y las consultas a desarrollar las

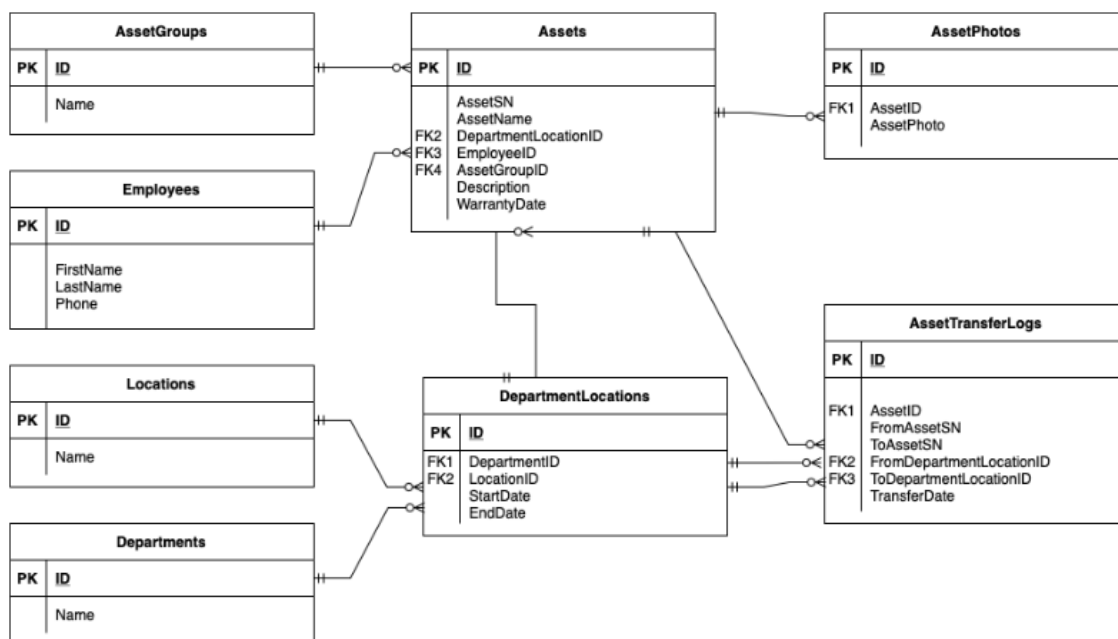
encontrará en el siguiente problema:

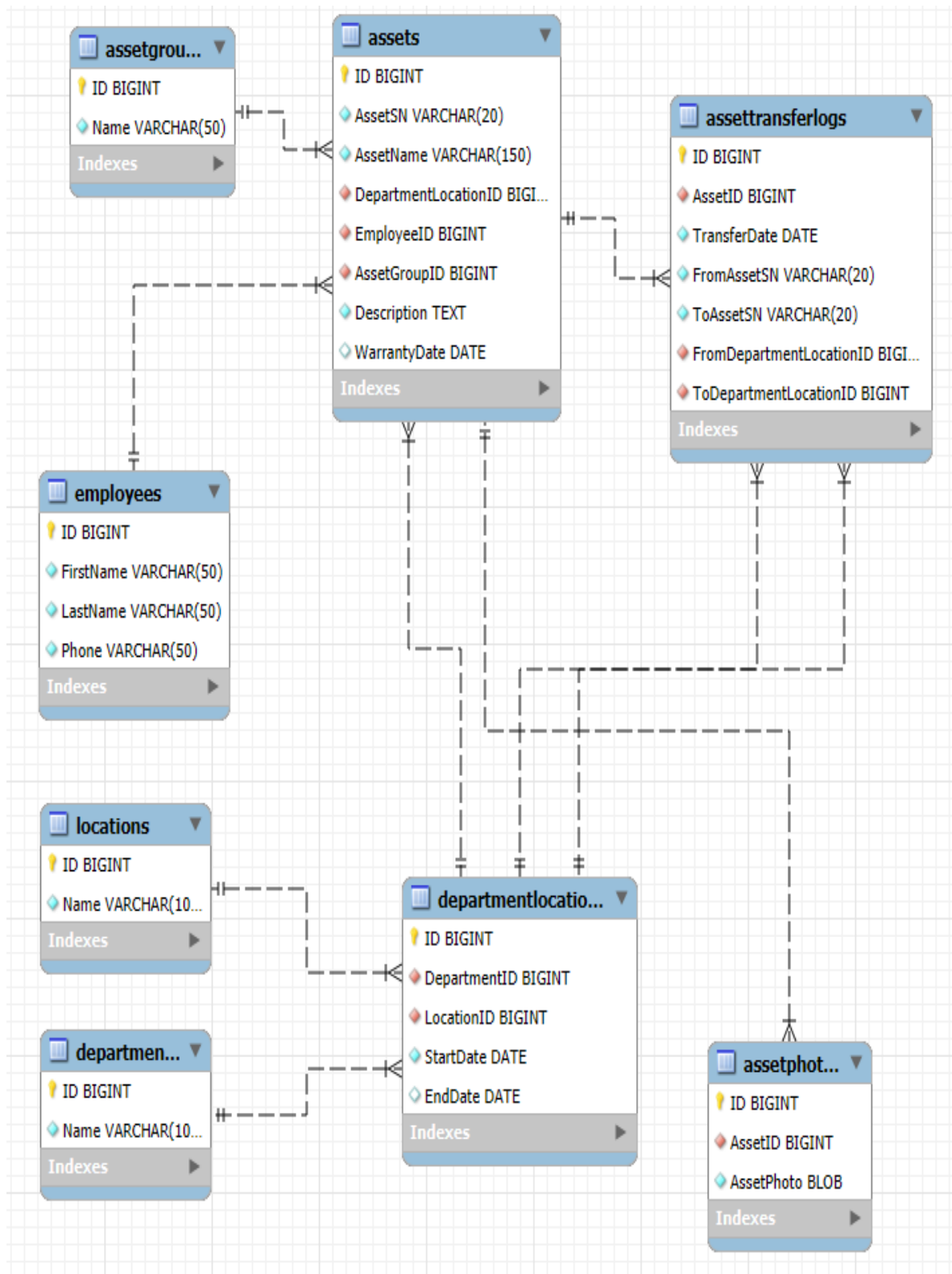
Una empresa en constante crecimiento del sector petrolero ha venido experimentando buenos resultados

financieros, que le permiten iniciar proyectos de expansión en diferentes localidades e incluso fuera de su

país de origen, por lo cual requiere organizar toda la información existente referente a su inventario y

activos. Como resultado de esta necesidad se desarrolló el siguiente modelo de datos:





1. Crear una consulta que permita obtener el catálogo de activos. Cada registro deberá tener los campos Asset name, Department name, Asset SN.

CODIGO

```
SELECT
    a.AssetName AS "Asset Name",
    d.Name AS "Department Name",
    a.AssetSN AS "Asset SN"
FROM
    Assets a
JOIN
    DepartmentLocations dl ON a.DepartmentLocationID = dl.ID
JOIN
    Departments d ON dl.DepartmentID = d.ID;
```

The screenshot shows a database management interface with a left sidebar containing a schema tree for 'evidencia'. The main area displays a SQL query in a text editor, which is the same query provided in the 'CODIGO' section. Below the query editor, the 'Result Grid' is visible, showing the results of the query. The results are displayed in a table with three columns: Asset Name, Department Name, and Asset SN. The table contains four rows of data.

Asset Name	Department Name	Asset SN
ZENY 3,SCFM Single-Stage 5 Pa Rotary Vane	Exploration	01/01/0001
Volvo FH16	Distribution	05/04/0002
Toyota Hilux FAF321	Distribution	05/04/0001
Suction Line 852	R&D	04/03/0001

2. Crear una consulta que permita filtrar el catálogo de activos del punto anterior a partir de la búsqueda aproximada de una palabra clave del Asset name

CODIGO

```
SELECT
    a.AssetName AS "Asset Name",
    d.Name AS "Department Name",
    a.AssetSN AS "Asset SN"
FROM
    Assets a
JOIN
    DepartmentLocations dl ON a.DepartmentLocationID = dl.ID
JOIN
    Departments d ON dl.DepartmentID = d.ID
WHERE
    a.AssetName LIKE '%Suction Line 852%';
```

The screenshot shows a SQL query editor interface. On the left, a 'SCHEMAS' pane displays a tree view of the database structure, including 'evidencia' (Tables, Views, Stored Procedures, Functions) and 'sys' (Tables, Views, Stored Procedures, Functions). The main editor area contains the following SQL query:

```
1 SELECT
2     a.AssetName AS "Asset Name",
3     d.Name AS "Department Name",
4     a.AssetSN AS "Asset SN"
5 FROM
6     Assets a
7 JOIN
8     DepartmentLocations dl ON a.DepartmentLocationID = dl.ID
9 JOIN
10    Departments d ON dl.DepartmentID = d.ID
11 WHERE
12    a.AssetName LIKE '%Suction Line 852%';
13
```

Below the query editor, the 'Result Grid' is displayed, showing the results of the query. The grid has three columns: 'Asset Name', 'Department Name', and 'Asset SN'. The results are as follows:

Asset Name	Department Name	Asset SN
Suction Line 852	R&D	04/03/0001

The interface also includes a 'Filter Rows' field, an 'Export' button, and a 'Wrap Cell Content' checkbox. The bottom status bar indicates 'Result 13' and 'Read Only'.

3. Crear una consulta que permita filtrar el catálogo de activos del punto anterior a partir de la búsqueda exacta del Department name.

CODIGO

```
SELECT
    a.AssetName AS "Asset Name",
    d.Name AS "Department Name",
    a.AssetSN AS "Asset SN"
FROM
    Assets a
JOIN
    DepartmentLocations d1 ON a.DepartmentLocationID = d1.ID
JOIN
    Departments d ON d1.DepartmentID = d.ID
WHERE
    d.Name = 'Exploration';
```

The screenshot shows a SQL query editor interface. On the left, a 'SCHEMAS' pane displays a tree view with 'evidencia' expanded, showing tables like 'assetgroups', 'assetphotos', 'assets', 'assettransferlogs', 'departmentlocations', 'departments', 'employees', and 'locations'. The main editor displays the SQL query from the previous block. Below the query, a 'Result Grid' shows the results of the query. The grid has three columns: 'Asset Name', 'Department Name', and 'Asset SN'. A single row is visible with the values 'ZENY 3,5CFM Single-Stage 5 Pa Rotary Vane', 'Exploration', and '01/01/0001'. The bottom status bar indicates 'Result 16' and 'Read Only'.

Asset Name	Department Name	Asset SN
ZENY 3,5CFM Single-Stage 5 Pa Rotary Vane	Exploration	01/01/0001

4. Crear una consulta que devuelva como resultado el número de registros encontrados en el catálogo de activos

CODIGO

```
SELECT
    COUNT(*) AS "Número de Activos"
FROM
    Assets a
JOIN
    DepartmentLocations dl ON a.DepartmentLocationID = dl.ID
JOIN
    Departments d ON dl.DepartmentID = d.ID;
```

The screenshot displays the SQL Server Enterprise Manager interface. On the left, the 'SCHEMAS' pane shows the 'evidencia' database structure, including tables like 'assetgroups', 'assetphotos', 'assets', 'assettransferlogs', 'departmentlocations', 'departments', 'employees', and 'locations'. The main query editor window shows the following SQL code:

```
1 • SELECT
2     COUNT(*) AS "Número de Activos"
3 FROM
4     Assets a
5 JOIN
6     DepartmentLocations dl ON a.DepartmentLocationID = dl.ID
7 JOIN
8     Departments d ON dl.DepartmentID = d.ID;
```

Below the query editor, the 'Result Grid' tab is active, showing a single row of results:

Número de Activos
4

The bottom status bar indicates 'Result 15' and 'Read Only'.

5. El modelo está diseñado para permitir la transferencia de activos entre departamentos, crear un conjunto de sentencias que ejemplifiquen cómo se registraría esta transacción en la base de datos diseñada (debe usar la tabla AssetTransferLogs)

CODIGO

```
SELECT * FROM AssetTransferLogs;  
INSERT INTO AssetTransferLogs (AssetID, TransferDate, FromAssetSN,  
ToAssetSN, FromDepartmentLocationID, ToDepartmentLocationID)  
VALUES (1, '2023-11-23', 'OldSN1', 'NewSN1', 5, 10);
```

The screenshot shows a SQL database management tool interface. On the left, a tree view displays the database schema, including tables like `assetgroups`, `assetphotos`, `assets`, `assettransferlogs`, `departmentlocations`, `departments`, `employees`, and `locations`. The main area displays the executed SQL script:

```
1 SELECT * FROM AssetTransferLogs;  
2 INSERT INTO AssetTransferLogs (AssetID, TransferDate, FromAssetSN, ToAssetSN, FromDepartmentLocationID, ToDepartmentLocationID)  
3 VALUES (1, '2023-11-23', 'OldSN1', 'NewSN1', 5, 10);
```

Below the script, the **Result Grid** shows the data in the `AssetTransferLogs` table:

ID	AssetID	TransferDate	FromAssetSN	ToAssetSN	FromDepartmentLocationID	ToDepartmentLocationID
1	1	2012-01-09	04/04/0002	05/04/0001	7	4
2	3	2014-02-02	03/01/0001	01/01/0001	8	11
5	1	2025-04-23	OldSN1	NewSN1	5	10
6	1	2025-04-23	OldSN1	NewSN1	5	10
7	1	2023-11-23	OldSN1	NewSN1	5	10
8	1	2023-11-23	OldSN1	NewSN1	5	10
9	1	2023-11-23	OldSN1	NewSN1	5	10
10	1	2023-11-23	OldSN1	NewSN1	5	10
*	NULL	NULL	NULL	NULL	NULL	NULL

At the bottom, the **Action Output** pane shows the execution message:

```
157 19:57:14 INSERT INTO AssetTransferLogs ( AssetID, FromAssetSN, ToAssetSN, FromDepartmentLocationID, ToDepartmentLocationID, Transfer... 1 row(s) affected
```

CODIGO

SCHEMAS

Filter objects

- evidencia**
 - Tables
 - assetgroups
 - assetphotos
 - assets
 - assettransferlogs
 - departmentlocations
 - departments
 - employees
 - locations
 - Views
 - Stored Procedures
 - Functions
- sys**
 - Tables
 - Views
 - Stored Procedures
 - Functions

Limit to 1000 rows

1 • **SELECT * FROM AssetTransferLogs;**

Result Grid

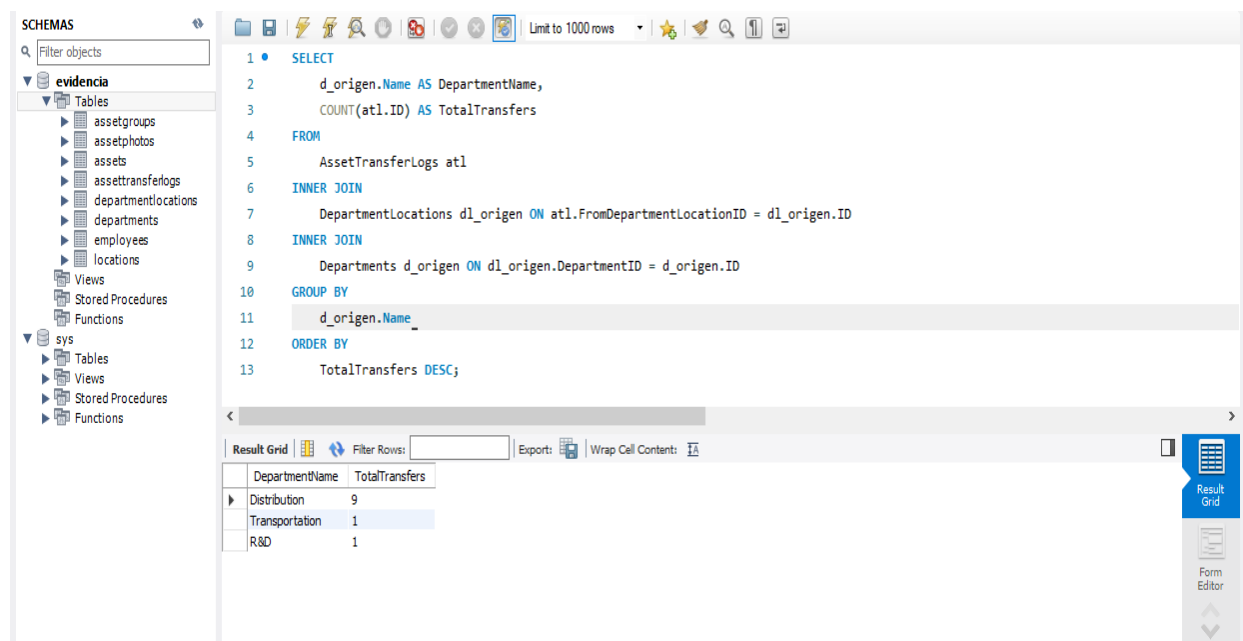
ID	AssetID	TransferDate	FromAssetSN	ToAssetSN	FromDepartmentLocationID	ToDepartmentLocationID
1	1	2012-01-09	04/04/0002	05/04/0001	7	4
2	3	2014-02-02	03/01/0001	01/01/0001	8	11
5	1	2025-04-23	OldSN1	NewSN1	5	10
6	1	2025-04-23	OldSN1	NewSN1	5	10
7	1	2023-11-23	OldSN1	NewSN1	5	10
8	1	2023-11-23	OldSN1	NewSN1	5	10
9	1	2023-11-23	OldSN1	NewSN1	5	10
10	1	2023-11-23	OldSN1	NewSN1	5	10
11	1	2023-11-23	OldSN1	NewSN1	5	10
•	NULL	NULL	NULL	NULL	NULL	NULL

AssetTransferLogs 19 x

7. Crear una consulta para obtener el nombre del departamento desde el cual se han realizado más transferencias.

CODIGO

```
SELECT
    d_origen.Name AS DepartmentName,
    COUNT(atl.ID) AS TotalTransfers
FROM
    AssetTransferLogs atl
INNER JOIN
    DepartmentLocations dl_origen ON atl.FromDepartmentLocationID =
dl_origen.ID
INNER JOIN
    Departments d_origen ON dl_origen.DepartmentID = d_origen.ID
GROUP BY
    d_origen.Name
ORDER BY
    TotalTransfers DESC;
```



The screenshot shows a SQL IDE interface. On the left, a 'SCHEMAS' pane displays a database structure with 'evidencia' and 'sys' schemas. The 'evidencia' schema contains tables like 'assetgroups', 'assetphotos', 'assets', 'assettransferlogs', 'departmentlocations', 'departments', 'employees', and 'locations'. The 'sys' schema contains 'Tables', 'Views', 'Stored Procedures', and 'Functions'. The main editor displays the SQL query from the previous block. Below the editor, a 'Result Grid' shows the query results. The grid has two columns: 'DepartmentName' and 'TotalTransfers'. The results are ordered by 'TotalTransfers' in descending order.

DepartmentName	TotalTransfers
Distribution	9
Transportation	1
R&D	1

8. Obtener los datos del empleado que más activos tiene asignados.

CODIGO

```
SELECT
    e.FirstName,
    e.LastName,
    COUNT(*) AS TotalAssets
FROM
    Assets a
INNER JOIN
    Employees e ON a.EmployeeID = e.ID
GROUP BY
    e.ID, e.FirstName, e.LastName
ORDER BY
    TotalAssets DESC
LIMIT 1;
```

The screenshot shows a SQL IDE interface. On the left, the 'SCHEMAS' panel displays a tree view with 'evidencia' expanded, showing 'Tables', 'Views', 'Stored Procedures', 'Functions', and 'sys'. The main editor displays the SQL query from the previous block. Below the editor, the 'Result Grid' tab is active, showing a single row of results. The toolbar at the top includes icons for file operations, execution, and a 'Limit to 1000 rows' dropdown. The bottom right corner has buttons for 'Result Grid' and 'Form Editor'.

FirstName	LastName	TotalAssets
Rosaura	Rames	1

9. Obtener los grupos de activos y las cantidades de activos que están relacionados en el AssetTransferLogs.

CODIGO

```
SELECT
    ag.Name AS AssetGroupName,
    COUNT(atl.AssetID) AS NumberOfTransferredAssets
FROM
    AssetGroups ag
JOIN
    Assets a ON ag.ID = a.AssetGroupID
JOIN
    AssetTransferLogs atl ON a.ID = atl.AssetID
GROUP BY
    ag.ID, ag.Name
ORDER BY
    NumberOfTransferredAssets DESC;
```

The screenshot shows a SQL IDE interface. On the left, the 'SCHEMAS' pane displays a tree view with 'evidencia' expanded, showing 'Tables', 'Views', 'Stored Procedures', 'Functions', and 'sys'. The main editor displays the SQL query from the previous block. Below the editor, the 'Result Grid' tab is active, showing the query results in a table format. The table has two columns: 'AssetGroupName' and 'NumberOfTransferredAssets'. The results are ordered by 'NumberOfTransferredAssets' in descending order.

AssetGroupName	NumberOfTransferredAssets
Mechanical	5
Hydraulic	3
Electrical	2
Grupo de prueba 2	1

10. Cantidad de activos que no han estado relacionados en transferencias.

CODIGO

```
SELECT  
    COUNT(a.ID) AS NumberOfAssetsWithoutTransfers  
FROM  
    Assets a  
LEFT JOIN  
    AssetTransferLogs atl ON a.ID = atl.AssetID  
WHERE  
    atl.AssetID IS NULL;
```

The screenshot shows a SQL IDE interface. On the left, the 'SCHEMAS' pane displays a tree view with 'evidencia' expanded, showing 'Tables', 'Views', 'Stored Procedures', and 'Functions'. The main editor displays the SQL query from the previous block. Below the editor, the 'Result Grid' is visible, showing a single row with the column 'NumberOfAssetsWithoutTransfers' and the value '0'. The interface includes a toolbar at the top with various icons and a 'Limit to 1000 rows' dropdown. On the right side, there are buttons for 'Result Grid', 'Form Editor', and 'Field Types'.

NumberOfAssetsWithoutTransfers
0