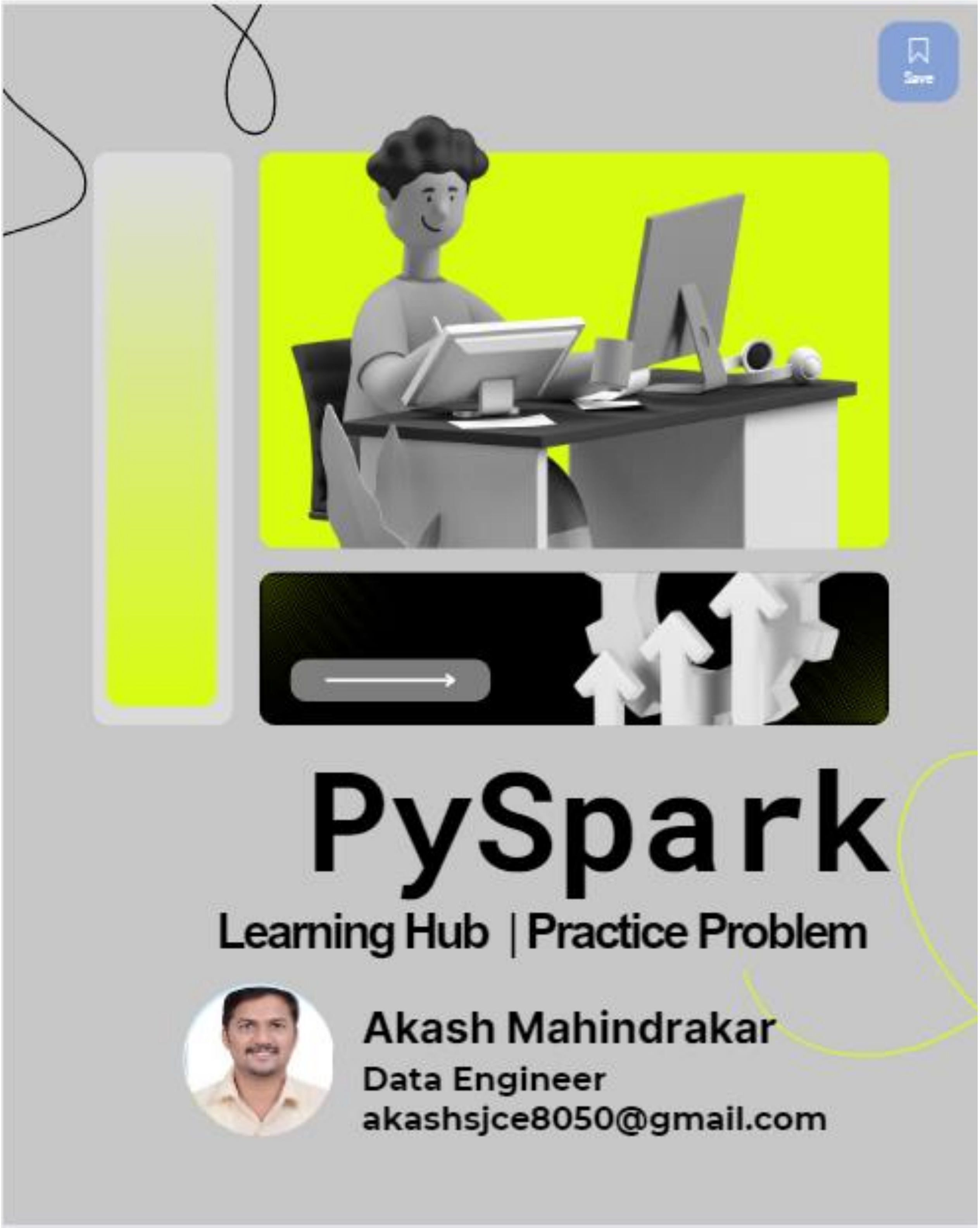
PYSPARK LEARNING HUB : DAY - 30



PySpark

Learning Hub | Practice Problem

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Step - 1 : Problem Statement

30_Join_in_pyspark

Write a pyspark code perform below function

- 56. Write a pyspark code to find out the employeename who has not assigned any project, and display "-No Project Assigned"(tables :- [EmployeeDetail],[ProjectDetail]).
- 57. Write a pyspark code to find out the project name which is not assigned to any employee(tables :- [EmployeeDetail],[ProjectDetail]).

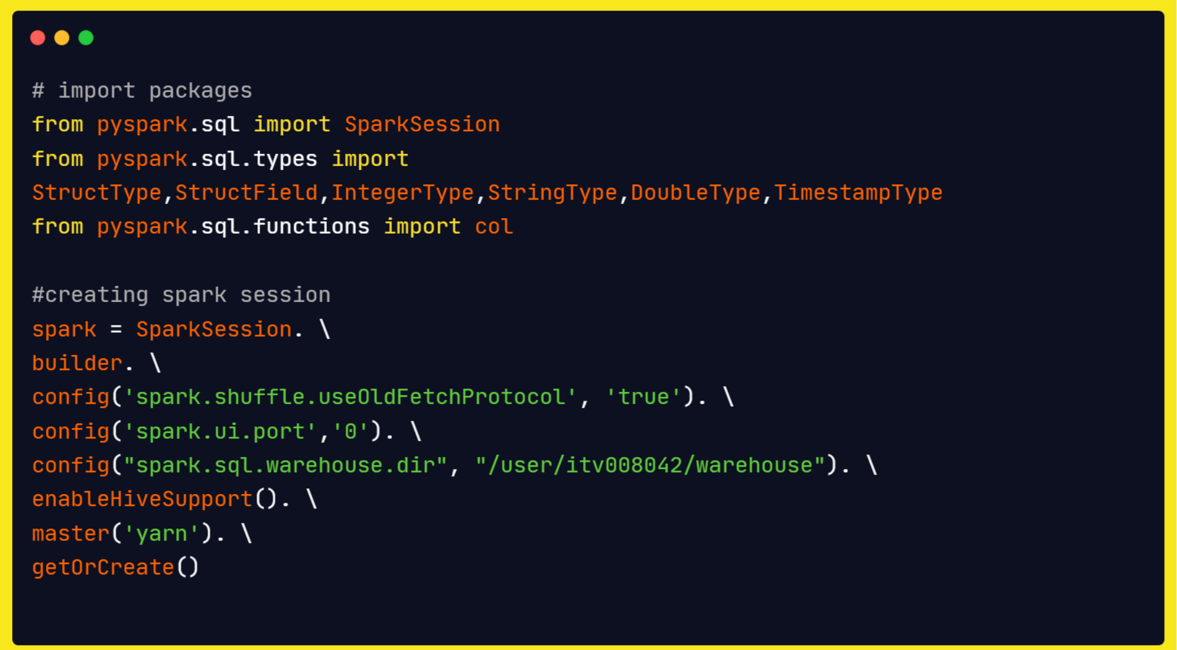
Difficult Level : EASY

DataFrame:

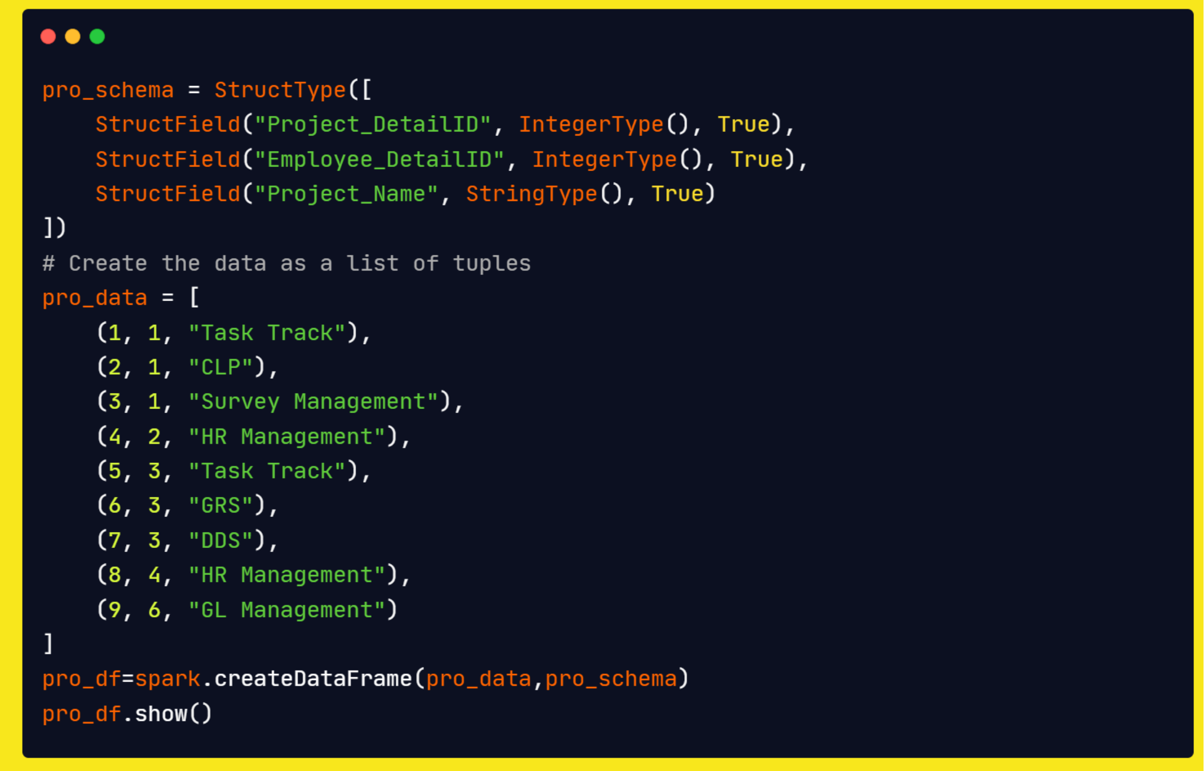
```
data = [
        [1, "Vikas", "Ahlawat", 600000.0, "2013-02-15 11:16:28.290", "IT", "Male"],
        [2, "nikita", "Jain", 530000.0, "2014-01-09 17:31:07.793", "HR", "Female"],
        [3, "Ashish", "Kumar", 1000000.0, "2014-01-09 10:05:07.793", "IT", "Male"],
        [4, "Nikhil", "Sharma", 480000.0, "2014-01-09 09:00:07.793", "HR", "Male"],
        [5, "anish", "kadian", 500000.0, "2014-01-09 09:31:07.793", "Payroll", "Male"],
]
```

```
# Create a schema for the DataFrame
schema = StructType([
        StructField("EmployeeID", IntegerType(), True),
        StructField("First_Name", StringType(), True),
        StructField("Last_Name", StringType(), True),
        StructField("Salary", DoubleType(), True),
        StructField("Joining_Date", StringType(), True),
        StructField("Department", StringType(), True),
        StructField("Gender", StringType(), True)
])

pro_schema = StructType([
        StructField("Project_DetailID", IntegerType(), True),
        StructField("Employee_DetailID", IntegerType(), True),
        StructField("Project_Name", StringType(), True)
])

# Create the data as a list of tuples
pro_data = [
        (1, 1, "Task Track"),
        (2, 1, "CLP"),
        (3, 1, "Survey Management"),
        (4, 2, "HR Management"),
        (5, 3, "Task Track"),
        (6, 3, "GRS"),
        (7, 3, "DDS"),
        (8, 4, "HR Management"),
        (9, 6, "GL Management")
]
```

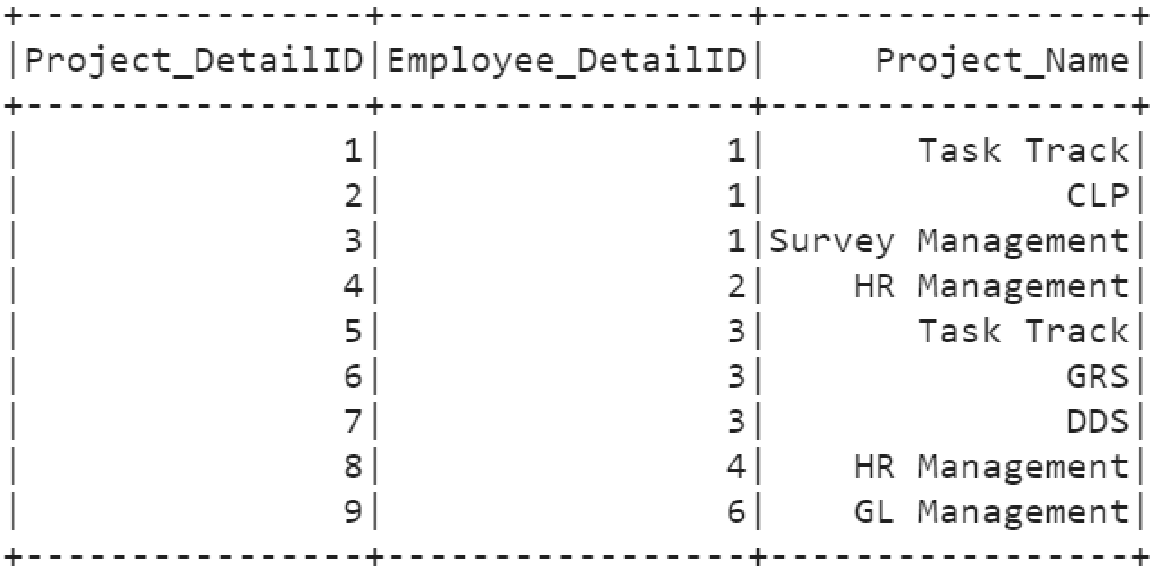
Step - 2 : Writing the pyspark code to solve the



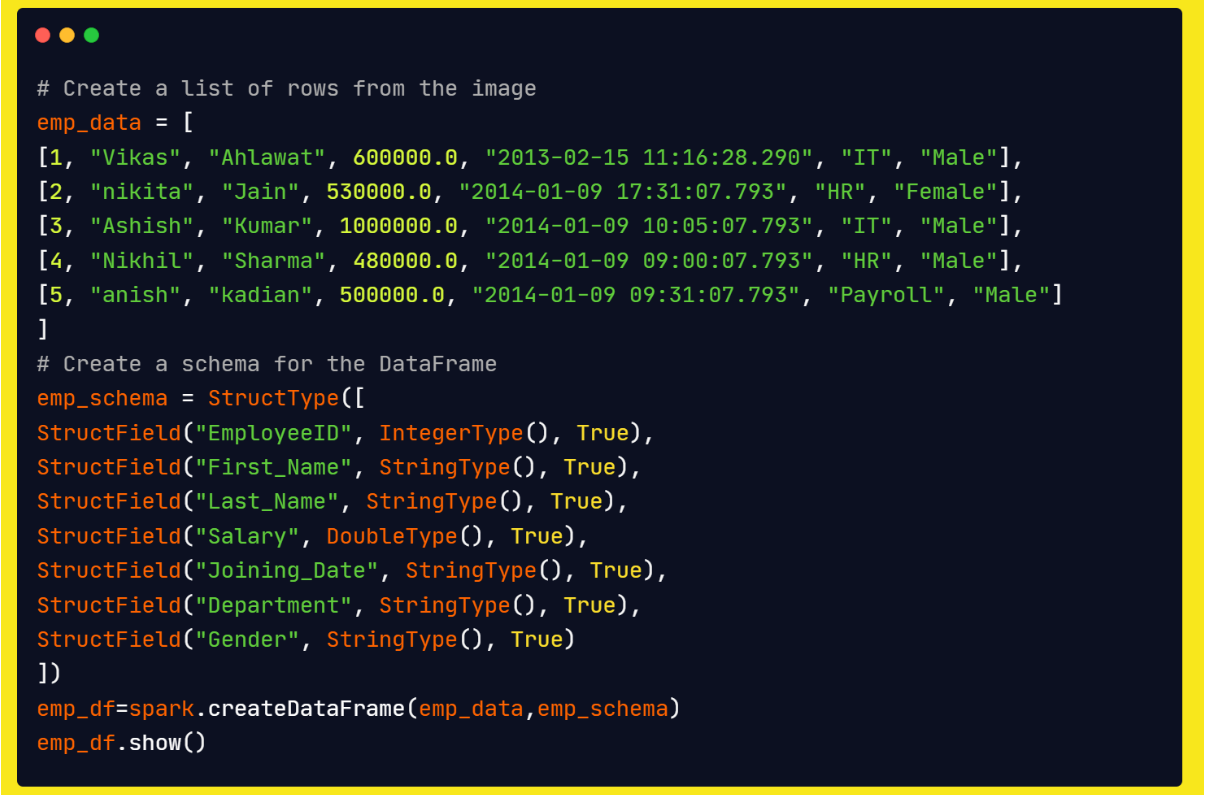
```
# import packages
from pyspark.sql import SparkSession
from pyspark.sql.types import
StructType,StructField,IntegerType,StringType,DoubleType,TimestampType
from pyspark.sql.functions import col

#creating spark session
spark = SparkSession. \
builder. \
config('spark.shuffle.useOldFetchProtocol', 'true'). \
config('spark.ui.port','0'). \
config("spark.sql.warehouse.dir", "/user/itv008042/warehouse"). \
enableHiveSupport(). \
master('yarn'). \
getOrCreate()
```



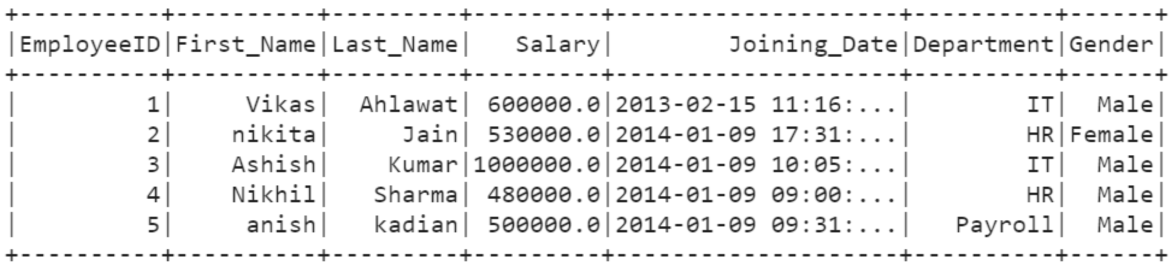
```
pro_schema = StructType([
    StructField("Project_DetailID", IntegerType(), True),
    StructField("Employee_DetailID", IntegerType(), True),
    StructField("Project_Name", StringType(), True)
])
# Create the data as a list of tuples
pro_data = [
    (1, 1, "Task Track"),
    (2, 1, "CLP"),
    (3, 1, "Survey Management"),
    (4, 2, "HR Management"),
    (5, 3, "Task Track"),
    (6, 3, "GRS"),
    (7, 3, "DDS"),
    (8, 4, "HR Management"),
    (9, 6, "GL Management")
]
pro_df=spark.createDataFrame(pro_data,pro_schema)
pro_df.show()
```



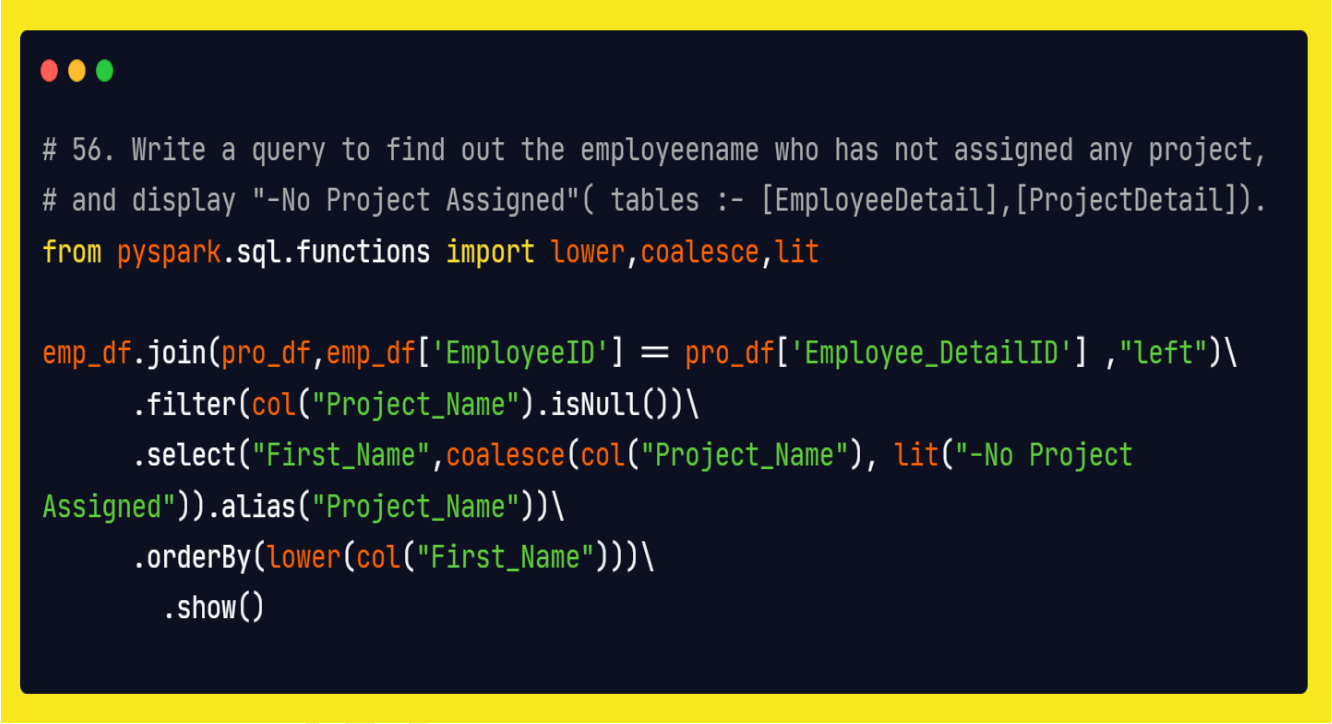
```
+----------------+-----------------+------------------+
|Project_DetailID|Employee_DetailID|      Project_Name|
+----------------+-----------------+------------------+
|               1|                1|        Task Track|
|               2|                1|               CLP|
|               3|                1|Survey Management|
|               4|                2|     HR Management|
|               5|                3|        Task Track|
|               6|                3|               GRS|
|               7|                3|               DDS|
|               8|                4|     HR Management|
|               9|                6|     GL Management|
+----------------+-----------------+------------------+
```



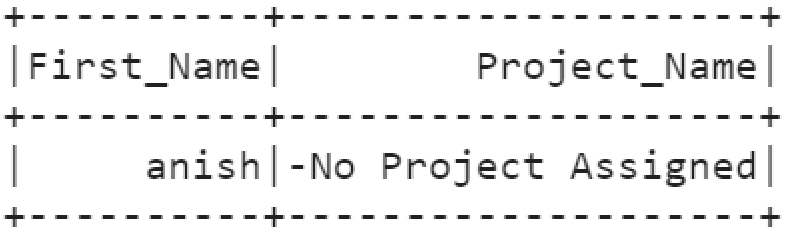
```
# Create a list of rows from the image
emp_data = [
[1, "Vikas", "Ahlawat", 600000.0, "2013-02-15 11:16:28.290", "IT", "Male"],
[2, "nikita", "Jain", 530000.0, "2014-01-09 17:31:07.793", "HR", "Female"],
[3, "Ashish", "Kumar", 1000000.0, "2014-01-09 10:05:07.793", "IT", "Male"],
[4, "Nikhil", "Sharma", 480000.0, "2014-01-09 09:00:07.793", "HR", "Male"],
[5, "anish", "kadian", 500000.0, "2014-01-09 09:31:07.793", "Payroll", "Male"]
]
# Create a schema for the DataFrame
emp_schema = StructType([
StructField("EmployeeID", IntegerType(), True),
StructField("First_Name", StringType(), True),
StructField("Last_Name", StringType(), True),
StructField("Salary", DoubleType(), True),
StructField("Joining_Date", StringType(), True),
StructField("Department", StringType(), True),
StructField("Gender", StringType(), True)
])
emp_df=spark.createDataFrame(emp_data,emp_schema)
emp_df.show()
```



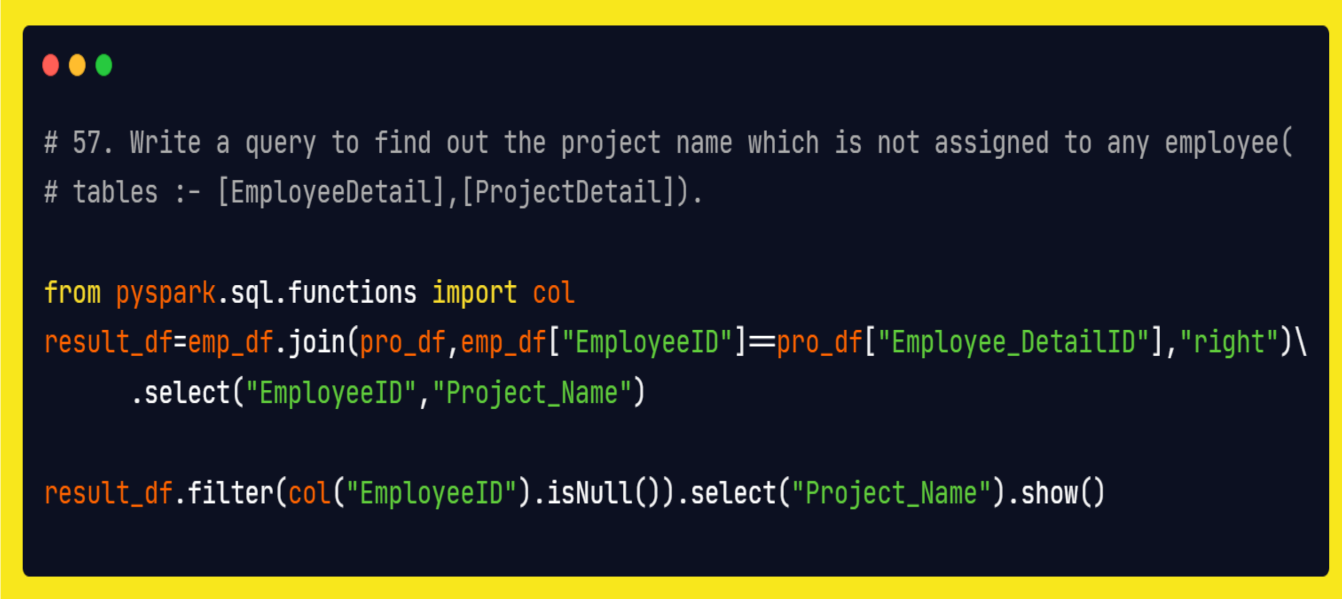
```
+----------+----------+---------+---------+--------------------+----------+------+
|EmployeeID|First_Name|Last_Name|   Salary|        Joining_Date|Department|Gender|
+----------+----------+---------+---------+--------------------+----------+------+
|         1|     Vikas|  Ahlawat| 600000.0|2013-02-15 11:16:...|        IT|  Male|
|         2|    nikita|     Jain| 530000.0|2014-01-09 17:31:...|        HR|Female|
|         3|    Ashish|    Kumar|1000000.0|2014-01-09 10:05:...|        IT|  Male|
|         4|    Nikhil|   Sharma| 480000.0|2014-01-09 09:00:...|        HR|  Male|
|         5|     anish|   kadian| 500000.0|2014-01-09 09:31:...|   Payroll|  Male|
+----------+----------+---------+---------+--------------------+----------+------+
```



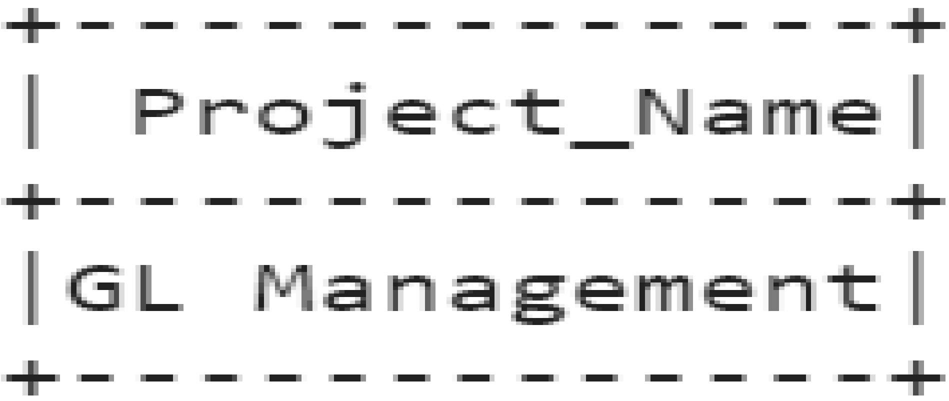
```python
# 56. Write a query to find out the employeename who has not assigned any project,
# and display "-No Project Assigned"( tables :- [EmployeeDetail],[ProjectDetail]).
from pyspark.sql.functions import lower,coalesce,lit

emp_df.join(pro_df,emp_df['EmployeeID'] == pro_df['Employee_DetailID'] ,"left")\
      .filter(col("Project_Name").isNull())\
      .select("First_Name",coalesce(col("Project_Name"), lit("-No Project
Assigned")).alias("Project_Name"))\
      .orderBy(lower(col("First_Name")))\
        .show()
```



```
+----------+--------------------+
|First_Name|        Project_Name|
+----------+--------------------+
|     anish|-No Project Assigned|
+----------+--------------------+
```



```
# 57. Write a query to find out the project name which is not assigned to any employee(
# tables :- [EmployeeDetail],[ProjectDetail]).

from pyspark.sql.functions import col
result_df=emp_df.join(pro_df,emp_df["EmployeeID"]==pro_df["Employee_DetailID"],"right")\
      .select("EmployeeID","Project_Name")

result_df.filter(col("EmployeeID").isNull()).select("Project_Name").show()
```



```
+--------------+
|  Project_Name|
+--------------+
|GL Management|
+--------------+
```

Was it helpful?

follow for more!

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