



CSE488 (Section 1) [Spring 2023]

Lab Assignment Submission Report

LAB 1 (PySpark)

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```
# 1. Find the Air craft, country flying mission and target country for those missions in which time on target was less than 1000.

query= """

SELECT TargetCountry, COUNT(TargetCountry)
FROM Bombing_Operations
WHERE TimeOnTarget < 1000
GROUP BY TargetCountry

"""

ass1=spark.sql(query)
ass1.show()
```

TargetCountry	count(TargetCountry)
CAMBODIA	154639
WESTPAC WATERS	63
SOUTH VIETNAM	1578639
UNKNOWN	48
PHILLIPINES	1
THAILAND	53765
NORTH VIETNAM	432509
LAOS	703833

```
[39] #2. Find the target country and the number of times they have been attacked. Show the result in descending order.
```

```
query= """  
SELECT MissionDate,TargetCountry  
FROM Bombing_Operations B  
ORDER BY B.TimeOnTarget DESC,  
        B.MissionDate DESC  
"""  
  
ass2=spark.sql(query)  
ass2.show()
```

```
+-----+-----+  
|MissionDate|TargetCountry|  
+-----+-----+  
| 1965-11-25|NORTH VIETNAM|  
| 1966-02-18|SOUTH VIETNAM|  
| 1966-02-18|SOUTH VIETNAM|  
| 1966-02-05|SOUTH VIETNAM|  
| 1966-02-05|SOUTH VIETNAM|  
| 1966-01-31|SOUTH VIETNAM|  
| 1965-10-05|SOUTH VIETNAM|  
| 1965-10-05|SOUTH VIETNAM|  
| 1965-10-05|SOUTH VIETNAM|  
| 1965-10-05|SOUTH VIETNAM|  
| 1965-10-05|SOUTH VIETNAM|
```

3.

```
[55] # 3.Find the target country which had been attacked most.
      query= """
      SELECT TargetCountry,
             COUNT(*) TimeOnTarget
      FROM Bombing_Operations
      GROUP BY TargetCountry
      HAVING COUNT(TargetCountry) > 5
      """

      ass3=spark.sql(query)
      ass3.show()
```

TargetCountry	TimeOnTarget
CAMBODIA	218788
WESTPAC WATERS	74
SOUTH VIETNAM	2172403
UNKNOWN	59
THAILAND	60486
NORTH VIETNAM	694269
LAOS	1254695

4.

```
[57] # 4. Find the country flying mission which attacked most.
      query= """
      SELECT ContryFlyingMission,
             COUNT(*) TimeOnTarget
      FROM Bombing_Operations
      GROUP BY ContryFlyingMission
      HAVING COUNT(TimeOnTarget) > 1000
      """

      ass4=spark.sql(query)
      ass4.show()
```

ContryFlyingMission	TimeOnTarget
VIETNAM (SOUTH)	622013
KOREA (SOUTH)	24469
UNITED STATES OF ...	3708997
AUSTRALIA	12519
LAOS	32777

5.

```
[58] # 5. Find the take off location and how many times they had used.
      query= """
      SELECT TakeoffLocation,
             COUNT(TimeOnTarget) TimeOnTarget
      FROM Bombing_Operations
      GROUP BY TakeoffLocation

      """

      ass5=spark.sql(query)
      ass5.show()
```

TakeoffLocation	TimeOnTarget
LOUANG PHRAB	5164
TAN SON NHUT	311871
KHE SANH	27
NHA TRANG	56818
WESTPAC 59	481
KADENA AFB	5413
TONKIN GULF	194182
VINH BINH	10

6.

```
[87] # 6. Find the number of fighter jets from Aircraft_Glossary.
      Aircraft_Glossary.createOrReplaceTempView("Aircraft_Glossary")
      query= """ SELECT COUNT(*) AirCraft FROM Aircraft_Glossary WHERE AirCraftType = 'Fighter Jet' """

      ass6= spark.sql(query)
      ass6.show()
```

AirCraft
10

7.

```
[98] # 7. Find the number of different types air craft for each air craft type.
```

```
query= """ SELECT DISTINCT Aircraft FROM Aircraft_Glossary """
```

```
ass7= spark.sql(query)
ass7.show()
```

```
+-----+
|Aircraft|
+-----+
|E-2|
|LC-130|
|F-5|
|OV-10|
|E-3|
|HC-47|
|HH-3|
|TA-4|
|EC-121|
|AC-123|
|C-76|
|OV-1|
|B-57|
|U-17|
|EB-66|
```

8.

```
p5=Bombing_Operations.join(Aircraft_Glossary,Bombing_Operations.AirCraft == Aircraft_Glossary.Aircraft,"inner") \.show(truncate=False)
```

Aircraft	ContryFlyingMission	MissionDate	OperationSupported	PeriodOfDay	TakeoffLocation	TargetCountry	TimeOnTarget	WeaponType	WeaponsLoadedWeight
EC-47	UNITED STATES OF AMERICA	1971-06-05	null	D	TAN SON NHUT	CAMBODIA	1005.0	null	0
EC-47	UNITED STATES OF AMERICA	1972-12-26	null	D	NAKHON PHANOM	SOUTH VIETNAM	530.0	null	0
RF-4	UNITED STATES OF AMERICA	1973-07-28	null	D	UDORN AB	LAOS	730.0	null	0
A-1	UNITED STATES OF AMERICA	1970-02-02	null	N	NAKHON PHANOM	LAOS	1415.0	BLU27 FIRE BOMB (750)	17400
A-37	VIETNAM (SOUTH)	1970-10-08	null	D	DANANG	SOUTH VIETNAM	1240.0	null	0
F-4	UNITED STATES OF AMERICA	1970-11-25	null	D	UBON AB	LAOS	650.0	MK 82 GP BOMB (500) LD	31860
A-4	UNITED STATES OF AMERICA	1972-03-08	null	D	TONKIN GULF	LAOS	1005.0	null	0
F-4	UNITED STATES OF AMERICA	1971-12-27	null	null	UDORN AB	LAOS	0.0	null	0
A-7	UNITED STATES OF AMERICA	1972-05-24	null	null	TONKIN GULF	NORTH VIETNAM	0.0	null	0
EC-47	UNITED STATES OF AMERICA	1972-09-12	null	D	TAN SON NHUT	SOUTH VIETNAM	710.0	null	0
CH-53	UNITED STATES OF AMERICA	1974-06-13	null	N	NAKHON PHANOM	THAILAND	1800.0	null	0
CH-53	UNITED STATES OF AMERICA	1974-12-19	null	D	NAKHON PHANOM	THAILAND	800.0	null	0
O-1	VIETNAM (SOUTH)	1973-10-24	null	D	NHA TRANG	SOUTH VIETNAM	800.0	null	0
UH-1	VIETNAM (SOUTH)	1974-03-10	null	In	DMU CAT	SOUTH VIETNAM	1800.0	CARGO (TONS)	10

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