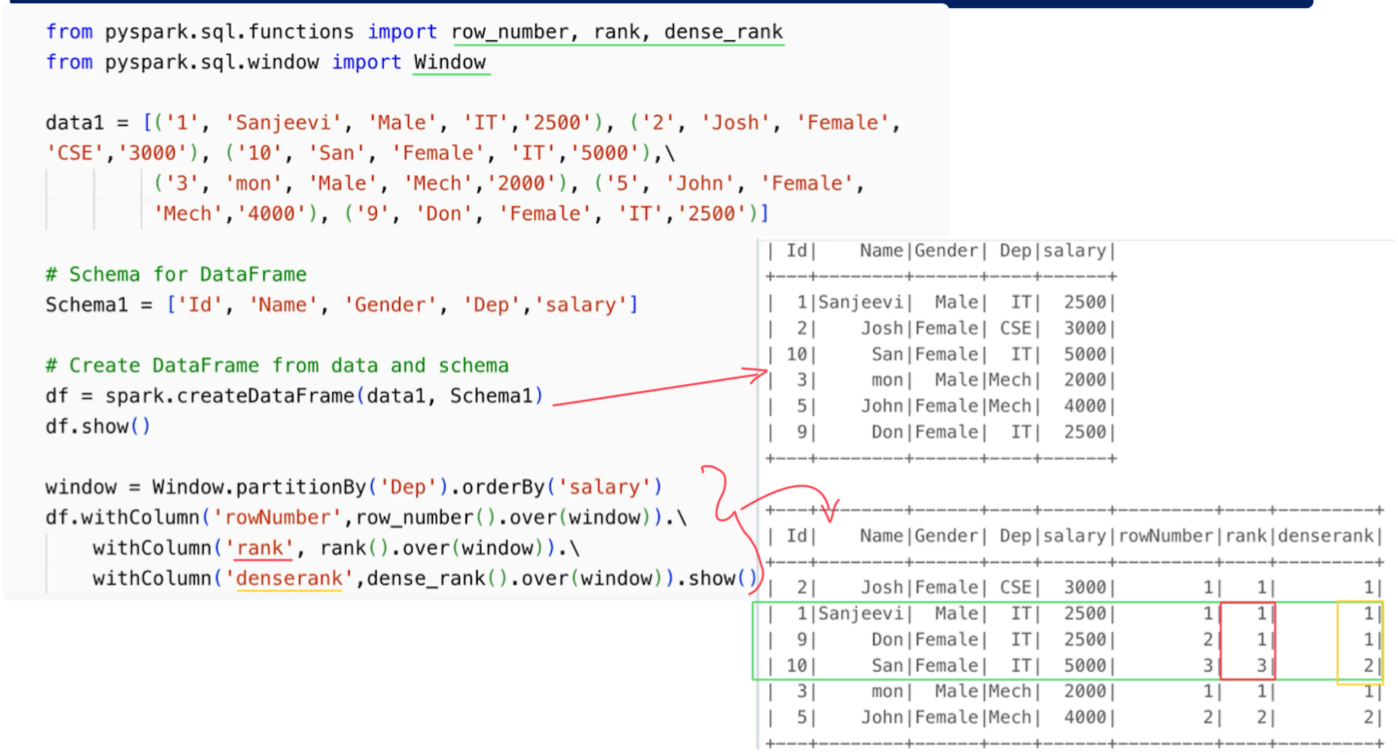
Ranking Functions

- we need to partition the data using Window.partitionBy() , and for row number and rank function we need to additionally order by on partition data using orderBy clause.
- row_number() window function is used to give the sequential row number starting from 1 to the result of each window partition
- rank() window function is used to provide a rank to the result within a window partition. This function leaves gaps in rank when there are ties.
- dense_rank() window function is used to get the result with rank of rows within a window partition without any gaps. This is similar to rank() function difference being rank function leaves gaps in rank when there are ties.



```
from pyspark.sql.functions import row_number, rank, dense_rank
from pyspark.sql.window import Window

data1 = [('1', 'Sanjeevi', 'Male', 'IT','2500'), ('2', 'Josh', 'Female',
'CSE','3000'), ('10', 'San', 'Female', 'IT','5000'),\
         ('3', 'mon', 'Male', 'Mech','2000'), ('5', 'John', 'Female',
         'Mech','4000'), ('9', 'Don', 'Female', 'IT','2500')]

# Schema for DataFrame
Schema1 = ['Id', 'Name', 'Gender', 'Dep','salary']

# Create DataFrame from data and schema
df = spark.createDataFrame(data1, Schema1)
df.show()

window = Window.partitionBy('Dep').orderBy('salary')
df.withColumn('rowNumber',row_number().over(window)).\
    withColumn('rank', rank().over(window)).\
    withColumn('denserank',dense_rank().over(window)).show()
```

```
| Id|    Name|Gender| Dep|salary|
+---+--------+------+----+------+
|  1|Sanjeevi|  Male|  IT|  2500|
|  2|    Josh|Female| CSE|  3000|
| 10|     San|Female|  IT|  5000|
|  3|     mon|  Male|Mech|  2000|
|  5|    John|Female|Mech|  4000|
|  9|     Don|Female|  IT|  2500|
+---+--------+------+----+------+
```

```
+---+--------+------+----+------+---------+----+---------+
| Id|    Name|Gender| Dep|salary|rowNumber|rank|denserank|
+---+--------+------+----+------+---------+----+---------+
|  2|    Josh|Female| CSE|  3000|        1|   1|        1|
|  1|Sanjeevi|  Male|  IT|  2500|        1|   1|        1|
|  9|     Don|Female|  IT|  2500|        2|   1|        1|
| 10|     San|Female|  IT|  5000|        3|   3|        2|
|  3|     mon|  Male|Mech|  2000|        1|   1|        1|
|  5|    John|Female|Mech|  4000|        2|   2|        2|
+---+--------+------+----+------+---------+----+---------+
```