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# Databricks notebook source
import pyspark
from pyspark.sql import SparkSession
spark = SparkSession.builder.appName('pyspark-by-examples').getOrCreate()

arrayData = [
    ('James', ['Java', 'Scala'], {'hair': 'black', 'eye': 'brown'}),
    ('Michael', ['Spark', 'Java', None], {'hair': 'brown', 'eye': None}),
    ('Robert', ['CSharp', ''], {'hair': 'red', 'eye': ''}),
    ('Washington', None, None),
    ('Jefferson', ['1', '2'], {})
]

df = spark.createDataFrame(data=arrayData, schema =
['name', 'knownLanguages', 'properties'])
df.printSchema()
df.show()

from pyspark.sql.functions import explode
df2 = df.select(df.name, explode(df.knownLanguages))
df2.printSchema()
df2.show()

from pyspark.sql.functions import explode
df3 = df.select(df.name, explode(df.properties))
df3.printSchema()
df3.show()

from pyspark.sql.functions import explode_outer
""" with array """
df.select(df.name, explode_outer(df.knownLanguages)).show()
""" with map """
df.select(df.name, explode_outer(df.properties)).show()

from pyspark.sql.functions import posexplode
""" with array """
df.select(df.name, posexplode(df.knownLanguages)).show()
""" with map """
df.select(df.name, posexplode(df.properties)).show()

from pyspark.sql.functions import posexplode_outer
""" with array """
df.select(df.name, posexplode_outer(df.knownLanguages)).show()

""" with map """
df.select(df.name, posexplode_outer(df.properties)).show()

"""END"""

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# COMMAND -----