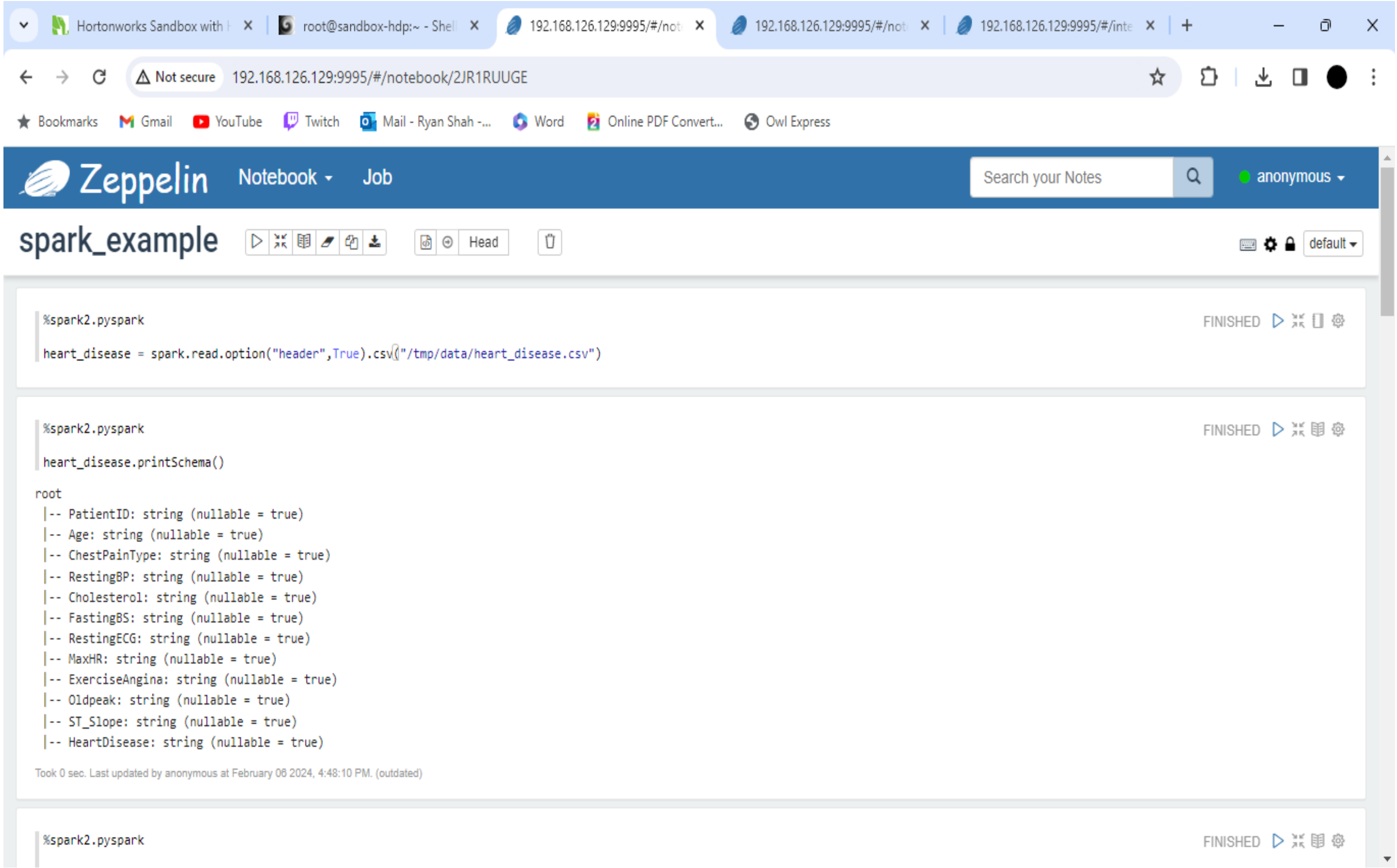
Week 3 Module Assignment

All The Codes and Data Schema Screenshots:



```
%spark2.pyspark

heart_disease = spark.read.option("header",True).csv("/tmp/data/heart_disease.csv")
```

```
%spark2.pyspark

heart_disease.printSchema()
```

```
root
 |-- PatientID: string (nullable = true)
 |-- Age: string (nullable = true)
 |-- ChestPainType: string (nullable = true)
 |-- RestingBP: string (nullable = true)
 |-- Cholesterol: string (nullable = true)
 |-- FastingBS: string (nullable = true)
 |-- RestingECG: string (nullable = true)
 |-- MaxHR: string (nullable = true)
 |-- ExerciseAngina: string (nullable = true)
 |-- Oldpeak: string (nullable = true)
 |-- ST_Slope: string (nullable = true)
 |-- HeartDisease: string (nullable = true)
```

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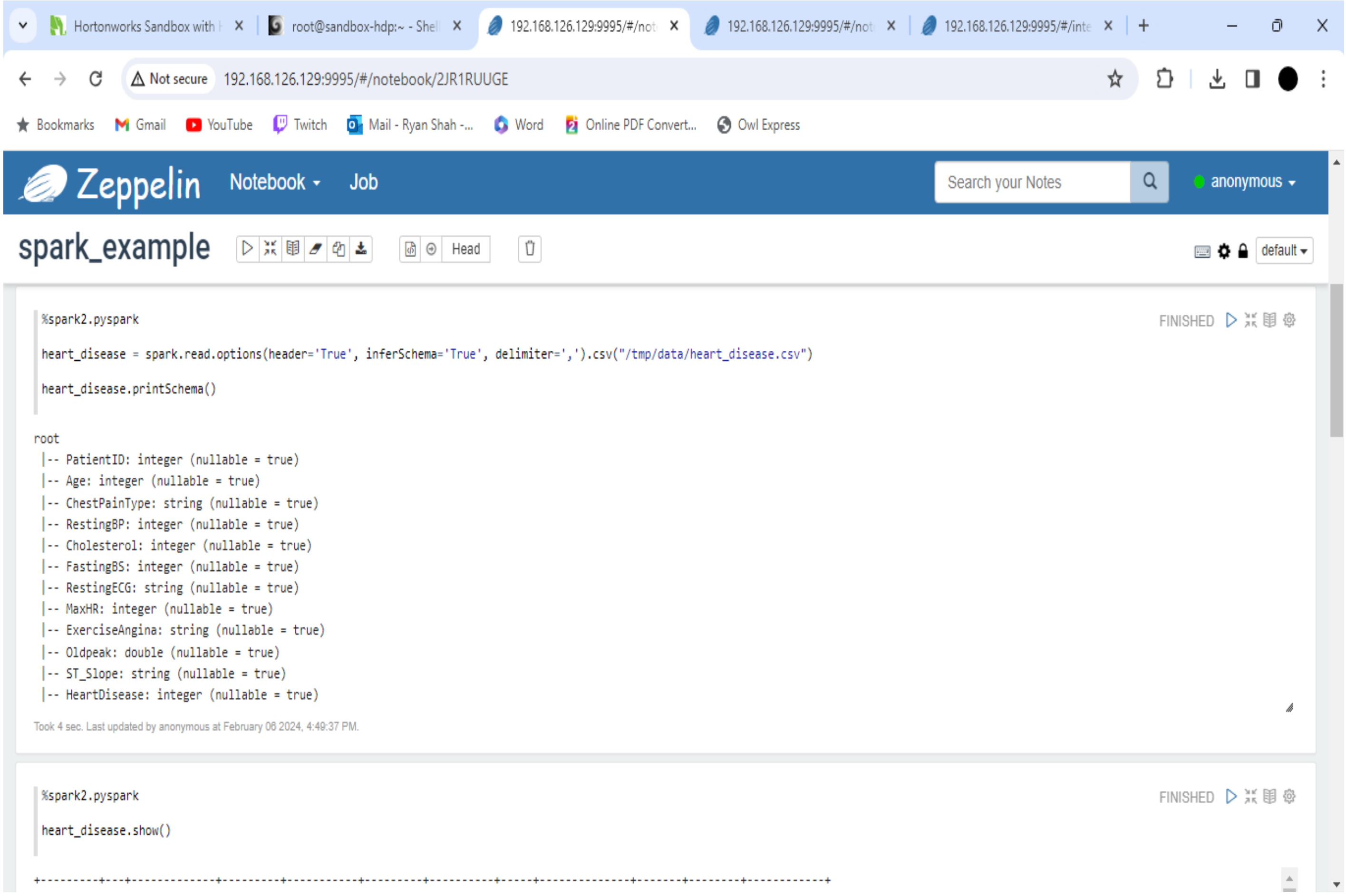
```
%spark2.pyspark
```



```
%spark2.pyspark

heart_disease = spark.read.options(header='True', inferSchema='True', delimiter=',').csv("/tmp/data/heart_disease.csv")

heart_disease.printSchema()
```

```
root
 |-- PatientID: integer (nullable = true)
 |-- Age: integer (nullable = true)
 |-- ChestPainType: string (nullable = true)
 |-- RestingBP: integer (nullable = true)
 |-- Cholesterol: integer (nullable = true)
 |-- FastingBS: integer (nullable = true)
 |-- RestingECG: string (nullable = true)
 |-- MaxHR: integer (nullable = true)
 |-- ExerciseAngina: string (nullable = true)
 |-- Oldpeak: double (nullable = true)
 |-- ST_Slope: string (nullable = true)
 |-- HeartDisease: integer (nullable = true)
```

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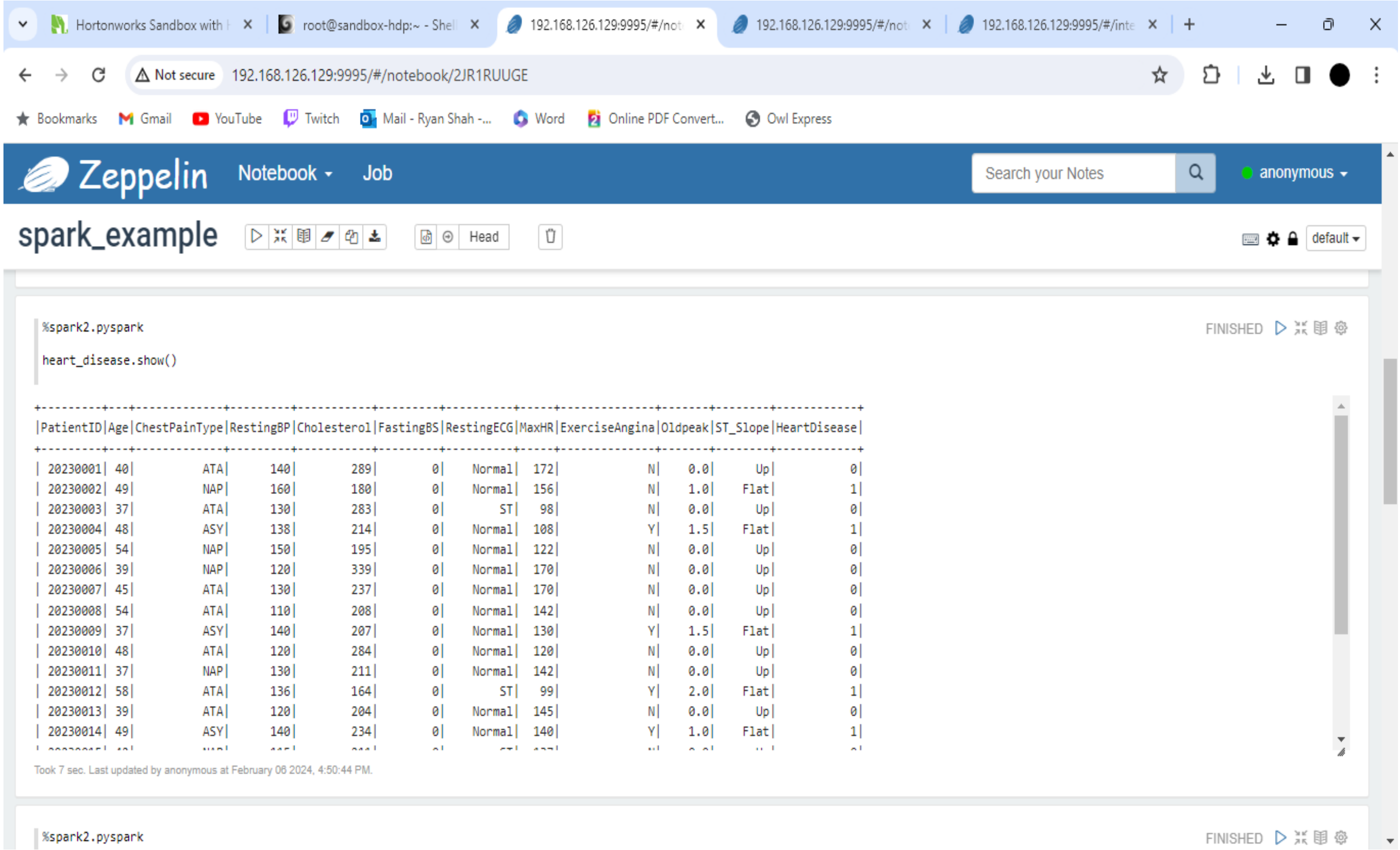
```
%spark2.pyspark

heart_disease.show()
```

```
+---------+---+-------------+---------+-----------+---------+----------+-----+--------------+-------+--------+------------+
```



```
%spark2.pyspark

heart_disease.show()
```

```
+---------+---+-------------+---------+-----------+---------+----------+-----+--------------+-------+--------+------------+
|PatientID|Age|ChestPainType|RestingBP|Cholesterol|FastingBS|RestingECG|MaxHR|ExerciseAngina|Oldpeak|ST_Slope|HeartDisease|
+---------+---+-------------+---------+-----------+---------+----------+-----+--------------+-------+--------+------------+
| 20230001| 40|          ATA|      140|        289|        0|    Normal|  172|             N|    0.0|      Up|           0|
| 20230002| 49|          NAP|      160|        180|        0|    Normal|  156|             N|    1.0|    Flat|           1|
| 20230003| 37|          ATA|      130|        283|        0|        ST|   98|             N|    0.0|      Up|           0|
| 20230004| 48|          ASY|      138|        214|        0|    Normal|  108|             Y|    1.5|    Flat|           1|
| 20230005| 54|          NAP|      150|        195|        0|    Normal|  122|             N|    0.0|      Up|           0|
| 20230006| 39|          NAP|      120|        339|        0|    Normal|  170|             N|    0.0|      Up|           0|
| 20230007| 45|          ATA|      130|        237|        0|    Normal|  170|             N|    0.0|      Up|           0|
| 20230008| 54|          ATA|      110|        208|        0|    Normal|  142|             N|    0.0|      Up|           0|
| 20230009| 37|          ASY|      140|        207|        0|    Normal|  130|             Y|    1.5|    Flat|           1|
| 20230010| 48|          ATA|      120|        284|        0|    Normal|  120|             N|    0.0|      Up|           0|
| 20230011| 37|          NAP|      130|        211|        0|    Normal|  142|             N|    0.0|      Up|           0|
| 20230012| 58|          ATA|      136|        164|        0|        ST|   99|             Y|    2.0|    Flat|           1|
| 20230013| 39|          ATA|      120|        204|        0|    Normal|  145|             N|    0.0|      Up|           0|
| 20230014| 49|          ASY|      140|        234|        0|    Normal|  140|             Y|    1.0|    Flat|           1|
```

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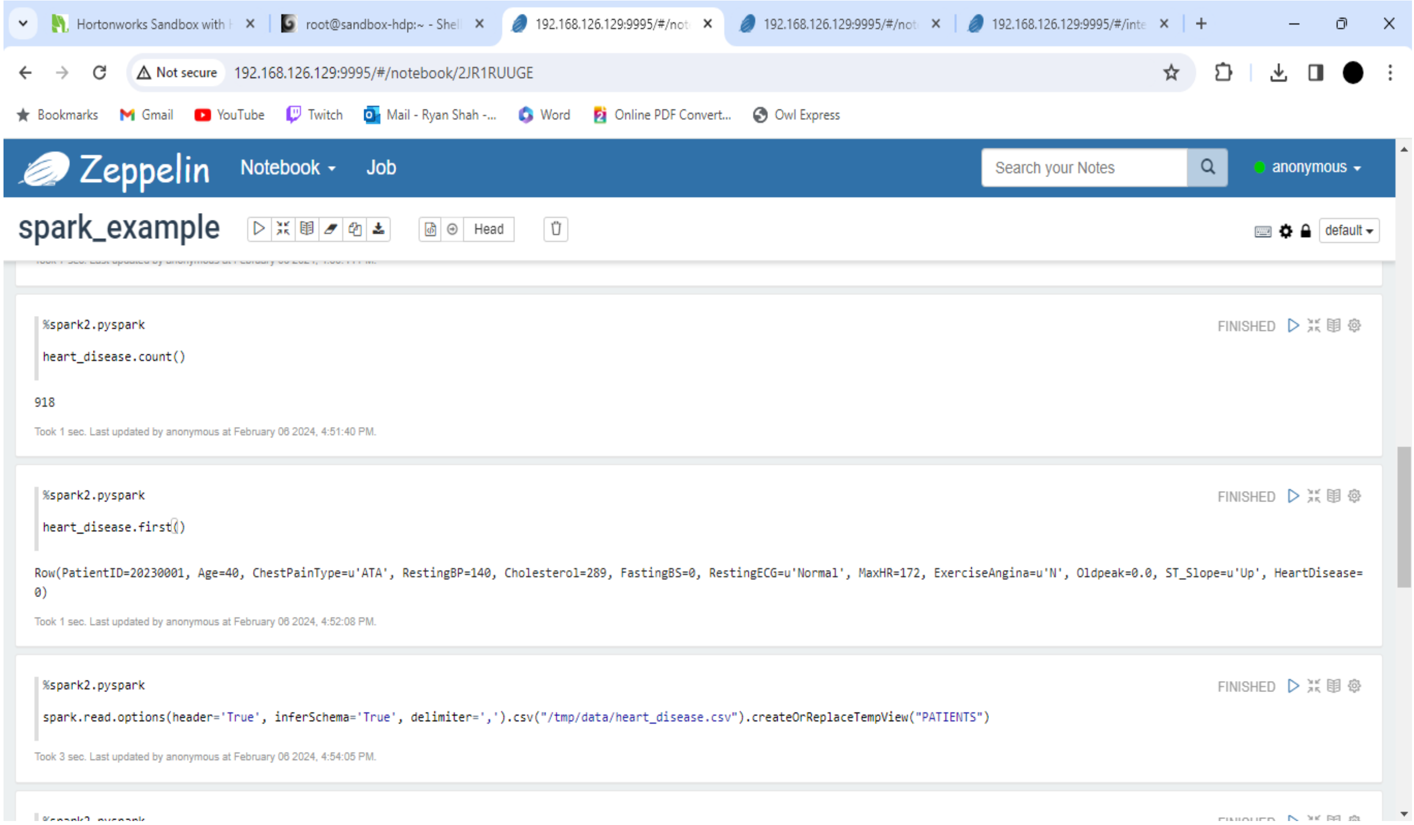
```
%spark2.pyspark
```



```
%spark2.pyspark

heart_disease.count()
```

```
918
```

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```
%spark2.pyspark

heart_disease.first()
```

```
Row(PatientID=20230001, Age=40, ChestPainType=u'ATA', RestingBP=140, Cholesterol=289, FastingBS=0, RestingECG=u'Normal', MaxHR=172, ExerciseAngina=u'N', Oldpeak=0.0, ST_Slope=u'Up', HeartDisease=
0)
```

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```
%spark2.pyspark

spark.read.options(header='True', inferSchema='True', delimiter=',').csv("/tmp/data/heart_disease.csv").createOrReplaceTempView("PATIENTS")
```

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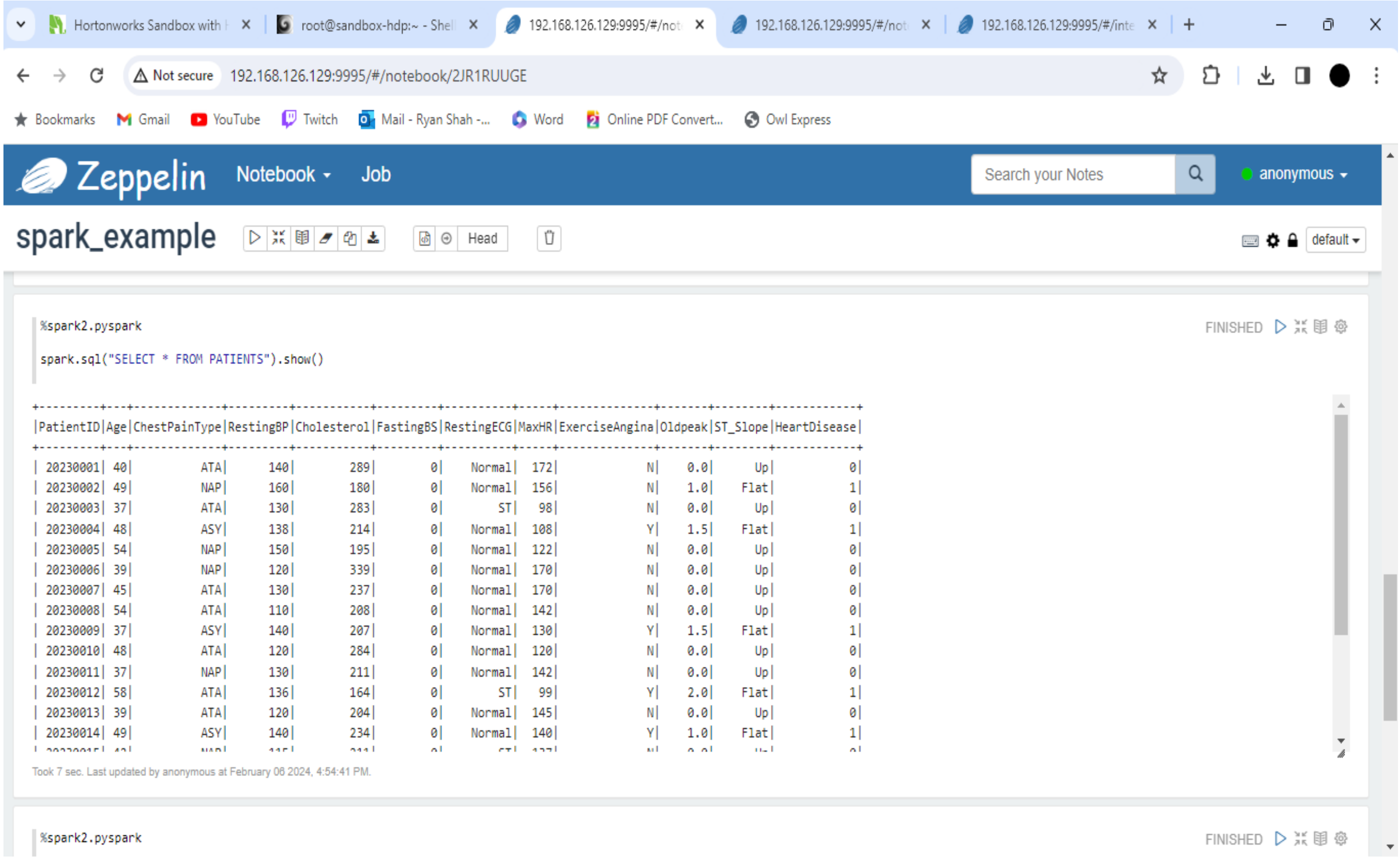

```
%spark2.pyspark

spark.sql("SELECT * FROM PATIENTS").show()
```

```
+---------+---+-------------+---------+-----------+---------+----------+-----+--------------+-------+--------+------------+
|PatientID|Age|ChestPainType|RestingBP|Cholesterol|FastingBS|RestingECG|MaxHR|ExerciseAngina|Oldpeak|ST_Slope|HeartDisease|
+---------+---+-------------+---------+-----------+---------+----------+-----+--------------+-------+--------+------------+
| 20230001| 40|          ATA|      140|        289|        0|    Normal|  172|             N|    0.0|      Up|           0|
| 20230002| 49|          NAP|      160|        180|        0|    Normal|  156|             N|    1.0|    Flat|           1|
| 20230003| 37|          ATA|      130|        283|        0|        ST|   98|             N|    0.0|      Up|           0|
| 20230004| 48|          ASY|      138|        214|        0|    Normal|  108|             Y|    1.5|    Flat|           1|
| 20230005| 54|          NAP|      150|        195|        0|    Normal|  122|             N|    0.0|      Up|           0|
| 20230006| 39|          NAP|      120|        339|        0|    Normal|  170|             N|    0.0|      Up|           0|
| 20230007| 45|          ATA|      130|        237|        0|    Normal|  170|             N|    0.0|      Up|           0|
| 20230008| 54|          ATA|      110|        208|        0|    Normal|  142|             N|    0.0|      Up|           0|
| 20230009| 37|          ASY|      140|        207|        0|    Normal|  130|             Y|    1.5|    Flat|           1|
| 20230010| 48|          ATA|      120|        284|        0|    Normal|  120|             N|    0.0|      Up|           0|
| 20230011| 37|          NAP|      130|        211|        0|    Normal|  142|             N|    0.0|      Up|           0|
| 20230012| 58|          ATA|      136|        164|        0|        ST|   99|             Y|    2.0|    Flat|           1|
| 20230013| 39|          ATA|      120|        204|        0|    Normal|  145|             N|    0.0|      Up|           0|
| 20230014| 49|          ASY|      140|        234|        0|    Normal|  140|             Y|    1.0|    Flat|           1|
```

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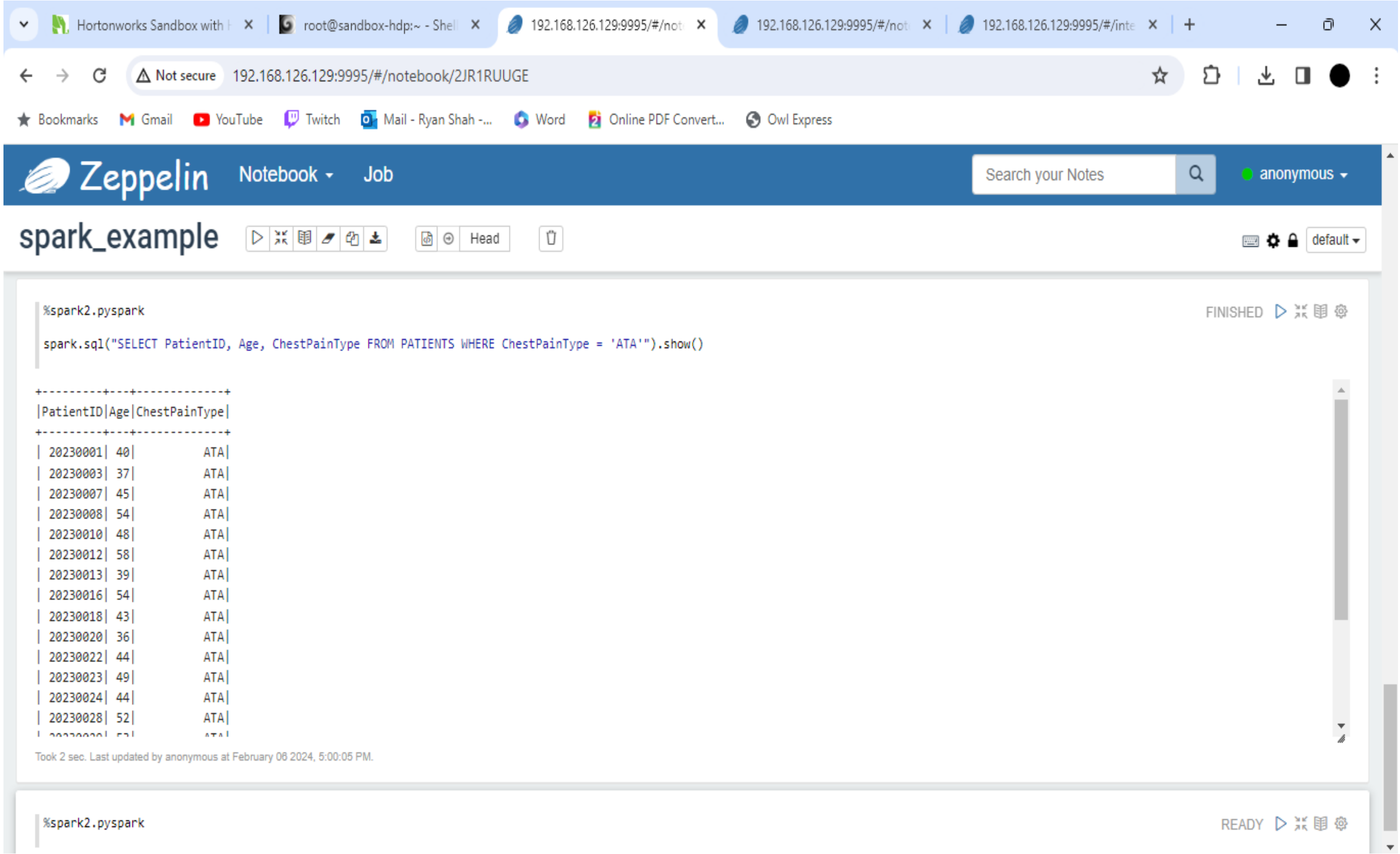
```
%spark2.pyspark
```



```
%spark2.pyspark

spark.sql("SELECT PatientID, Age, ChestPainType FROM PATIENTS WHERE ChestPainType = 'ATA'").show()
```

```
+---------+---+-------------+
|PatientID|Age|ChestPainType|
+---------+---+-------------+
| 20230001| 40|          ATA|
| 20230003| 37|          ATA|
| 20230007| 45|          ATA|
| 20230008| 54|          ATA|
| 20230010| 48|          ATA|
| 20230012| 58|          ATA|
| 20230013| 39|          ATA|
| 20230016| 54|          ATA|
| 20230018| 43|          ATA|
| 20230020| 36|          ATA|
| 20230022| 44|          ATA|
| 20230023| 49|          ATA|
| 20230024| 44|          ATA|
| 20230028| 52|          ATA|
```

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```
%spark2.pyspark
```