```
In [58]: import pyspark
         from pyspark.sql import SparkSession
         from pyspark.sql.types import StructType,StructField, StringType, IntegerType
         from pyspark.sql.types import ArrayType, DoubleType, BooleanType
         from pyspark.sql.functions import col, array contains
         spark = SparkSession.builder.appName('SparkByExamples.com').getOrCreate()
         df = spark.read.csv(r"C:\Users\SaikumarGanji\Downloads\complaints.csv")
         df.show()
                  c0|
         |Complaint ID|
                                   Product
                                                    Sub-product
                                                                               Issuel
                                                                                                Sub-issue|State|ZIP code|Submit
         ted via Date received Date sent to company
                                                                            Company response | Timely response ? | Consumer dispute
                                                                Company
         d?|
                                                      Medical|Disclosure verifi...|Not given enough ...|
               1114245
                            Debt collection
                                                                                                                  32219
                                    11/13/2014 Choice Recovery, Inc Closed with expla...
         Web | 11/13/2014 |
                                                                                                      Yesl
                                                                                                                         NA
                                                        Medical|Disclosure verifi...|Right to dispute ...|
               1114488
                            Debt collection
                                                                                                            TX
                                                                                                                  75006
                                    11/13/2014 Expert Global Sol...
         Web | 11/13/2014 |
                                                                             In progress
                                                                                                      Yes
                                                                                                                         NA
                                              Checking account Deposits and with...
               1114255 Bank account or s...
                                                                                                      NA
                                                                                                            NY
                                                                                                                  11102
                                    11/13/2014 FNIS (Fidelity Na...
         Web | 11/13/2014 |
                                                                             In progress
                                                                                                      Yes
                                                                                                                         NA
               1115106
                           Debt collection | Other (phone, hea... | Communication tac... | Frequent or repea...
                                                                                                                   31721
                                    11/13/2014 Expert Global Sol...
                                                                            In progress
         Webl
              11/13/2014
                                                                                                                         NA
                                                             NA|Incorrect informa...|Information is no...
               1115890
                           Credit reporting
                                                                                                            FL
                                                                                                                   33461
                                                        TransUnion
         Webl
              11-12-2014
                                    11/13/2014
                                                                             In progress
                                                                                                      Yesl
                                                                                                                         NA
               1114180
                            Debt collection
                                              Credit card Cont'd attempts c...
                                                                                        Debt is not mine
                                                                                                            CA
                                                                                                                  95035
                                    11/13/2014 Expert Global Sol...
         Web | 11-12-2014 |
                                                                             In progress
                                                                                                                         NA
                                                                                                      Yesl
                                                   Vehicle loan | Managing the loan... |
                              Consumer loan
               1114124
                                                                                                      NA
                                                                                                            MI
                                                                                                                  48430 l
         Fax | 11-12-2014 |
                                    11/13/2014 Ally Financial Inc
                                                                             In progress
                                                                                                      Yes
                                                                                                                         NA
                                                    Credit card False statements ... Indicated committ...
               1113211
                            Debt collection
                                                                                                            MS
                                                                                                                   39056
```

Web	11-12-2014	Premium Asset Ser In progress	Yes		NA		
	1112443 Consumer loan	Installment loan Managing the loan	NA	CA	94509		
Web	11-12-2014	Ally Financial Inc In progress	Yes		NA		
	1112618 Debt collection	Medical Disclosure verifi Not	given enough	FL	34743		
Web	11-12-2014 11-12-2014	Enhanced Recovery Closed with non-m	Yes		NA		
	1111987 Credit reporting	NA Credit reporting No n	otice of inve	CN	8852		
Web	11-12-2014 11-12-2014	TransUnion Closed with expla	Yes		NA		
	1113072 Credit reporting	NA Incorrect informa	Account status	NY	11514		
Web	11-12-2014	TransUnion Closed with expla	Yes		NA		
	1112733 Debt collection	Medical Communication tac Used	obscene/prof	WA	98034		
Web	11-12-2014 11-12-2014	Renton Collection $ $ Closed with expla $ $	Yes		NA	i	
	1112115 Mortgage Conv	entional fixe Loan modification	NA	CN	8527		
Web	11-12-2014	Seterus Closed with expla	Yes		NA	i	
	1112705 Credit reporting	NA Unable to get cre Prob	lem getting r	CA	90716		
Web	11-12-2014	TransUnion Closed with expla	Yes		NA	i	
	1113116 Credit reporting	NA Incorrect informa	Account status	CT	6242		
Web	11-12-2014	TransUnion Closed with expla	Yes		NA	i	
	1112181 Debt collection	<pre>Credit card Cont'd attempts c </pre>	Debt is not mine	FL	34481		
Web	11-12-2014 11-12-2014	Commonwealth Fina Closed with expla	Yes		NA	i	
	1113153 Debt collection Othe	^ (phone, hea Cont'd attempts c	Debt was paid	GA	30345		
Web	11-12-2014	EOS Holdings, Inc Closed with expla	Yes		NA	i	
	1112011 Debt collection	Medical Cont'd attempts c Debt	resulted fro	SC	29360		
Web	11-12-2014 11-12-2014	Revenue Recovery \ldots Closed with expla \ldots	Yes		NA	ı	
+	+		+	+			
++							

-+

only showing top 20 rows

```
In [59]: import pyspark
        from pyspark.sql import SparkSession
        df=spark.read.csv(r'C:\\Users\\SaikumarGanii\\Downloads\\Complaints.csv')
        df.show()
        df.count()
                                     _c1|
                  c0|
         c7|
               .....
                                                  Sub-product
         |Complaint ID|
                                  Product
                                                                                           Sub-issue|State|ZIP code|Submit
                                                                           Issuel
        ted via Date received Date sent to company
                                                                        Company response | Timely response ? | Consumer dispute
                                                             Company
         d?|
              1114245
                          Debt collection
                                                     Medical|Disclosure verifi...|Not given enough ...|
                                                                                                             32219
                                  11/13/2014 Choice Recovery, Inc Closed with expla...
         Webl
              11/13/2014
                                                                                                 Yesl
                                                                                                                   NA
                                                     Medical|Disclosure verifi...|Right to dispute ...|
                          Debt collection
              1114488
                                                                                                       TX
                                                                                                             75006
                                  11/13/2014 Expert Global Sol...
         Webl
              11/13/2014
                                                                         In progress
                                                                                                Yes
                                                                                                                   NA l
              1114255 Bank account or s... | Checking account Deposits and with...
                                                                                                             11102
                                                                                                 NA
                                                                                                       NY
              11/13/2014
                                   11/13/2014 FNIS (Fidelity Na...
                                                                         In progress
         Webl
                                                                                                 Yes
                                                                                                                   NA
                          Debt collection Other (phone, hea... | Communication tac... | Frequent or repea...
              1115106
                                                                                                       GAL
                                                                                                             31721
         Web | 11/13/2014 |
                                  11/13/2014 Expert Global Sol...
                                                                         In progress
                                                                                                 Yesl
                                                                                                                   NA
                         Credit reporting
                                                          NA|Incorrect informa...|Information is no...
              1115890
                                                                                                       FL
                                                                                                             33461
                                                                         In progress
         Webl
              11-12-2014
                                  11/13/2014
                                                      TransUnion
                                                                                                 Yesl
                                                                                                                   NA l
                          Debt collection
              1114180
                                                 Credit card Cont'd attempts c... | Debt is not mine
                                                                                                             95035 l
                                                                                                       CAL
              11-12-2014
                                  11/13/2014 Expert Global Sol...
                                                                         In progress
         Webl
                                                                                                                   NA
                                                                                                 Yesl
                                                Vehicle loan Managing the loan...
              1114124
                            Consumer loan
                                                                                                 NA
                                                                                                       MI
                                                                                                             48430
         Fax | 11-12-2014 |
                                   11/13/2014 Ally Financial Incl
                                                                         In progress
                                                                                                 Yes
                                                                                                                   NA
                                                 Credit card|False statements ...|Indicated committ...
                          Debt collection
              1113211
                                                                                                             39056
                                                                                                       MS
                                                                         In progress
         Web | 11-12-2014 |
                                   11-12-2014 Premium Asset Ser...
                                                                                                 Yes
                                                                                                                   NA
                                             Installment loan|Managing the loan...|
              1112443
                            Consumer loan
                                                                                                 NA
                                                                                                       CAL
                                                                                                             94509
                                                                         In progress
         Web | 11-12-2014
                                   11-12-2014 Ally Financial Incl
                                                                                                 Yes
                                                                                                                   NA
              1112618
                          Debt collection
                                                     Medical|Disclosure verifi...|Not given enough ...|
                                                                                                             34743 l
                                                                                                       FL
                                  11-12-2014 Enhanced Recovery... Closed with non-m...
         Web | 11-12-2014 |
                                                                                                Yesl
                                                                                                                   NA
                         Credit reporting
                                                          NA | Credit reporting ... | No notice of inve... |
              1111987
                                                                                                              8852 l
                                                     TransUnion Closed with expla...
         Webl
              11-12-2014
                                  11-12-2014
                                                                                                                   NA
              1113072
                         Credit reporting
                                                          NA|Incorrect informa...|
                                                                                      Account status
                                                                                                       NY
                                                                                                             11514
                                                TransUnion Closed with expla...
               11-12-2014
                                   11-12-2014
                                                                                                                   NA
         Webl
                                                                                                 Yesl
```

```
Debt collection
                                                 Medical Communication tac... | Used obscene/prof...
             1112733
                                                                                              WA l
                                                                                                   98034 l
                                11-12-2014 Renton Collection... | Closed with expla... |
            11-12-2014
        Webl
                                                                                        Yes
                                                                                                         NA l
                              Mortgage | Conventional fixe... | Loan modification... |
             1112115
                                                                                                    8527 l
                                                                                         NA
                                                                                              ИJI
                                11-12-2014
             11-12-2014
                                                    Seterus Closed with expla...
        Webl
                                                                                        Yes
                                                                                                         NA
             1112705
                       Credit reporting
                                                     NA|Unable to get cre...|Problem getting r...
                                                                                                   90716
                                                                                              CA
                                                 TransUnion Closed with expla...
        Webl
             11-12-2014
                                11-12-2014
                                                                                        Yes
                                                                                                         NA
             1113116
                       Credit reporting
                                                     NA|Incorrect informa...|
                                                                               Account status
                                                                                              CT
                                                                                                    6242
             11-12-2014
                                11-12-2014
                                                 TransUnion Closed with expla...
                                                                                                         NA
        Webl
                                                                                        Yes
             1112181
                        Debt collection
                                             Credit card Cont'd attempts c...
                                                                             Debt is not mine
                                                                                              FL
                                                                                                    34481
        Web | 11-12-2014 |
                                11-12-2014 Commonwealth Fina... Closed with expla...
                                                                                                         NA l
                                                                                        Yesl
                        Debt collection | Other (phone, hea... | Cont'd attempts c... |
                                                                                                   30345
             1113153
                                                                                Debt was paid
                                                                                              GAL
                                           EOS Holdings, Inc Closed with expla...
        Web | 11-12-2014 |
                                11-12-2014
                                                                                        Yesl
                                                                                                         NA
             1112011
                        Debt collection
                                                 Medical|Cont'd attempts c...|Debt resulted fro...
                                                                                              scl
                                                                                                   29360
                                11-12-2014 Revenue Recovery ... | Closed with expla... |
        Webl
              11-12-2014
                                                                                                         NA l
            ______
             only showing top 20 rows
Out[59]: 312913
In [72]: df1=spark.sql("select count( c0) from complaints where c11 = 'In progress'")
        df1.show()
        +----+
        |count(c0)|
              2612
        +----+
```

```
----+
                _c10|max( c0)|
|Praxis Financial ... | 1083515|
|Worldwide Process...| 1076364|
|Lincoln Mortgage ...| 1071017|
|Law Office of Joe...| 1064107|
|Array Services Gr...| 1058623|
       Loan To Learn | 1035595
       PlusFour, Inc| 998737|
    Security Finance | 1091472|
|Capital Markets C...| 1079608|
|Law Office of Har...| 1059214|
|Holloway & Moxley...| 1055073|
   Toll Brothers Inc | 1056117|
|Brazos Higher Edu...| 1046185|
|Collection Bureau...| 1071486|
|GLOBAL SOLUTION B...| 1048376|
 Stillman Law Office | 1025998 |
|Platinum Mortgage...| 1026337|
|Metropolitan Home...| 1020230|
|Homebridge Financ...| 1012938|
|Louisiana Recover...| 1010424|
+----+
only showing top 20 rows
```

localhost:8812/notebooks/pyspark new.ipynb

```
In [71]: df.createOrReplaceTempView("complaints")
         df3=spark.sql("select _c10 from complaints where complaints._c11='Closed with explanation' and complaints._c12 ='Yes'").
                          _c10|
         |Choice Recovery, Inc|
                    TransUnion
                    TransUnion
          |Renton Collection...|
                       Seterus
                    TransUnion
                    TransUnion
         |Commonwealth Fina...|
             EOS Holdings, Inc
          |Revenue Recovery ...|
                    TransUnion
          |GLA Collection Co...|
                   Wells Fargo
                    TransUnion
                    TransUnion
                    TransUnion
          |Stellar Recovery Inc|
                    TransUnion
         |Convergent Resour...|
         |Southwest Recover...|
         +----+
```

only showing top 20 rows

In [79]:	<pre>df=spark.sql("select max(_c10) from complaints where _c12='Yes'") df.show()</pre>				
	++ max(_c10) +				
	iServe Trust ++				
In []:					
In []:					
In []:					
In []:					
In []:					
In []:					
In []:					
In []:					
In []:					