```scala
17    val file = new File(filePath)
18    val fis = new FileInputStream(file)
19    prop.load(fis)
20
21    val login = prop.getProperty("login")
22    val password = prop.getProperty("password")
23
24    var misqlCon = s"jdbc:mysql://localhost:3306/spark?user=$login&password=$password"
25    var driver = "com.mysql.cj.jdbc.Driver"
26
27    val t1 = System.currentTimeMillis()
28
29    if(1==1){
30        var df = spark.read.option("delimiter",",")
31                    .option("header", "true")
32                    .csv("C:/Users/Esdesu/Desktop/JreJre/ETL/HomeWork/ETL/Work#2/Task_1/fifa_s2.csv")
33
34        val df1 = df
35        df1.write.format("jdbc").option("url", misqlCon)
36            .option("driver", driver).option("dbtable", "w2t1")
37            .mode("overwrite").save()
38        df1.show()
39
40        val columns_null = df1.select(df1.columns.map(c => count(when(col(c).isNull || col(c) === "" || col(c).isNaN, c)).alias(c)): _*)
41        columns_null.show()
42
43        val df2 = df1.na.drop()
44        df2.write.format("jdbc").option("url", misqlCon)
45            .option("driver", driver).option("dbtable", "w2t1a")
46            .mode("overwrite").save()
47        df2.show()
48
49        val columns = df2.columns.map(c => sum(col(c).isNull.cast("integer")).alias(c))
50        val dataf = df2.agg(columns.head, columns.tail:_*)
51        val t = dataf.columns.map(c => dataf.select(lit(c).alias("col_name"), col(c).alias("null_count")))
52        val dataf_agg_col = t.reduce((df2, dataf) => df2.union(dataf))
53        dataf_agg_col.show()
54
55        val df3 = df2
56            .withColumn("Name",lower(col("Name")))
57            .withColumn("Nationality",lower(col("Nationality")))
58            .withColumn("Club",lower(col("Club")))
59            .withColumn("Preferred Foot",lower(col("Preferred Foot")))
60            .withColumn("Position",lower(col("Position")))
61            .dropDuplicates()
62        df3.write.format("jdbc").option("url", misqlCon)
63            .option("driver", driver).option("dbtable", "w2t1b")
64            .mode("overwrite").save()
65        df3.show()
66
67    }
68
69    val s0 = (System.currentTimeMillis() - t1)/1000
70    val s = s0 % 60
71    val m = (s0/60) % 60
72    val h = (s0/60/60) % 24
73    println("%02d:%02d:%02d".format(h, m, s))
74    System.exit(0)
75
```

```
|  8205|        Braga| 35|        Portugal| 70|  70|       CD Aves| 750|   5|  Right|  1|  3| LCM| 2017|01/01/2019|6.166666667| 165|    1600|
|  9014|    A. Robben| 34|     Netherlands| 84|  84|FC Bayern München|15500| 110|   Left|  4|  4|  RM| 2009|01/01/2019|5.916666667| 176|   25600|
| 19521|    J. Ibehre| 35|         England| 61|  61|Cambridge United| 120|   2|  Right|  1|  2|  ST| 2017|01/01/2019|6.333333333| 203|     210|
| 20209|Ricardo Costa| 37|        Portugal| 74|  74|    CD Tondela| 750|   4|  Right|  2|  2| LCB| 2017|01/01/2019|          6| 181|    1600|
| 20001|Cristiano Ronaldo| 33|    Portugal| 94|  94|      Juventus|77000| 405|  Right|  5|  5|  ST| 2018|01/01/2022|6.166666667| 183|  127100|
| 27532|  D. de Vries| 37|     Netherlands| 66|  66|        Celtic|  40|   7|  Right|  1|  1|  GK| 2016|01/01/2019|       6.25| 212|      72|
| 45083|S. von Bergen| 35|     Switzerland| 73|  73|BSC Young Boys| 950|  12|  Right|  2|  2| LCB| 2013|01/01/2022|          6| 174|    1400|
| 46175| M. Rosenberg| 35|          Sweden| 73|  73|      Malmö FF|1800|   6|  Right|  1|  3|  RS| 2014|01/01/2020|          6| 179|    2400|
| 47201|    S. Proto | 35|         Belgium| 76|  76|         Lazio|1800|  20|  Right|  2|  1|  GK| 2018|01/01/2021|          6| 163|    3100|
| 52498|  M. Lehmann | 35|         Germany| 72|  72|     1. FC Köln| 725|  10|  Right|  2|  2| CDM| 2012|01/01/2019|5.833333333| 165|    1100|
| 52679|   J. Murphy| 36|Republic of Ireland| 62|  62|         Bury|  40|   1|   Left|  1|  1|  GK| 2017|01/01/2019|6.166666667| 194|      70|
| 53110|   C. Gordon | 35|        Scotland| 74|  74|        Celtic|1300|  20|   Left|  2|  1|  GK| 2014|01/01/2020|6.333333333| 183|    2400|
| 53363|   A. Collin | 33|         England| 62|  62|Carlisle United| 150|   2|  Right|  1|  1|  GK| 2018|01/01/2019|       6.25| 172|     263|
| 53739|   L. Grant | 35|         England| 74|  74|Manchester United|1300| 39|  Right|  1|  1|  GK| 2018|01/01/2020|6.333333333| 183|    2500|
| 54008| S. Bywater | 37|         England| 63|  63|  Burton Albion|  20|   1|  Right|  1|  1|  GK| 2016|01/01/2019|6.083333333| 179|      35|
| 54037|   T. Berni | 35|           Italy| 64|  64|         Inter| 110|   5|  Right|  1|  1|  GK| 2017|01/01/2019|6.083333333| 176|     187|
|101880|   R. Green | 38|         England| 72|  72|       Chelsea| 210|  28|  Right|  2|  1|  GK| 2018|01/01/2019|6.166666667| 203|     389|
|102056|  S. Padoin | 34|           Italy| 71|  71|      Cagliari| 750|  18|  Right|  2|  3|  RB| 2016|01/01/2019|5.833333333| 161|    1100|
|108000|S. Lichtsteiner| 34|    Switzerland| 79|  79|       Arsenal|3600|  94|  Right|  3|  3|  RB| 2018|01/01/2019|          6| 168|    6800|
only showing top 20 rows

+--------------------+----------+
|           col_name|null_count|
+--------------------+----------+
|                 ID|         0|
|               Name|         0|
|                Age|         0|
|        Nationality|         0|
|            Overall|         0|
|          Potential|         0|
|               Club|         0|
|              Value|         0|
|               Wage|         0|
|     Preferred Foot|         0|
|International Rep...|         0|
|        Skill Moves|         0|
|           Position|         0|
|             Joined|         0|
|Contract Valid Until|         0|
|             Height|         0|
|             Weight|         0|
|     Release Clause|         0|
+--------------------+----------+

|    ID|          Name|Age|     Nationality|Overall|Potential|        Club|Value|Wage|Preferred Foot|International Reputation|Skill Moves|Position|Joined|Contract Valid Until|     Height|Weight|Release Clause|
|177766|      g. bong| 30|        cameroon|     74|       74|brighton & hove a...|4100|  35|          left|                      1|          3|      lb|  2015|          01/01/2019|6.166666667|   163|          7700|
|189459| jaime romero| 27|           spain|     71|       71|     córdoba cf|2500|   7|          left|                      1|          3|      rm|  2017|          01/01/2020|       5.75|   170|          3800|
|206651|roberto torres| 29|          spain|     72|       72|     ca osasuna|3000|   9|         right|                      1|          3|     cam|  2011|          01/01/2019|5.833333333|   159|          4900|
|223402|  e. taşdemir| 22|          turkey|     71|       78|     bursaspor|2800|   9|          left|                      1|          3|      lb|  2014|          01/01/2019|       5.75|   154|          6200|
|233125|   m. hartel| 22|         germany|     69|       76|1. fc union berlin|1500|  14|         right|                      1|          3|      lw|  2017|          01/01/2020|       5.75|   152|          2700|
|233164|    a. muric| 19|      montenegro|     61|       78|manchester city| 450|   3|         right|                      1|          1|      gk|  2017|          01/01/2020|        6.5|   179|          1100|
|238516| l. østigård| 18|          norway|     61|       81|brighton & hove a...| 475|   3|         right|                      1|          2|      cb|  2018|          01/01/2021|          6|   176|          1400|
|240873|      genaro| 20|           spain|     61|       71|     sevilla fc| 400|   2|         right|                      1|          2|      cm|  2017|          01/01/2021|          6|   157|           920|
|240026| n. phillips| 21|         england|     61|       74|     liverpool| 425|   9|         right|                      1|          2|      cb|  2017|          01/01/2021|6.166666667|   154|          1100|
|241651| v. gyökeres| 20|          sweden|     62|       79|brighton & hove a...| 675|   6|         right|                      1|          3|      st|  2018|          01/01/2022|6.166666667|   168|          1700|
|244582| a. paločević| 24|          serbia|     70|       75|    cd nacional|2300|   6|         right|                      1|          3|      cm|  2018|          01/01/2022|5.916666667|   146|          5100|
|171565|     linares| 35|           spain|     69|       69|cf reus deportiu| 475|   4|         right|                      1|          2|      st|  2018|          01/01/2019|5.916666667|   172|           736|
|178518|r. nainggolan| 30|         belgium|     85|       85|         inter|35500| 105|         right|                      3|          3|     cam|  2018|          01/01/2022|       5.75|   170|         60400|
|191740|ander herrera| 28|           spain|     81|       81|manchester united|17500| 140|        right|                      3|          3|      cm|  2014|          01/01/2019|          6|   154|         32400|
|197242|g. krychowiak| 28|          poland|     78|       79|lokomotiv moscow|9500|   1|         right|                      1|          3|     lcm|  2016|          01/01/2019|6.083333333|   187|         20700|
|200714|     h. hope| 24|        barbados|     60|       65|carlisle united| 280|   2|         right|                      1|          2|      ls|  2017|          01/01/2019|5.833333333|   168|           511|
|212244|     c. lenz| 23|         germany|     66|       72|1. fc union berlin| 750|   7|          left|                      1|          3|      lb|  2016|          01/01/2019|5.916666667|   174|          1400|
|214440|     d. melo| 24|           chile|     69|       76|    cd palestino|1100|   2|         right|                      1|          1|      gk|  2011|          01/01/2020|5.833333333|   168|          1700|
|227676|  m. kennedy| 21|northern ireland|     53|       63|charlton athletic| 100|   2|         right|                      1|          2|      rm|  2014|          01/01/2021|          6|   168|           195|
|230014|jorgino bauwer| 34|         brazil|     68|       68|    chapecoense| 450|   1|         right|                      1|          3|     cam|  2018|          01/01/2021|5.833333333|   152|           855|
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```