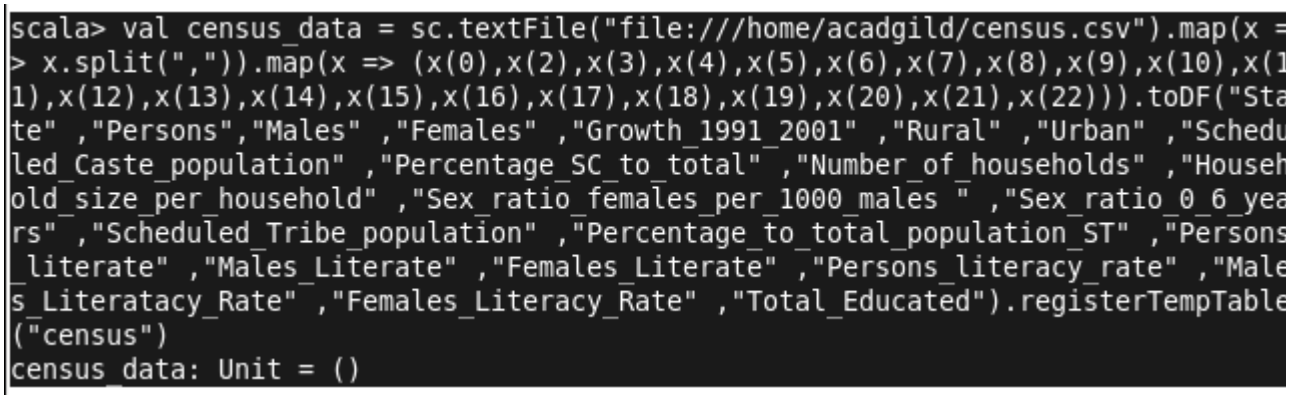
Assignment22.1

Go through below blog and reiterate the same at your end.
https://docs.google.com/document/d/1csLBlMiEXs_hXWV2Z8VpBlrj_R6RoDQLlZUnA0uBTCk/edit

```
scala> val census_data = sc.textFile("file:///home/acadgild/census.csv").map(x => x.split(",")).map(x =>
(x(0),x(2),x(3),x(4),x(5),x(6),x(7),x(8),x(9),x(10),x(11),x(12),x(13),x(14),x(15),x(16),x(17),x(18),x(19),x(20),x(21),x(22))).toDF("State" ,"Persons","Males" ,"Females" ,"Growth_1991_2001" ,"Rural" ,"Urban" ,"Scheduled_Caste_population" ,"Percentage_SC_to_total" ,"Number_of_households" ,"Household_size_per_household" ,"Sex_ratio_females_per_1000_males " ,"Sex_ratio_0_6_years" ,"Scheduled_Tribe_population" ,"Percentage_to_total_population_ST" ,"Persons_literate" ,"Males_Literate" ,"Females_Literate" ,"Persons_literacy_rate" ,"Males_Literatacy_Rate" ,"Females_Literacy_Rate" ,"Total_Educated").registerTempTable("census")
census_data: Unit = ()
```



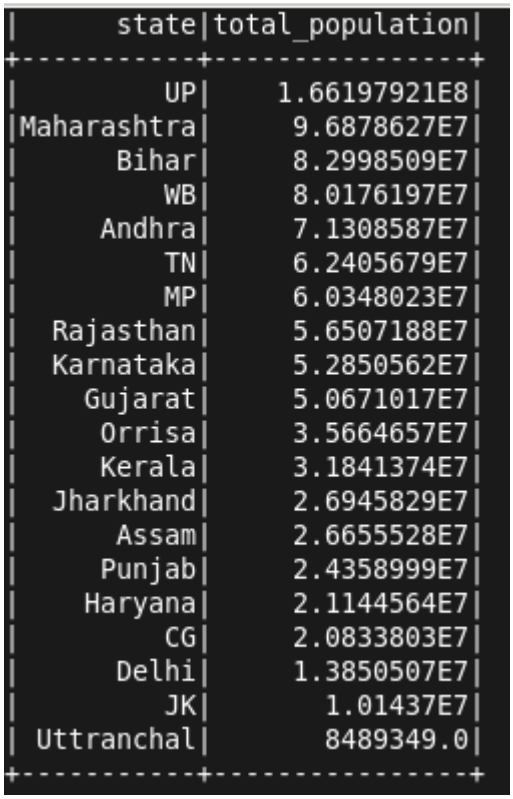
1. Find out the state wise population and order by state

```
scala> val population = sqlContext.sql("select state,sum(persons) as total_population from census group by state order by total_population desc").show
+-----------+----------------+
|      state|total_population|
+-----------+----------------+
|         UP|    1.66197921E8|
|Maharashtra|     9.6878627E7|
```

Bihar	8.2998509E7
WB	8.0176197E7
Andhra	7.1308587E7
TN	6.2405679E7
MP	6.0348023E7
Rajasthan	5.6507188E7
Karnataka	5.2850562E7
Gujarat	5.0671017E7
Orrisa	3.5664657E7
Kerala	3.1841374E7
Jharkhand	2.6945829E7
Assam	2.6655528E7
Punjab	2.4358999E7
Haryana	2.1144564E7
CG	2.0833803E7
Delhi	1.3850507E7
JK	1.01437E7
Uttranchal	8489349.0
+-----------+----------------+
only showing top 20 rows

population: Unit = ()

scala>

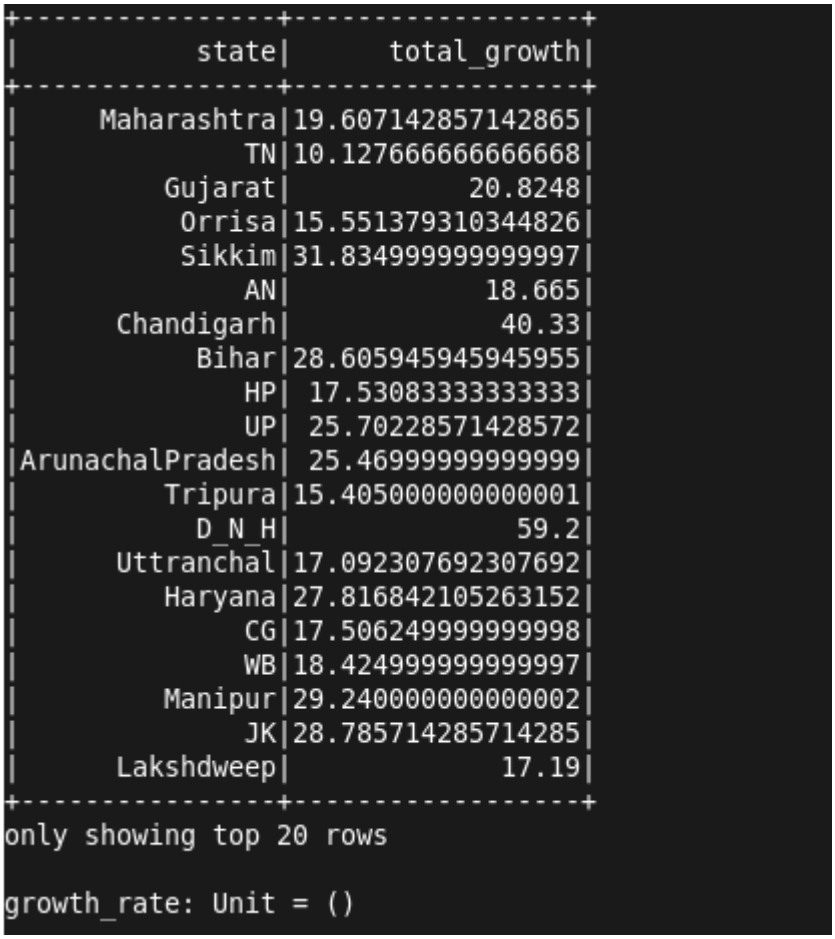


state	total_population
UP	1.66197921E8
Maharashtra	9.6878627E7
Bihar	8.2998509E7
WB	8.0176197E7
Andhra	7.1308587E7
TN	6.2405679E7
MP	6.0348023E7
Rajasthan	5.6507188E7
Karnataka	5.2850562E7
Gujarat	5.0671017E7
Orrisa	3.5664657E7
Kerala	3.1841374E7
Jharkhand	2.6945829E7
Assam	2.6655528E7
Punjab	2.4358999E7
Haryana	2.1144564E7
CG	2.0833803E7
Delhi	1.3850507E7
JK	1.01437E7
Uttranchal	8489349.0

2. Find out the Growth Rate of Each State Between 1991-2001

```
scala> val growth_rate = sqlContext.sql("select state,avg(Growth_1991_2001) as total_growth from census group by state").show
+----------------+------------------+
|           state|      total_growth|
+----------------+------------------+
|     Maharashtra|19.607142857142865|
|              TN|10.127666666666668|
|         Gujarat|           20.8248|
|          Orrisa|15.551379310344826|
|          Sikkim|31.834999999999997|
|              AN|            18.665|
|      Chandigarh|             40.33|
|           Bihar|28.605945945945955|
|              HP| 17.53083333333333|
|              UP| 25.70228571428572|
|ArunachalPradesh| 25.46999999999999|
|         Tripura|15.405000000000001|
|           D_N_H|              59.2|
|      Uttranchal|17.092307692307692|
|         Haryana|27.816842105263152|
|              CG|17.506249999999998|
|              WB|18.424999999999997|
|         Manipur|29.240000000000002|
|              JK|28.785714285714285|
|     Lakshdweep|             17.19|
+----------------+------------------+
only showing top 20 rows

growth_rate: Unit = ()
```



```
+---------------+-----------------+
|          state|      total_growth|
+---------------+-----------------+
|     Maharashtra|19.607142857142865|
|             TN|10.127666666666668|
|         Gujarat|           20.8248|
|          Orrisa|15.551379310344826|
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|      Chandigarh|             40.33|
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|ArunachalPradesh| 25.46999999999999|
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|           D_N_H|             59.2|
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|              WB|18.424999999999997|
|         Manipur|29.240000000000002|
|              JK|28.785714285714285|
|      Lakshdweep|             17.19|
+---------------+-----------------+
only showing top 20 rows

growth_rate: Unit = ()
```
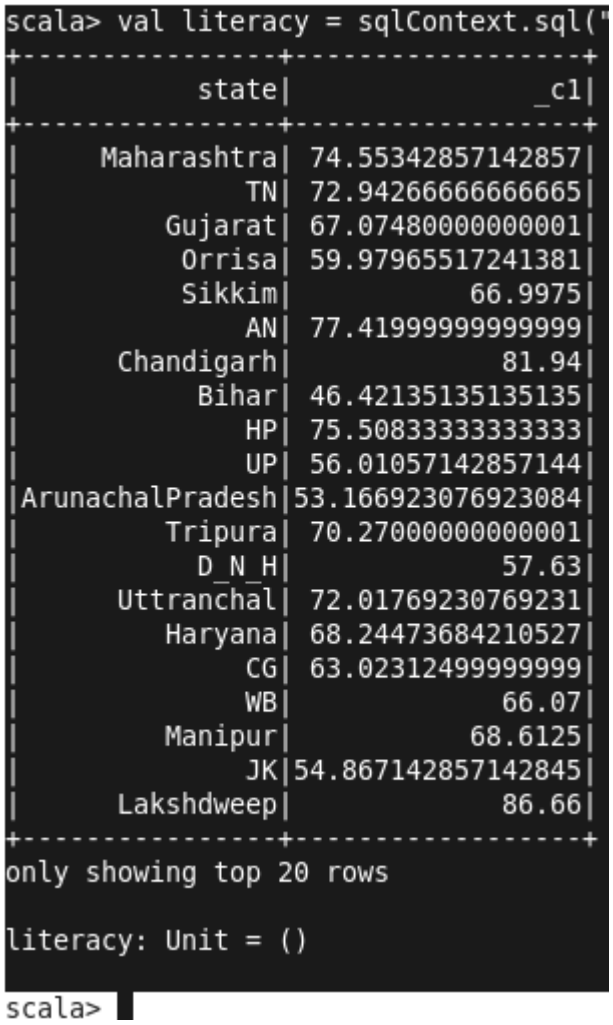

3. Find the literacy rate of each state

scala> val literacy = sqlContext.sql("select state,avg(Persons_literacy_rate) from census group by state").show

```
+---------------+-----------------+
|          state|              _c1|
+---------------+-----------------+
|     Maharashtra| 74.55342857142857|
|             TN| 72.94266666666665|
|         Gujarat| 67.07480000000001|
|          Orrisa| 59.97965517241381|
|          Sikkim|           66.9975|
|             AN| 77.41999999999999|
|      Chandigarh|            81.94|
|           Bihar| 46.42135135135135|
|              HP| 75.50833333333333|
|              UP| 56.01057142857144|
|ArunachalPradesh|53.166923076923084|
|         Tripura| 70.27000000000001|
|           D_N_H|            57.63|
|      Uttranchal| 72.01769230769231|
|         Haryana| 68.24473684210527|
```

CG	63.02312499999999
WB	66.07
Manipur	68.6125
JK	54.867142857142845
Lakshdweep	86.66
+----------+----------+
only showing top 20 rows

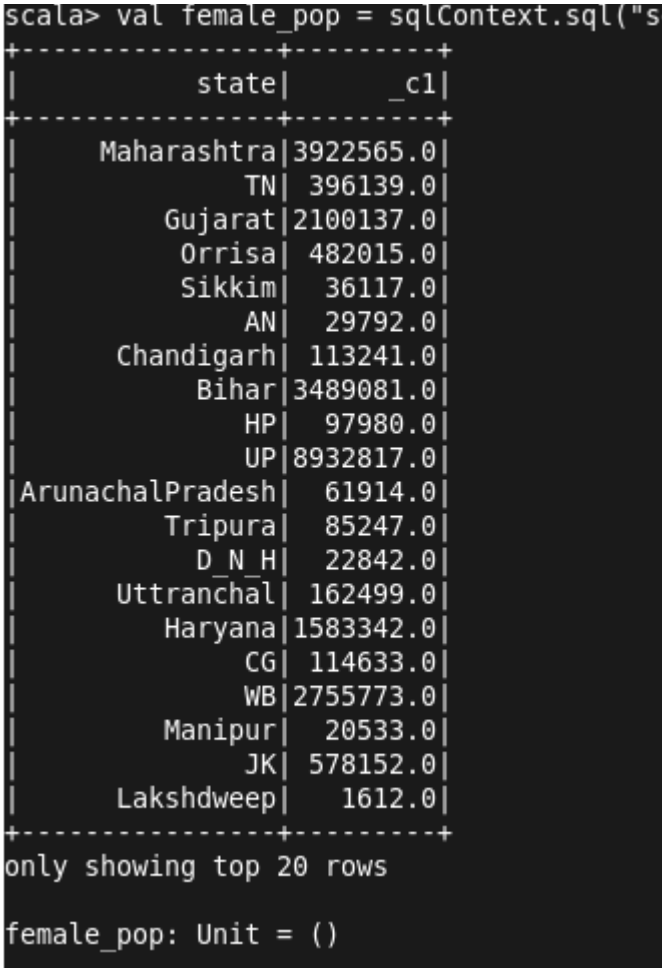
literacy: Unit = ()



4. Find out the States with More Female Population

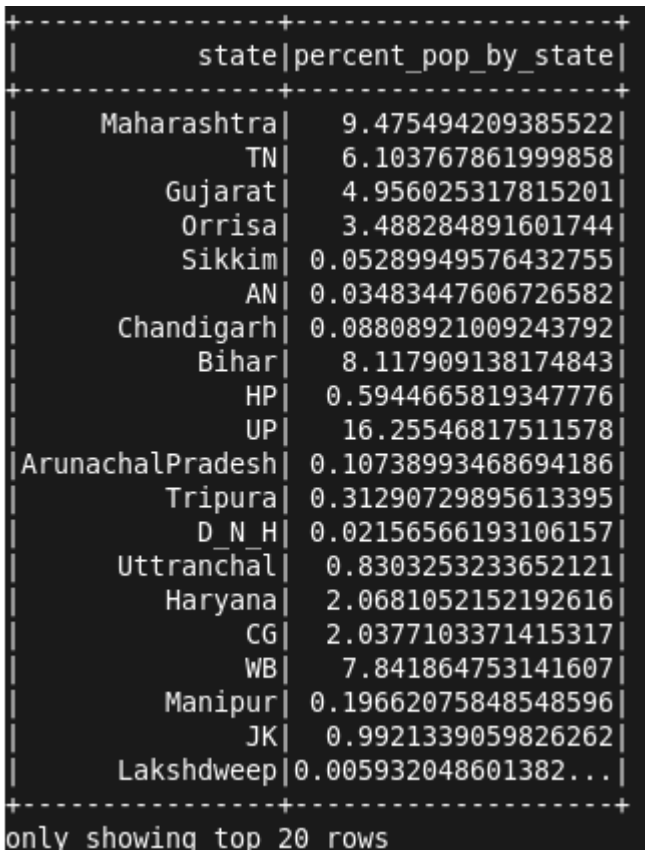
scala> val female_pop = sqlContext.sql("select state, sum(Males)-sum(Females) from census group by state").show
+----------+---------+

```
|          state|      _c1|
+---------------+---------+
|    Maharashtra|3922565.0|
|             TN| 396139.0|
|        Gujarat|2100137.0|
|         Orrisa| 482015.0|
|         Sikkim|  36117.0|
|             AN|  29792.0|
|     Chandigarh| 113241.0|
|          Bihar|3489081.0|
|             HP|  97980.0|
|             UP|8932817.0|
|ArunachalPradesh|  61914.0|
|        Tripura|  85247.0|
|          D_N_H|  22842.0|
|     Uttranchal| 162499.0|
|        Haryana|1583342.0|
|             CG| 114633.0|
|             WB|2755773.0|
|        Manipur|  20533.0|
|             JK| 578152.0|
|     Lakshdweep|   1612.0|
+---------------+---------+
only showing top 20 rows

female_pop: Unit = ()
```



5. Find out the Percentage of Population in Every State

```
scala> val percenet_pop = sqlContext.sql("select state, (sum(persons) * 100.0) / SUM(sum(persons)) over() as percent_pop_by_state from census group by state").show
17/12/03 22:53:14 WARN Window: No Partition Defined for Window operation! Moving all data to a single partition, this can cause serious performance degradation.
+---------------+-------------------+
|          state|percent_pop_by_state|
+---------------+-------------------+
|    Maharashtra|   9.475494209385522|
|             TN|   6.103767861999858|
|        Gujarat|   4.956025317815201|
|         Orrisa|   3.488284891601744|
|         Sikkim| 0.05289949576432755|
|             AN| 0.03483447606726582|
|     Chandigarh| 0.08808921009243792|
|          Bihar|   8.117909138174843|
|             HP|  0.5944665819347776|
|             UP|   16.25546817511578|
|ArunachalPradesh| 0.10738993468694186|
|        Tripura| 0.31290729895613395|
|          D_N_H| 0.02156566193106157|
|     Uttranchal|  0.8303253233652121|
|        Haryana|  2.0681052152192616|
|             CG|  2.0377103371415317|
|             WB|   7.841864753141607|
|        Manipur| 0.19662075848548596|
|             JK|  0.9921339059826262|
|     Lakshdweep|0.005932048601382...|
+---------------+-------------------+
only showing top 20 rows

percenet_pop: Unit = ()
```



```
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|             JK|  0.9921339059826262|
|     Lakshdweep|0.005932048601382...|
+---------------+--------------------+
only showing top 20 rows
```