CS 5433: Bigdata Management

Programming Assignment 3

Task 2 – Output

Group 4

Output Results for PartA:

```
prediction
                     Year
                                       features
2019.6599680249049|2019.0|[0.011,0.0,0.919,..
2019.7068695042635|2020.0|[0.011,0.0,0.965,..
2016.9526883493056|2017.0|[0.016,0.0,0.877,
2018.3079382199621|2018.0|[0.022,0.115,0.98.
 2019.124822827811 2018.0 [0.038,0.0,0.856,...
2019.5989792076111|2021.0|[0.038,0.0,0.876,..
2019.6108093721991 2019.0 [0.038,0.0,0.888,.
2016.3784155412097|2017.0|[0.049,0.038,0.60.
2020.0829923571039|2021.0|[0.049,0.038,0.65.
2019.5629441635174 2019.0 [0.054,0.231,0.94..
2016.4310669178797 2017.0 [0.06,0.269,0.602...
2019.7920963222393 2019.0 [0.06,0.269,0.659...
2019.8593262626084|2021.0|[0.06,0.269,0.688.
2016.4429517220756|2017.0|[0.076,0.346,0.69.
2018.9371283132239|2018.0|[0.076,0.346,0.70.
2020.0737156980294 2019.0 6.076,0.346,0.71...
2020.0973760272054|2020.0|[0.076,0.346,0.73..
2019.9178120161619|2020.0|[0.082,0.154,0.62.
2019.9796926800836 2019.0 [0.082,0.154,0.64
2018.5560702047862 2018.0 6.087,0.308,0.66.
2019.629987659562|2021.0|[0.087,0.308,0.71.
2018.6876945553227|2018.0|[0.092,0.038,0.76..
2019.8917530383087 2020.0 6.092,0.038,0.87.
2018.2007661604232 2018.0 [0.098,0.038,0.79]
2019.8417642613454|2020.0|[0.098,0.038,0.84
2017.3168362396666 2017.0 6.103,0.231,0.89.
2018.4456122878844 2018.0 [0.103,0.231,0.92..
2019.5758057921732 2021.0 6.103,0.231,0.93.
2019.5997619616849 2020.0 6.103,0.231,0.96.
2017.1046111707344|2017.0|[0.109,0.154,0.69.
2020.1484769391539 2020.0 [0.109,0.154,0.81
2018.9562888714165|2018.0|[0.12,0.154,0.801.
 2020.060554275545 2019.0 [0.12,0.154,0.802.
2020.060554275545 2020.0 0.12,0.154,0.802.
2019.8527542303623 2019.0 [0.125,0.077,0.64]
2017.3727435070696 2017.0 [0.13,0.462,0.633.
2019.8709857820218 2020.0 [0.13,0.462,0.814.
2019.8554403994342 2021.0 [0.141,0.769,0.69...
```

```
2019.8554403994342|2021.0|[0.141,0.769,0.69...
2020.2272015052897 2021.0 [0.147,0.385,0.76...
2020.2323532674434 2019.0 [0.147,0.385,0.77...
2020.2550027369552 2020.0 [0.147,0.385,0.79...
2020.2595439477984|2020.0|[0.152,0.654,0.80...
2018.4170124462992 2018.0 [0.158,0.0,0.604,...
2019.505160321904 2021.0 [0.158,0.0,0.647,...
2018.269757449315 2018.0 [0.163,0.538,0.66...
2019.7768929639376 2021.0 [0.163,0.538,0.69...
2019.7620095187888 2019.0 [0.163,0.538,0.7,...
2019.7994441074072 2020.0 [0.163,0.538,0.71...
2016.6032196770363 2017.0 [0.174,0.0,0.605,...
2018.3117742176364|2018.0|[0.174,0.0,0.686,..
2020.317189136891|2020.0|[0.174,0.0,0.756,...
2017.0722872382669 2017.0 [0.185,0.115,0.59...
2019.3622852796952 2019.0 [0.185,0.115,0.69...
 2017.213540225763 2017.0 [0.19,0.538,0.557...
2018.3790161631598 2018.0 [0.196,0.192,0.67...
2020.1439677161513 2019.0 [0.196,0.192,0.7,...
2017.2292828432921 2017.0 [0.201,0.346,0.68...
2020.4294441402906 2019.0 [0.212,0.385,0.95...
2020.1250785650102|2019.0|[0.217,0.615,0.63...
2018.3345775499236 2018.0 [0.217,0.615,0.67...
 2020.168626230091|2020.0|[0.223,0.615,0.73...
2017.5936011215204 2017.0 6.223,0.962,0.56...
2020.3433839851793 2019.0 [0.228,0.0,0.798,...
2020.3621150791103 2020.0 6.228,0.0,0.817,...
2019.6604684147796 | 2021.0 | [0.234,0.0,0.879,...
2019.5134412652421 2021.0 [0.239,0.231,0.66...
2019.4790953163122 2019.0 [0.239,0.231,0.72...
2018.564732255747 2018.0 [0.239,0.231,0.74...
2018.1598944647476 2018.0 [0.245,0.192,0.78...
 2020.081570131645 2021.0 [0.25,0.846,0.623...
 2018.293401163434|2018.0|[0.255,0.154,0.63...
   2020.1723372856 2021.0 [0.255,0.154,0.74...
2017.6443124210725 2017.0 6.261,0.346,0.56...
  2019.39244558066 2019.0 0.261,0.346,0.61...
2019.4230801526057 2020.0 [0.261,0.346,0.64...
2018.461470032169|2018.0|[0.266,0.038,0.67...
2020.364114842615 2020.0 0.266,0.038,0.74...
|2020.1663219595391|2019.0|[0.272,0.192,0.61...
```

```
2020.1663219595391|2019.0|[0.272,0.192,0.61...
|2020.1694718647375|2020.0|[0.283,0.077,0.88...
|2020.1694718647375|2021.0|[0.283,0.077,0.88...
|2020.0191695294468|2019.0|[0.288,0.077,0.73...
 2018.461934551142 | 2018.0 | [0.293, 0.231, 0.60...
|2019.2976536823496|2018.0|[0.299,0.115,0.82...
 2017.494406109878 2017.0 [0.304,0.423,0.59...
 2019.364453398921 2019.0 [0.304,0.423,0.60...
|2018.8826087784796|2018.0|[0.31,0.077,0.621...
 2020.039699488902|2019.0|[0.31,0.077,0.635...
|2019.0511006912238|2018.0|[0.326,0.077,0.89...
|2020.1857420330562|2019.0|[0.326,0.077,0.90...
2017.6724929418676 2017.0 [0.332,0.885,0.6,...
2018.9210934965931 2018.0 6.332,0.885,0.61...
2017.4631724863552 2017.0 6.337,0.077,0.66...
|2019.9621073481455|2021.0|[0.342,0.077,0.64...
|2019.9325871351623|2020.0|[0.342,0.077,0.65...
 2018.13612687311 2018.0 [0.348,0.038,0.66...
 2020.293281504884 2021.0 [0.348,0.038,0.70...
 2019.708864302203|2020.0|[0.353,0.0,0.812,...
 2018.805166462856 2018.0 [0.364,0.038,0.69...
2018.8284011952387 2018.0 [0.37,0.038,0.739...
|2019.9070480208886|2021.0|[0.37,0.038,0.753...
only showing top 100 rows
2022-04-30 11:40:19,029 INFO datasources.FileSourceStrategy: Pruning directories with:
2022-04-30 11:40:19,029 INFO datasources.FileSourceStrategy: Pushed Filters:
2022-04-30 11:40:19,030 INFO datasources.FileSourceStrategy: Post-Scan Filters:
2022-04-30 11:40:19,030 INFO datasources.FileSourceStrategy: Output Data Schema: struct<INSTITUT
```

Output Results for PartB:

```
predictionl
                     Yearl
                                       features
2020.1276026413568 2019.0 6.011,0.0,0.919,...
2020.203992290115 2020.0 [0.011,0.0,0.965,...
2017.2932738073287 2017.0 [0.016,0.0,0.877,...
2018.0033849272481 2018.0 6.022,0.115,0.98...
2018.058098731962 2018.0 [0.038,0.0,0.856,...
2020.0168073610869 2021.0 0.038,0.0,0.876,...
2020.0168073610869 2019.0 [0.038,0.0,0.888,...
2017.8982539682543 2017.0 0.049,0.038,0.60...
2019.9220865825464 2021.0 [0.049,0.038,0.65..
2020.0016276403887 2019.0 [0.054,0.231,0.94..
2017.2745454545457 2017.0 6.06,0.269,0.602...
2019.9931863827592 2019.0 0.06,0.269,0.659...
2019.9517907367294 2021.0 [0.06,0.269,0.688...
2017.307568216942 2017.0 [0.076,0.346,0.69..
2018.0588073629103 2018.0 6.076,0.346,0.70...
2020.0372479562998 2019.0 [0.076,0.346,0.71...
2020.1604505561693 2020.0 6.076,0.346,0.73...
2019.9414770263909 2020.0 [0.082,0.154,0.62.
2020.1900975806977 2019.0 [0.082,0.154,0.64..
2018.0588073629103 2018.0 6.087,0.308,0.66...
 2019.83805965084 2021.0 6.087,0.308,0.71...
2018.0836737924578 2018.0 [0.092,0.038,0.76...
2020.0407507845393 2020.0 [0.092,0.038,0.87.
<u>2018.0295652629436</u>|2018.0|[0.098,0.038,0.79..
  2020.14525964841 2020.0 [0.098,0.038,0.84.
2017.2922637063189|2017.0|[0.103,0.231,0.89..
2018.0478293716926 2018.0 [0.103,0.231,0.92...
2019.8766633845219 2021.0 6.103,0.231,0.93...
2019.6747709114036 2020.0 6.103,0.231,0.96...
2017.1673214285715 2017.0 [0.109,0.154,0.69.
2020.1072549556307 2020.0 6.109,0.154,0.81..
2018.0033849272481 2018.0 [0.12,0.154,0.801]
2020.1364658295647 2019.0 [0.12,0.154,0.802.
2020.1364658295647 2020.0 [0.12,0.154,0.802..
  2020.01078711536|2019.0|[0.125,0.077,0.64..
2017.7877976190478 2017.0 [0.13,0.462,0.633...
2020.085874223584 2020.0 [0.13,0.462,0.814...
2019.9542207942886 2021.0 6.141,0.769,0.69.
```

```
2017.1673214285715 2017.0 [0.109,0.154,0.69...
2020.1072549556307 2020.0 [0.109,0.154,0.81...
2018.0033849272481 2018.0 6.12,0.154,0.801...
2020.1364658295647 2019.0 [0.12,0.154,0.802...
2020.1364658295647 2020.0 [0.12,0.154,0.802...
 2020.01078711536|2019.0|[0.125,0.077,0.64...
2017.7877976190478|2017.0|[0.13,0.462,0.633...
 2020.085874223584 2020.0 [0.13,0.462,0.814...
2019.9542207942886 2021.0 [0.141,0.769,0.69...
2020.1219962881023 2021.0 [0.147,0.385,0.76...
2020.211676576293 2019.0 [0.147,0.385,0.77...
 2020.211676576293 2020.0 [0.147,0.385,0.79...
 2020.197971607088 2020.0 [0.152,0.654,0.80...
2018.0185506939615 2018.0 [0.158,0.0,0.604,...
2020.0376238975143 2021.0 [0.158,0.0,0.647,...
2018.0470190948338 2018.0 [0.163,0.538,0.66...
2019.9190856591533 2021.0 [0.163,0.538,0.69...
2019.7713170737345 2019.0 [0.163,0.538,0.7,...
2019.9190856591533 2020.0 [0.163,0.538,0.71...
2017.419444444445 | 2017.0 | [0.174,0.0,0.605,...
2017.9643142180114 | 2018.0 | [0.174,0.0,0.686,...
2020.0929569163145|2020.0|[0.174,0.0,0.756,...
2017.2045454545455|2017.0|[0.185,0.115,0.59..
|2019.7157960279085|2019.0|[0.185,0.115,0.69...
             2017.2 2017.0 [0.19,0.538,0.557...
2017.9696482377217 2018.0 [0.196,0.192,0.67...
 2019.843842086851 2019.0 [0.196,0.192,0.7,...
 2017.161929271709|2017.0|[0.201,0.346,0.68...
2020.2321952551451 2019.0 [0.212,0.385,0.95...
2019.8916510080915 2019.0 [0.217,0.615,0.63...
 2018.052353114544|2018.0|[0.217,0.615,0.67...
2020.1874763067717 2020.0 [0.223,0.615,0.73...
             2017.0 2017.0 [0.223,0.962,0.56...
2020.3563330946695 2019.0 6.228,0.0,0.798,...
2020.3190315073675 2020.0 6.228,0.0,0.817,...
2020.0008642763937 2021.0 [0.234,0.0,0.879,...
2019.8685422274543 2021.0 [0.239,0.231,0.66...
2019.8833366002764 2019.0 [0.239,0.231,0.72...
2018.1512283030813 2018.0 [0.239,0.231,0.74...
|2018.1310060808592|2018.0|[0.245,0.192,0.78...
|2019.8755607421867|2021.0|[0.25.0.846.0.623...
```

```
2019.8755607421867|2021.0|[0.25,0.846,0.623..
2018.0665943447552 2018.0 [0.255,0.154,0.63...
2020.0840683497997 2021.0 6.255,0.154,0.74..
            2017.0 2017.0 6.261,0.346,0.56..
2019.9199084914314 2019.0 [0.261,0.346,0.61.
2019.9505840595314|2020.0|[0.261,0.346,0.64..
2017.9962037932776 2018.0 [0.266,0.038,0.67.
2020.0358721016037 2020.0 [0.266,0.038,0.74.]
2019.9213271513302 2019.0 [0.272,0.192,0.61.
2019.6383194659952 2020.0 [0.283,0.077,0.88.]
2019.6383194659952 2021.0 6.283,0.077,0.88.
 2020.045367149362|2019.0|[0.288,0.077,0.73..
2018.1692729161837 2018.0 6.293,0.231,0.60.
2018.1310060808592|2018.0|[0.299,0.115,0.82..
2017.2045454545455 2017.0 0.304,0.423,0.59.
2019.3221831129704 2019.0 [0.304,0.423,0.60.
2018.0707610114216 2018.0 [0.31,0.077,0.621.
2020.0075323502983 2019.0 [0.31,0.077,0.635.
2018.111860072792 2018.0 6.326,0.077,0.89..
2020.0978580072583 2019.0 [0.326,0.077,0.90..
 2017.309902597403 | 2017.0 | [0.332,0.885,0.6,...
2018.3367291847578|2018.0|[0.332,0.885,0.61..
2017.1355436507936 2017.0 [0.337,0.077,0.66..
2020.0022112317843 2021.0 6.342,0.077,0.64...
2019.7284385416824 2020.0 [0.342,0.077,0.65...
2017.9962037932776 2018.0 6.348,0.038,0.66...
2019.775411008557 2021.0 [0.348,0.038,0.70...
2020.0694607901191|2020.0|[0.353,0.0,0.812,...
2018.0449783030813 2018.0 [0.364,0.038,0.69...
2018.108230884678 2018.0 [0.37,0.038,0.739..
 2019.915939148387 2021.0 6.37,0.038,0.753...
2017.9036517040622 2018.0 6.375,0.231,0.59...
2020.1018348736573 2021.0 6.375,0.231,0.62...
2020.006807100513|2021.0|[0.38,0.115,0.792...
2017.147876984127 2017.0 [0.386,0.577,0.66...
|2018.3899736235223|2018.0|[0.391,0.346,0.60..
2019.789052984713 2021.0 6.391,0.346,0.61...
2020.0547411455732 2019.0 [0.413,0.385,0.62.
            2017.0 2017.0 6.424,0.0,0.572,...
2018.279461061702 2020.0 0.435,0.192,0.65...
2018.4938808800584 2019.0 0.446,0.0,0.639,
```

```
2018.4938808800584|2019.0|[0.446,0.0,0.639,...
2017.1938769841267 2017.0 [0.446,0.0,0.663,...
2019.7261489290136 2021.0 [0.457,0.077,0.65...
2018.4422770496355 2019.0 [0.467,0.423,0.66...
2020.1000129074425 2020.0 0.478,0.038,0.70...
2018.3396433159276 2018.0 6.484,0.731,0.63...
  2018.27850346473 2018.0 6.489,0.808,0.72...
2020.2948935542179|2020.0|[0.505,0.423,0.63...
2020.2079879963853 | 2020.0 | [0.516,0.0,0.665,...
2018.0795890081376 2018.0 6.522,0.0,0.604,...
2020.2423193429502 2020.0 6.527,0.192,0.75...
2020.2639161351126 2020.0 6.538,0.308,0.65...
2019.7074502015607 2021.0 [0.543,0.0,0.676,...
2020.0334280517932 2019.0 [0.549,0.0,0.607,...
             2017.0|2017.0|[0.56,0.077,0.0,0...
2018.4343602919512|2019.0|[0.576,0.308,0.69...
2018.1198456770865 | 2018.0 | [0.576,0.308,0.71...
2018.3789785657013 | 2019.0 | [0.582,0.923,0.60...
2020.3882325469772 2019.0 [0.592,0.0,0.737,...
2018.8582749749694 2019.0 [0.598,0.192,0.62...
 2018.851722549883 2019.0 0.609,0.077,0.61...
2017.7536309523814 2017.0 [0.63,0.115,0.613...
2018.7225485759457 2021.0 [0.674,0.115,0.66...
2017.9563095238095|2017.0|[0.701,0.731,0.61...
           2017.05|2017.0|[0.707,0.192,0.55...
           2017.05 | 2017.0 | [0.712, 0.692, 0.58...
2017.7052857142858 2017.0 6.717,0.308,0.62...
2017.1386389452334 2017.0 6.723,0.154,0.79...
2019.9053667440135 2021.0 [0.755,0.077,0.60...
2017.1764575163402|2017.0|[0.766,0.192,0.64...
             2017.0|2017.0|[0.777,0.0,0.577,...
             2017.0 2017.0 [0.804, 0.269, 0.57...
<u>2019.0748700045174</u>|2019.0|[0.81,0.077,0.614...
             2017.0 2017.0 6.821,0.077,0.55...
2018.3449913331272 2018.0 6.826,1.0,0.597,...
 2018.792587206855 2021.0 0.848,0.577,0.64...
2019.7208886491487 2021.0 6.886,0.0,0.778,...
2017.1588611674556 2017.0 [0.891,0.0,0.679,...
             2017.0 2017.0 6.908,0.192,0.56...
2019.9894303612189 2020.0 6.913,0.0,0.798,...
            2017.2 2017.0 [0.967,0.115,0.55...
```

```
| 2017.2|2017.0|[0.967,0.115,0.55...|
| 2017.75|2017.0|[0.978,0.0,0.582,...|
| 2017.8|2017.0|[0.984,0.231,0.55...|
| 2017.8|2017.0|[0.984,0.231,0.55...|
| 2017.8|2017.0|[0.984,0.231,0.55...|
| 2022-04-30 11:39:11,958 INFO datasources.FileSourceStrategy: Pruning directories with:
2022-04-30 11:39:11,960 INFO datasources.FileSourceStrategy: Pushed Filters:
2022-04-30 11:39:11,960 INFO datasources.FileSourceStrategy: Post-Scan Filters:
2022-04-30 11:39:11,960 INFO datasources.FileSourceStrategy: Output Data Schema: struct
. 1 more field>
2022-04-30 11:39:12,024 INFO output.FileOutputCommitter: File Output Committer Algorith
2022-04-30 11:39:12,024 INFO output.FileOutputCommitter: FileOutputCommitter skip clear
```