```
1          OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
68
69         *///*PROJECT 5*///*;
70         libname Week5 '/home/u63559709/sasuser.v94/Week 5';
NOTE: Libref WEEK5 was successfully assigned as follows:
      Engine:        V9
      Physical Name: /home/u63559709/sasuser.v94/Week 5
71
72         /*PROBLEM 1*/;
73         *PART 1*;
74         PROC SQL;
75             TITLE "Population and Countries by Continent";
76             SELECT Continent, count(Name) AS NumberOfCountries, sum(Population) AS TotalPopulation
77             FROM Week5.countries
78             GROUP BY Continent;
NOTE: Data file WEEK5.COUNTRIES.DATA is in a format that is native to another host, or the file encoding does not match the session
      encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
79         QUIT;
NOTE: PROCEDURE SQL used (Total process time):
      real time             0.01 seconds
      user cpu time         0.02 seconds
      system cpu time       0.00 seconds
      memory                5747.56k
      OS Memory             26532.00k
      Timestamp             10/02/2023 12:48:34 AM
      Step Count                        46  Switch Count  1
      Page Faults                       0
      Page Reclaims                     267
      Page Swaps                        0
      Voluntary Context Switches        15
      Involuntary Context Switches      0
      Block Input Operations            160
      Block Output Operations           16


80
81         *Part 2*;
82         PROC SQL;
83             TITLE "Continents with over 40 Countries";
84             SELECT Continent, count(Name) AS NumberOfCountries
85             FROM Week5.countries
86             GROUP BY Continent
87             HAVING count(Name) > 40;
NOTE: Data file WEEK5.COUNTRIES.DATA is in a format that is native to another host, or the file encoding does not match the session
      encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
88         QUIT;
NOTE: PROCEDURE SQL used (Total process time):
      real time             0.01 seconds
      user cpu time         0.01 seconds
      system cpu time       0.00 seconds
      memory                5747.03k
      OS Memory             26788.00k
      Timestamp             10/02/2023 12:48:35 AM
      Step Count                        47  Switch Count  1
      Page Faults                       0
      Page Reclaims                     117
      Page Swaps                        0
      Voluntary Context Switches        9
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           8


89
90         PROC SQL;
91             TITLE "Population and Countries by Continent";
92             SELECT Continent, count(Name) AS NumberOfCountries, sum(Population) AS TotalPopulation
93             FROM Week5.countries
94             GROUP BY Continent
95             HAVING count(Name) > 40;
NOTE: Data file WEEK5.COUNTRIES.DATA is in a format that is native to another host, or the file encoding does not match the session
      encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
96         QUIT;
NOTE: PROCEDURE SQL used (Total process time):
      real time             0.00 seconds
      user cpu time         0.01 seconds
      system cpu time       0.00 seconds
      memory                5747.53k
      OS Memory             27044.00k
```

```
          Timestamp              10/02/2023 12:48:35 AM
          Step Count                      48  Switch Count  1
          Page Faults                     0
          Page Reclaims                   92
          Page Swaps                      0
          Voluntary Context Switches      11
          Involuntary Context Switches    0
          Block Input Operations          0
          Block Output Operations         8


97
98        /*PROBLEM 2*/;
99        PROC SQL;
100           TITLE "US States with State Code, Capital, Latitude, and Longitude";
101           SELECT u.Name AS State, p.Code AS State_code, u.Capital, c.Latitude, c.Longitude
102           FROM Week5.unitedstates AS u
103           LEFT JOIN Week5.postalcodes AS p ON u.Name = p.Name
104           LEFT JOIN Week5.uscitycoords AS c ON u.Capital = c.City;
NOTE: Data file WEEK5.UNITEDSTATES.DATA is in a format that is native to another host, or the file encoding does not match the
      session encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
NOTE: Data file WEEK5.POSTALCODES.DATA is in a format that is native to another host, or the file encoding does not match the
      session encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
NOTE: Data file WEEK5.USCITYCOORDS.DATA is in a format that is native to another host, or the file encoding does not match the
      session encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
105           QUIT;
NOTE: PROCEDURE SQL used (Total process time):
          real time              0.05 seconds
          user cpu time          0.04 seconds
          system cpu time        0.00 seconds
          memory                 7084.04k
          OS Memory              28336.00k
          Timestamp              10/02/2023 12:48:35 AM
          Step Count                      49  Switch Count  1
          Page Faults                     0
          Page Reclaims                   905
          Page Swaps                      0
          Voluntary Context Switches      55
          Involuntary Context Switches    0
          Block Input Operations          480
          Block Output Operations         40


106
107       /*PROBLEM 3*/
108       PROC SQL;
109           TITLE "US States with Population greater than Greece";
110           SELECT Name AS State, Population format=comma18.
111           FROM Week5.unitedstates
112           WHERE Population > (SELECT Population FROM Week5.countries WHERE Name = 'Greece');
NOTE: Data file WEEK5.UNITEDSTATES.DATA is in a format that is native to another host, or the file encoding does not match the
      session encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
NOTE: Data file WEEK5.COUNTRIES.DATA is in a format that is native to another host, or the file encoding does not match the session
      encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
113           QUIT;
NOTE: PROCEDURE SQL used (Total process time):
          real time              0.01 seconds
          user cpu time          0.01 seconds
          system cpu time        0.00 seconds
          memory                 6078.03k
          OS Memory              29860.00k
          Timestamp              10/02/2023 12:48:35 AM
          Step Count                      50  Switch Count  1
          Page Faults                     0
          Page Reclaims                   95
          Page Swaps                      0
          Voluntary Context Switches      11
          Involuntary Context Switches    0
          Block Input Operations          0
          Block Output Operations         0


114
115       /*PROBLEM 4*/
116       PROC SQL;
117           TITLE "Continent and Total Area";
118           SELECT Continent, SUM(Area) AS TotalArea
119           FROM Week5.countries
120           WHERE Continent IS NOT MISSING
```

```
121           GROUP BY Continent;
NOTE: Data file WEEK5.COUNTRIES.DATA is in a format that is native to another host, or the file encoding does not match the session
      encoding. Cross Environment Data Access will be used, which might require additional CPU resources and might reduce
      performance.
122           QUIT;
NOTE: PROCEDURE SQL used (Total process time):
      real time               0.01 seconds
      user cpu time           0.01 seconds
      system cpu time         0.01 seconds
      memory                  5749.31k
      OS Memory               29860.00k
      Timestamp               10/02/2023 12:48:35 AM
      Step Count                        51  Switch Count  1
      Page Faults                       0
      Page Reclaims                     87
      Page Swaps                        0
      Voluntary Context Switches        9
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           32


123
124
125           /*PROBLEM 5*/;
126           data FLDFarmers;
127               input FLD_ID Farmer $;
128               datalines;

NOTE: The data set WORK.FLDFARMERS has 7 observations and 2 variables.
NOTE: DATA statement used (Total process time):
      real time               0.00 seconds
      user cpu time           0.00 seconds
      system cpu time         0.00 seconds
      memory                  672.03k
      OS Memory               24996.00k
      Timestamp               10/02/2023 12:48:35 AM
      Step Count                        52  Switch Count  2
      Page Faults                       0
      Page Reclaims                     95
      Page Swaps                        0
      Voluntary Context Switches        16
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


136           ;
137           run;

138
139           data FLDCrops;
140               input FLD_ID Crop $;
141               datalines;

NOTE: The data set WORK.FLDCROPS has 9 observations and 2 variables.
NOTE: DATA statement used (Total process time):
      real time               0.00 seconds
      user cpu time           0.01 seconds
      system cpu time         0.00 seconds
      memory                  672.37k
      OS Memory               24996.00k
      Timestamp               10/02/2023 12:48:35 AM
      Step Count                        53  Switch Count  2
      Page Faults                       0
      Page Reclaims                     94
      Page Swaps                        0
      Voluntary Context Switches        16
      Involuntary Context Switches      0
      Block Input Operations            0
      Block Output Operations           264


151           ;
152           run;

153
154           proc sort data=FLDFarmers;
155               by FLD_ID;
156           run;

NOTE: There were 7 observations read from the data set WORK.FLDFARMERS.
NOTE: The data set WORK.FLDFARMERS has 7 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
      real time               0.00 seconds
      user cpu time           0.00 seconds
```

```
        system cpu time       0.00 seconds
        memory                950.12k
        OS Memory             25256.00k
        Timestamp             10/02/2023 12:48:35 AM
        Step Count                        54  Switch Count  2
        Page Faults                        0
        Page Reclaims                    115
        Page Swaps                         0
        Voluntary Context Switches        13
        Involuntary Context Switches       0
        Block Input Operations             0
        Block Output Operations          264


157
158        proc sort data=FLDCrops;
159            by FLD_ID;
160        run;

NOTE: There were 9 observations read from the data set WORK.FLDCROPS.
NOTE: The data set WORK.FLDCROPS has 9 observations and 2 variables.
NOTE: PROCEDURE SORT used (Total process time):
        real time             0.00 seconds
        user cpu time         0.00 seconds
        system cpu time       0.00 seconds
        memory                949.09k
        OS Memory             25256.00k
        Timestamp             10/02/2023 12:48:35 AM
        Step Count                        55  Switch Count  2
        Page Faults                        0
        Page Reclaims                    117
        Page Swaps                         0
        Voluntary Context Switches        11
        Involuntary Context Switches       0
        Block Input Operations             0
        Block Output Operations          272


161
162        data FLDCombined;
163            merge FLDFarmers(in=a) FLDCrops(in=b);
164            by FLD_ID;
165            if a and b;
166        run;

NOTE: MERGE statement has more than one data set with repeats of BY values.
NOTE: There were 7 observations read from the data set WORK.FLDFARMERS.
NOTE: There were 9 observations read from the data set WORK.FLDCROPS.
NOTE: The data set WORK.FLDCOMBINED has 6 observations and 3 variables.
NOTE: DATA statement used (Total process time):
        real time             0.00 seconds
        user cpu time         0.00 seconds
        system cpu time       0.00 seconds
        memory                1383.81k
        OS Memory             25516.00k
        Timestamp             10/02/2023 12:48:35 AM
        Step Count                        56  Switch Count  2
        Page Faults                        0
        Page Reclaims                    176
        Page Swaps                         0
        Voluntary Context Switches        14
        Involuntary Context Switches       1
        Block Input Operations             0
        Block Output Operations          264


167
168        PROC SQL;
169        TITLE "Combined Table";
170            SELECT f.FLD_ID, f.Farmer, c.Crop
171            FROM FLDFarmers AS f
172            INNER JOIN FLDCrops AS c ON f.FLD_ID = c.FLD_ID;
173        QUIT;
NOTE: PROCEDURE SQL used (Total process time):
        real time             0.01 seconds
        user cpu time         0.01 seconds
        system cpu time       0.00 seconds
        memory                5873.25k
        OS Memory             30380.00k
        Timestamp             10/02/2023 12:48:35 AM
        Step Count                        57  Switch Count  1
        Page Faults                        0
        Page Reclaims                    109
        Page Swaps                         0
```

```
        Voluntary Context Switches       6
        Involuntary Context Switches     0
        Block Input Operations           0
        Block Output Operations          0


174
175        OPTIONS NONOTES NOSTIMER NOSOURCE NOSYNTAXCHECK;
185
```