



## Exercices


# Exercice 1

- **Objectif thématique** : Réaliser une carte de la population des villes de plus d'un million d'habitants dans le Monde.

## **Objectifs techniques** :

- Identifier des sources de données (points)
- Préparer / sélectionner un jeu de données
- Importer un fichier contenant des coordonnées géographiques (XY) et des données attributaires associées
- Premiers pas dans Magrit

# Exercice 1


- 
- [1] Identifier une source de données pertinentes
  - [2] Télécharger les données
  - [3] Se familiariser avec les données et créer un nouvel onglet avec seulement les données utiles
  - [4] Importer les données dans Magrit
  - [5] Rajouter une couche d'habillage
  - [6] Choisir la représentation
  - [7] Améliorer la lisibilité
  - [8] Mettre en page


# Exercice 1


## [1] Identifier une source de données pertinente

[Tous](#) [Actualités](#) [Images](#) [Vidéos](#) [Maps](#) [Plus](#) [Paramètres](#) [Outils](#)

Environ 67 000 résultats (0,48 secondes)

**[PDF] The World's Cities in 2016: Data Booklet - UN.org**   
[www.un.org/.../population/.../the\\_worlds\\_cities\\_in\\_2016\\_data\\_bo...](http://www.un.org/.../population/.../the_worlds_cities_in_2016_data_bo...) ▼ [Traduire cette page](#)  
This data booklet highlights current and future trajectories of populations in cities around the globe, drawing on population estimates and projections published in World Urbanization Prospects: The 2014 Revision. All information is available at [www.unpopulation.org](http://www.unpopulation.org). Suggested citation: United Nations, Department.

**UNdata | record view | City population by sex, city and city type**   
[data.un.org/Data.aspx?d=POP&f=tableCode%3A240](http://data.un.org/Data.aspx?d=POP&f=tableCode%3A240) ▼ [Traduire cette page](#)  
Data have been collected since 1948 through a set of questionnaires dispatched annually to over 230 national statistical offices and have been published in the Demographic Yearbook collection. The Demographic Yearbook disseminates statistics on population size and composition, births, deaths, marriage and divorce, ...  
Vous avez consulté cette page le 01/05/18.

**World Urbanization Prospects - Population Division - United Nations**   
<https://esa.un.org/unpd/wup/> ▼ [Traduire cette page](#)  
This web site presents the main findings of the 2014 Revision of World Urbanization Prospects which are consistent with the size of the total population of each ... the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

**Recherches associées**

|  |  |
|--|--|
| <a href="#">world urbanization trends 2014 key facts</a> | <a href="#">un habitat</a>                       |
| <a href="#">urban population growth</a>                  | <a href="#">population urbaine mondiale</a>      |
| <a href="#">https esa un org unpd wpp dataquery</a>      | <a href="#">plus grandes villes du monde onu</a> |

# Exercice 1

## [1] Identifier une source de données pertinente

Welcome to the United Nations. It's your world. Search UN Website Go

Development • Department of Economic and Social Affairs

**United Nations • Department of Economic and Social Affairs**  
**Population Division**  
*World Urbanization Prospects, the 2014 revision*

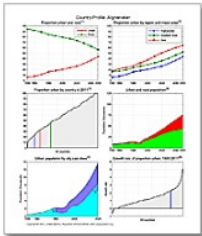
Monitoring Global population Trends

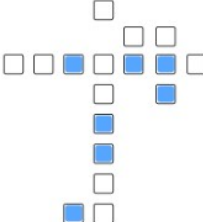
Search Population Go


WUP Home Questions and Answers Data Reports/Documents World Population Prospects Population Division


The Population Division of the Department of Economic and Social Affairs of the United Nations has been issuing, since 1988, every two years revised estimates and projections of the urban and rural populations of all countries in the world and of their major urban agglomerations. This web site presents the main findings of the **2014 Revision of World Urbanization Prospects** which are consistent with the size of the total population of each country as estimated or projected in the *2012 Revision of World Population Prospects* (United Nations, 2013). The *World Urbanization Prospects* are used widely throughout the United Nations and by many international organizations, research centers, academic researchers and the media.


**Quick Navigation**


  
Country Profiles

  
Interactive Data

  
Data in Excel Files

  
World Urbanization Prospects [Highlights]  
Highlights PDF

  
Maps

  
World Urbanization Prospects  
Final Report PDF



# Exercice 1

## [2] Télécharger les données

UN Welcome to the United Nations. It's your world. Search UN Website Go

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United Nations • Department of Economic and Social Affairs  
**Population Division**  
*World Urbanization Prospects, the 2014 revision*

Monitoring Global population Trends

Search Population Go


WUP Home Questions and Answers Data ▼ Reports/Documents ▼ World Population Prospects Population Division

Urban and Rural Populations **Urban Agglomerations** Supporting Files

| Data File  | Description  |
|--|--|
| WUP2014-F11a-30_Largest_Cities.xls                 | File 11a: The 30 Largest Urban Agglomerations Ranked by Population Size at Each Point in Time, 1950-2030   |
| WUP2014-F11b-30_Largest_Cities_in_2014_by_time.xls | File 11b: Time Series of the Population of the 30 Largest Urban Agglomerations in 2014 Ranked by Population Size, 1950-2030                                  |
| WUP2014-F12-Cities_Over_300K.xls                   | File 12: Population of Urban Agglomerations with 300,000 Inhabitants or More in 2014, by Country, 1950-2030 (thousands)                                      |
| WUP2014-F13-Capital_Cities.xls                     | File 13: Population of Capital Cities in 2014 (thousands)  |
| WUP2014-F14-Growth_Rate_Cities.xls                 | File 14: Average Annual Rate of Change of Urban Agglomerations with 300,000 Inhabitants or More in 2014, by Country, 1950-2030 (per cent)                    |
| WUP2014-F15-Percentage_Urban_in_Cities.xls         | File 15: Percentage of the Urban Population Residing in Each Urban Agglomeration with 300,000 Inhabitants or More in 2014, by Country, 1950-2030             |
| WUP2014-F16-Percentage_Total_in_Cities.xls         | File 16: Percentage of the Total Population Residing in Each Urban Agglomeration with 300,000 Inhabitants or More in 2014, by Country, 1950-2030             |
| WUP2014-F17a-City_Size_Class.xls                   | File 17a: Urban Population, Number of Cities and Percentage of Urban Population by Size Class of Urban Settlement, Major Area, Region and Country, 1950-2030 |
| WUP2014-F17b-City_Size_Class-Number.xls            | File 17b: Number of Cities Classified by Size Class of Urban Settlement, Major Area, Region and Country, 1950-2030   |
| WUP2014-F17c-City_Size_Class-Percentage.xls        | File 17c: Percentage of Urban Population in Cities Classified by Size Class of Urban Settlement, Major Area, Region and Country, 1950-2030                   |
| WUP2014-F17d-City_Size_Class-Population.xls        | File 17d: Population in Cities Classified by Size Class of Urban Settlement, Major Area, Region and Country, 1950-2030 (thousands)                           |
| WUP2014-F22-Cities_Over_300K_Annual.xls            | File 22: Annual Population of Urban Agglomerations with 300,000 Inhabitants or More in 2014, by Country, 1950-2030 (thousands)                               |

# Exercice 1

## [3] Se familiariser avec le jeu de données et préparer son intégration dans Magrit

  
**United Nations**  
 Population Division  
 Department of Economic and Social Affairs

**World Urbanization Prospects: The 2014 Revision**  
**File 12: Population of Urban Agglomerations with 300,000 Inhabitants or More in 2014, by Country, 1950-2030 (thousands)**

POP/DB/WUP/Rev.2014/1/F12  
 June 2014 - Copyright © 2014 by United Nations. All rights reserved  
 Suggested citation: United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, CD-ROM Edition.

| Index | Country Code | Country or area | City Code | Urban Agglomeration  | Note | Latitude | Longitude | Population of Urban Agglomerations with 300,000 Inhabitants or More in 2014, 1950-2030 (thousand) |       |       |       |       |       |       |       |
|-------|--------------|-----------------|-----------|----------------------|------|----------|-----------|---|-------|-------|-------|-------|-------|-------|-------|
|       |              |                 |           |                      |      |          |           | 1950  | 1955  | 1960  | 1965  | 1970  | 1975  | 1980  | 1985  |
| 1     | 4            | Afghanistan     | 20001     | Herat                |      | 34,35    | 62,2      | 82  | 86    | 89    | 93    | 102   | 120   | 144   | 162   |
| 2     | 4            | Afghanistan     | 20002     | Kabul                |      | 34,53    | 69,1      | 134   | 284   | 285   | 288   | 438   | 634   | 838   | 1 046 |
| 3     | 4            | Afghanistan     | 20003     | Kandahar             |      | 31,61    | 65,2      | 82  | 90    | 98    | 107   | 127   | 154   | 183   | 207   |
| 4     | 8            | Albania         | 20005     | Tiranë (Tirana)      |      | 41,33    | 19,8      | 85  | 107   | 135   | 145   | 157   | 174   | 194   | 218   |
| 5     | 12           | Algeria         | 20009     | Annaba               |      | 36,90    | 7,7       | 100   | 116   | 136   | 159   | 192   | 234   | 267   | 295   |
| 6     | 12           | Algeria         | 20011     | Batna                |      | 35,56    | 6,1       | 13  | 21    | 33    | 52    | 71    | 94    | 124   | 165   |
| 7     | 12           | Algeria         | 20015     | Blida                |      | 36,48    | 2,8       | 34  | 46    | 62    | 84    | 104   | 128   | 147   | 164   |
| 8     | 12           | Algeria         | 20006     | El Djazair (Algiers) | 1    | 36,75    | 3,0       | 516   | 623   | 872   | 1 081 | 1 281 | 1 507 | 1 621 | 1 672 |
| 9     | 12           | Algeria         | 20020     | El Djelfa            |      | 34,67    | 3,2       | 10  | 14    | 18    | 25    | 33    | 43    | 57    | 76    |
| 10    | 12           | Algeria         | 20019     | Dacentina            |      | 36,35    | 6,6       | 88  | 122   | 169   | 234   | 281   | 328   | 376   | 425   |
| 11    | 12           | Algeria         | 20035     | Wahran (Oran)        |      | 35,69    | -0,6      | 269   | 288   | 305   | 325   | 385   | 466   | 537   | 604   |
| 12    | 24           | Angola          | 20050     | Huambo               |      | -12,78   | 15,2      | 15  | 24    | 37    | 48    | 61    | 95    | 153   | 232   |
| 13    | 24           | Angola          | 20049     | Luanda               |      | -8,84    | 13,2      | 138   | 174   | 219   | 315   | 459   | 599   | 771   | 1 018 |
| 14    | 24           | Angola          | 204044    | Lubango              |      | -14,92   | 13,4      | 7   | 10    | 14    | 21    | 31    | 41    | 54    | 71    |
| 15    | 32           | Argentina       | 20057     | Bahia Blanca         |      | -38,72   | -62,2     | 116   | 121   | 126   | 151   | 181   | 201   | 222   | 237   |
| 16    | 32           | Argentina       | 20058     | Buenos Aires         | 2    | -34,61   | -58,4     | 5 098   | 5 799 | 6 598 | 7 317 | 8 105 | 8 745 | 9 422 | 9 959 |
| 17    | 32           | Argentina       | 20059     | Córdoba              | 3    | -31,41   | -64,1     | 429   | 510   | 605   | 701   | 810   | 905   | 1 010 | 1 102 |
| 18    | 32           | Argentina       | 20063     | Corrientes           | 4    | -27,48   | -58,8     | 64  | 79    | 97    | 115   | 136   | 156   | 179   | 212   |

Code des unités (unique) > Jointures avec d'autres tables (éventuellement)

Nom des unités > Labels sur la carte

Latitude / Longitude > positionner correctement ces objets sur la carte

Population totale > Le phénomène à représenter

# Exercice 1

## [3] Se familiariser avec le jeu de données et préparer son intégration dans Magrit



United Nations  
Population Division  
Department of Economic and Social Affairs

World Urbanization Prospects: The 2014 Revision

File 12: Population of Urban Agglomerations with 300,000 Inhabitants or More in 2014, by Country, 1950-2030 (thousands)

POP/DB/WUP/Rev.2014/1/F12

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Suggested citation: United Nations, Department of Economic and Social Affairs, Population Division (2014). World Urbanization Prospects: The 2014 Revision, CD-ROM Edition.

| Index | Country Code | Country or area | City Code | Urban Agglomeration  | Note | Latitude | Longitude | Population of Urban Agglomerations with 300,000 Inhabitants or More in 2014, 1950-2030 (thousands) |       |       |       |       |       |       |       |
|-------|--------------|-----------------|-----------|----------------------|------|----------|-----------|--|-------|-------|-------|-------|-------|-------|-------|
|       |              |                 |           |                      |      |          |           | 1950   | 1955  | 1960  | 1965  | 1970  | 1975  | 1980  | 1985  |
| 1     | 4            | Afghanistan     | 20001     | Herat                |      | 34,35    | 62,20     | 82   | 86    | 89    | 93    | 102   | 120   | 144   | 162   |
| 2     | 4            | Afghanistan     | 20002     | Kabul                |      | 34,53    | 69,17     | 171  | 221   | 285   | 369   | 472   | 674   | 978   | 1 240 |
| 3     | 4            | Afghanistan     | 20003     | Kandahar             |      | 31,61    | 65,71     | 82   | 90    | 98    | 107   | 127   | 154   | 183   | 207   |
| 4     | 8            | Albania         | 20005     | Tiranë (Tirana)      |      | 41,33    | 19,82     | 85   | 107   | 135   | 145   | 157   | 174   | 194   | 218   |
| 5     | 12           | Algeria         | 20009     | Annaba               |      | 36,90    | 7,77      | 100  | 116   | 136   | 159   | 192   | 234   | 267   | 295   |
| 6     | 12           | Algeria         | 20011     | Batna                |      | 35,56    | 6,17      | 13   | 21    | 33    | 52    | 71    | 94    | 124   | 165   |
| 7     | 12           | Algeria         | 20015     | Blida                |      | 36,48    | 2,83      | 34   | 46    | 62    | 84    | 104   | 128   | 147   | 164   |
| 8     | 12           | Algeria         | 20006     | El Djazair (Algiers) | 1    | 36,75    | 3,04      | 516  | 623   | 872   | 1 081 | 1 281 | 1 507 | 1 621 | 1 672 |
| 9     | 12           | Algeria         | 20020     | El Djelfa            |      | 34,67    | 3,26      | 10   | 14    | 18    | 25    | 33    | 43    | 57    | 76    |
| 10    | 12           | Algeria         | 20019     | Qacentina            |      | 36,35    | 6,61      | 88   | 122   | 169   | 234   | 281   | 328   | 376   | 425   |
| 11    | 12           | Algeria         | 20035     | Wahran (Oran)        |      | 35,69    | -0,64     | 269  | 286   | 305   | 325   | 385   | 466   | 537   | 604   |
| 12    | 24           | Angola          | 20050     | Huambo               |      | -12,78   | 15,74     | 15   | 24    | 37    | 48    | 61    | 95    | 153   | 232   |
| 13    | 24           | Angola          | 20049     | Luanda               |      | -8,84    | 13,23     | 138  | 174   | 219   | 315   | 459   | 599   | 771   | 1 018 |
| 14    | 24           | Angola          | 204044    | Lubango              |      | -14,92   | 13,49     | 7  | 10    | 14    | 21    | 31    | 41    | 54    | 71    |
| 15    | 32           | Argentina       | 20057     | Bahia Blanca         |      | -38,72   | -62,27    | 116  | 121   | 126   | 151   | 181   | 201   | 222   | 237   |
| 16    | 32           | Argentina       | 20058     | Buenos Aires         | 2    | -34,61   | -58,40    | 5 098  | 5 799 | 6 598 | 7 317 | 8 105 | 8 745 | 9 422 | 9 959 |
| 17    | 32           | Argentina       | 20059     | Córdoba              | 3    | -31,41   | -64,18    | 429  | 510   | 605   | 701   | 810   | 905   | 1 010 | 1 102 |
| 18    | 32           | Argentina       | 20063     | Corrientes           | 4    | -27,48   | -58,83    | 64   | 79    | 97    | 115   | 136   | 156   | 179   | 212   |

- x Ne garder que les colonnes utiles
- x Données en deuxième ligne
- x Renommer les variables

- x Identifiant : première colonne
- x Enregistrer en .csv



# Exercice 1

## [3] Se familiariser avec le jeu de données et préparer son intégration dans Magrit

| id     | Name                        | Latitude | Longitude | POP_T_1950 | POP_T_1955 | POP_T_1960 | POP_T_1965 | POP_T_1970 | POP_T_1975 | POP_T_1980 |
|--------|-----------------------------|----------|-----------|------------|------------|------------|------------|------------|------------|------------|
| 20001  | Herat                       | 34,35    | 62,20     | 82         | 86         | 89         | 93         | 102        | 120        | 144        |
| 20002  | Kabul                       | 34,53    | 69,17     | 171        | 221        | 285        | 369        | 472        | 674        | 978        |
| 20003  | Kandahar                    | 31,61    | 65,71     | 82         | 90         | 98         | 107        | 127        | 154        | 183        |
| 20005  | Tirane (Tirana)             | 41,33    | 19,82     | 85         | 107        | 135        | 145        | 157        | 174        | 194        |
| 20009  | Annaba                      | 36,90    | 7,77      | 100        | 116        | 136        | 159        | 192        | 234        | 267        |
| 20011  | Batna                       | 35,56    | 6,17      | 13         | 21         | 33         | 52         | 71         | 94         | 124        |
| 20015  | Blida                       | 36,48    | 2,83      | 34         | 46         | 62         | 84         | 104        | 128        | 147        |
| 20006  | El Djazair (Algiers)        | 36,75    | 3,04      | 516        | 623        | 872        | 1 081      | 1 281      | 1 507      | 1 621      |
| 20020  | El Djelfa                   | 34,67    | 3,26      | 10         | 14         | 18         | 25         | 33         | 43         | 57         |
| 20019  | Qacentina                   | 36,35    | 6,61      | 88         | 122        | 169        | 234        | 281        | 328        | 376        |
| 20035  | Wahran (Oran)               | 35,69    | -0,64     | 269        | 286        | 305        | 325        | 385        | 466        | 537        |
| 20050  | Huambo                      | -12,78   | 15,74     | 15         | 24         | 37         | 48         | 61         | 95         | 153        |
| 20049  | Luanda                      | -8,84    | 13,23     | 138        | 174        | 219        | 315        | 459        | 599        | 771        |
| 204044 | Lubango                     | -14,92   | 13,49     | 7          | 10         | 14         | 21         | 31         | 41         | 54         |
| 20057  | Bahia Blanca                | -38,72   | -62,27    | 116        | 121        | 126        | 151        | 181        | 201        | 222        |
| 20058  | Buenos Aires                | -34,61   | -58,40    | 5 098      | 5 799      | 6 598      | 7 317      | 8 105      | 8 745      | 9 422      |
| 20059  | Córdoba                     | -31,41   | -64,18    | 429        | 510        | 605        | 701        | 810        | 905        | 1 010      |
| 20063  | Corrientes                  | -27,48   | -58,83    | 64         | 79         | 97         | 115        | 136        | 156        | 179        |
| 20065  | La Plata                    | -34,92   | -57,95    | 300        | 347        | 401        | 441        | 484        | 522        | 562        |
| 20067  | Mar Del Plata               | -38,00   | -57,56    | 132        | 166        | 209        | 251        | 300        | 351        | 411        |
| 20068  | Mendoza                     | -32,89   | -68,83    | 246        | 284        | 328        | 394        | 473        | 537        | 608        |
| 20070  | Neuquén-Plottier-Cipolletti | -38,95   | -68,06    | 14         | 23         | 37         | 50         | 68         | 96         | 135        |
| 20072  | Posadas                     | -27,37   | -55,90    | 46         | 58         | 73         | 84         | 97         | 117        | 142        |
| 20073  | Resistencia                 | -27,46   | -58,98    | 73         | 87         | 105        | 122        | 142        | 175        | 217        |
| 20075  | Rosario                     | -32,95   | -60,64    | 554        | 610        | 671        | 740        | 816        | 883        | 953        |
| 20076  | Salta                       | -24,79   | -65,41    | 77         | 95         | 117        | 143        | 174        | 212        | 258        |
| 20078  | San Juan                    | -31,54   | -68,54    | 108        | 127        | 149        | 181        | 220        | 253        | 289        |
| 20081  | San Miguel de Tucumán       | -26,82   | -65,22    | 224        | 260        | 301        | 332        | 365        | 424        | 494        |
| 20084  | San Salvador de Jujuy       | -24,19   | -65,30    | 34         | 39         | 44         | 59         | 81         | 101        | 124        |
| 20085  | Santa Fe                    | -31,63   | -60,70    | 214        | 239        | 266        | 288        | 313        | 347        | 386        |
| 20086  | Santiago Del Estero         | -27,80   | -64,26    | 83         | 93         | 104        | 120        | 139        | 165        | 196        |

x Ne garder que les colonnes utiles

x Identifiant : première colonne

x Données en deuxième ligne

x Renommer les variables

# Exercice 1

[3] Se familiariser avec le jeu de données et préparer son intégration dans Magrit

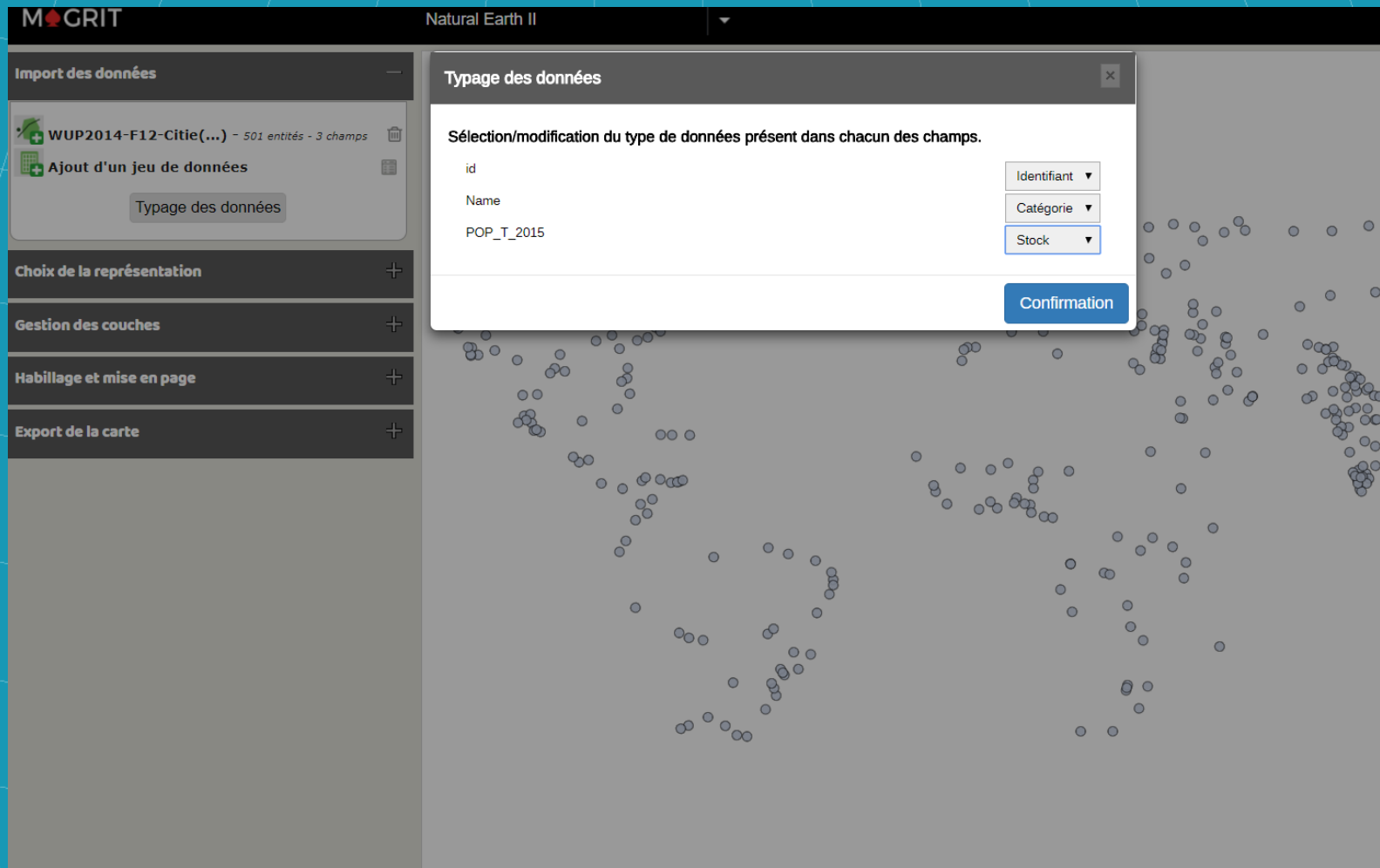
| id    | Name                | Latitude | Longitude | POP_T_2015 |
|-------|---------------------|----------|-----------|------------|
| 23709 | Ruian               | 27,78    | 120,68    | 973        |
| 20544 | Huaibei             | 33,95    | 116,79    | 981        |
| 21903 | Tanger              | 35,78    | -5,81     | 982        |
| 22336 | Perm                | 58,02    | 56,29     | 982        |
| 20784 | Zhangjiakou         | 40,81    | 114,88    | 983        |
| 21409 | Solapur             | 17,68    | 75,92     | 986        |
| 22028 | Oslo                | 59,91    | 10,75     | 986        |
| 20739 | Xinxiang            | 35,30    | 113,90    | 991        |
| 21837 | Cuernavaca          | 18,92    | -99,25    | 993        |
| 21945 | Rotterdam           | 51,92    | 4,48      | 993        |
| 20142 | Antwerpen           | 51,22    | 4,40      | 994        |
| 20634 | Pingdingshan, Henan | 33,74    | 113,30    | 995        |
| 21772 | Vientiane           | 17,97    | 102,60    | 997        |
| 21196 | Bhubaneswar         | 20,23    | 85,83     | 999        |
| 20459 | Baoji               | 34,37    | 107,20    | 1 001      |
| 21392 | Salem               | 11,65    | 78,17     | 1 003      |
| 21540 | Sulaimaniya         | 35,56    | 45,44     | 1 004      |
| 23697 | Puning              | 23,30    | 116,16    | 1 005      |
| 22445 | Freetown            | 8,48     | -13,23    | 1 007      |
| 22283 | Krasnoyarsk         | 56,01    | 92,79     | 1 008      |
| 20068 | Mendoza             | -32,89   | -68,83    | 1 009      |
| 20723 | Xiangtan, Hunan     | 27,83    | 112,93    | 1 010      |
| 22782 | Odesa               | 46,48    | 30,73     | 1 010      |

Ne garder que POP\_T\_2015

Supprimer les villes de moins d'1 million d'habitants

# Exercice 1

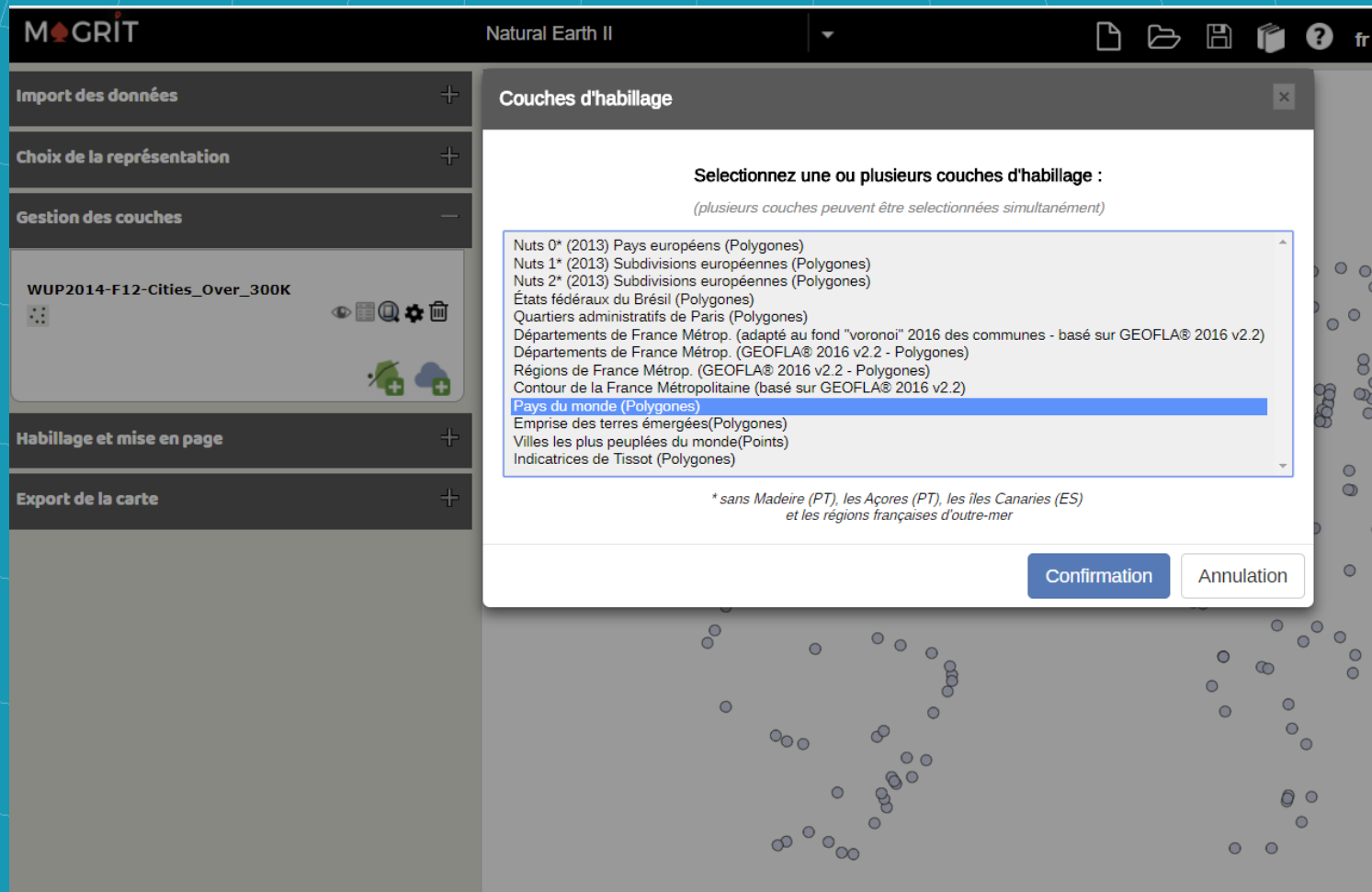
## [4] Import du fichier dans Magrit



Typer les champs correctement (POP\_T\_2015 = stock)

# Exercice 1

## [5] Rajout d'une couche d'habillage



Plusieurs fonds de cartes sont disponibles dans Magrit

# Exercice 1

## [5] Rajout d'une couche d'habillage

**MGRIT** Natural Earth II

Import des données +

Choix de la représentation +

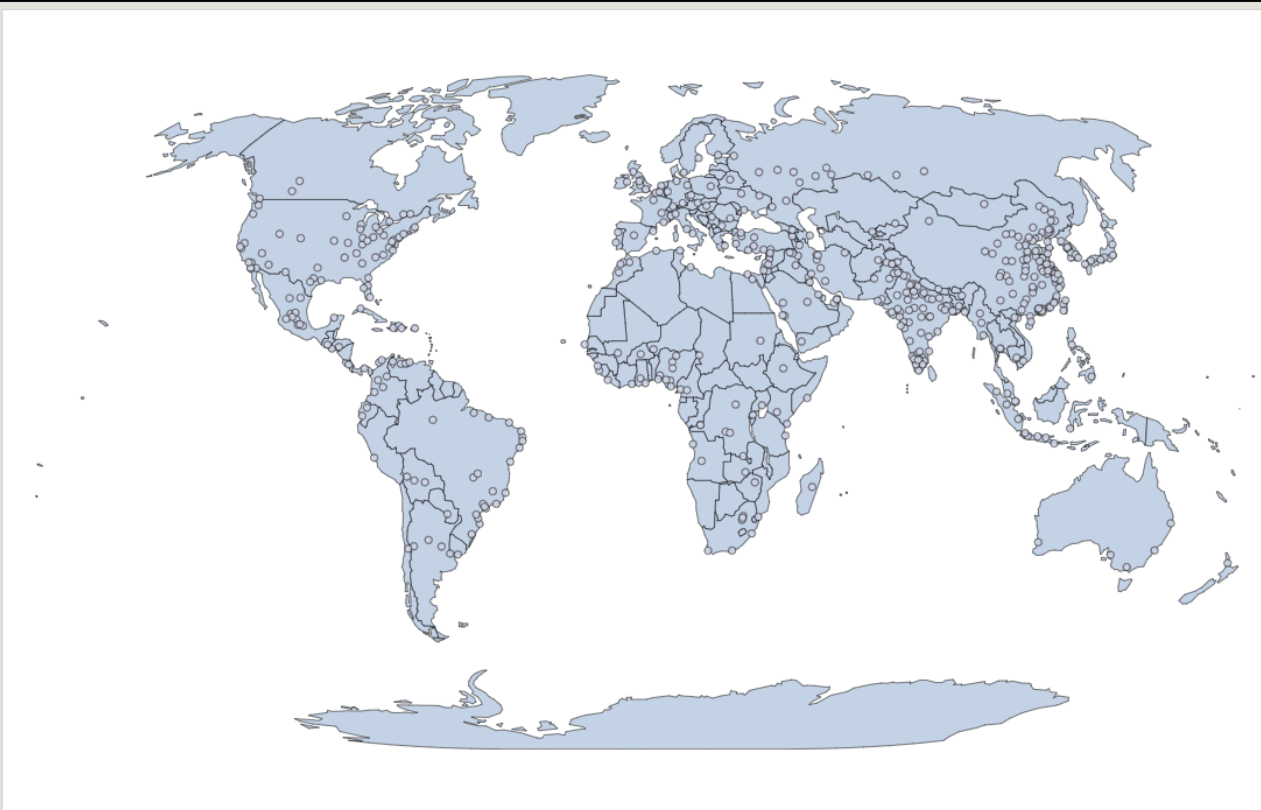
Représentation : Carte de stocks +

Gestion des couches -

WUP2014-F12-Cities\_Over\_300K  
world\_countries\_data

Habillage et mise en page +

Export de la carte +

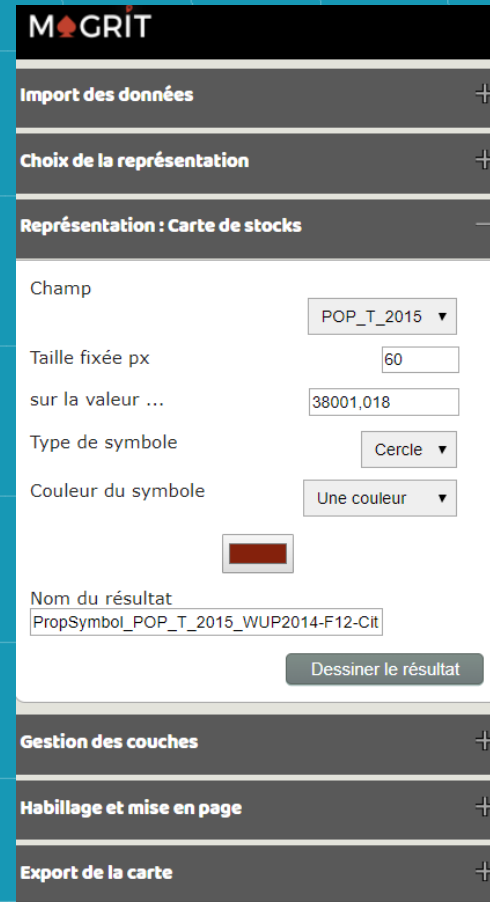


Ordonner les couches



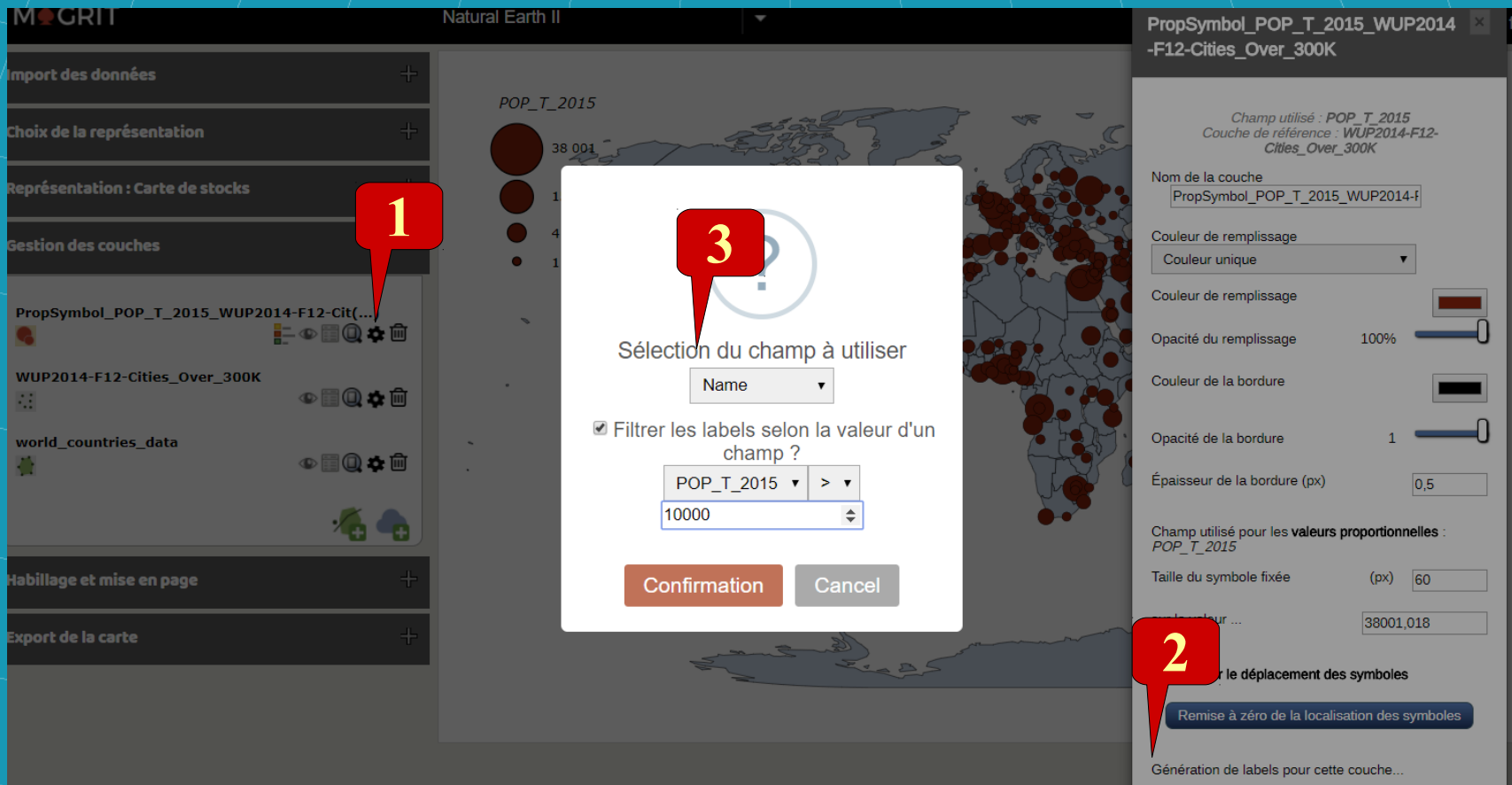
# Exercice 1

## [6] Choix de la représentation



# Exercice 1

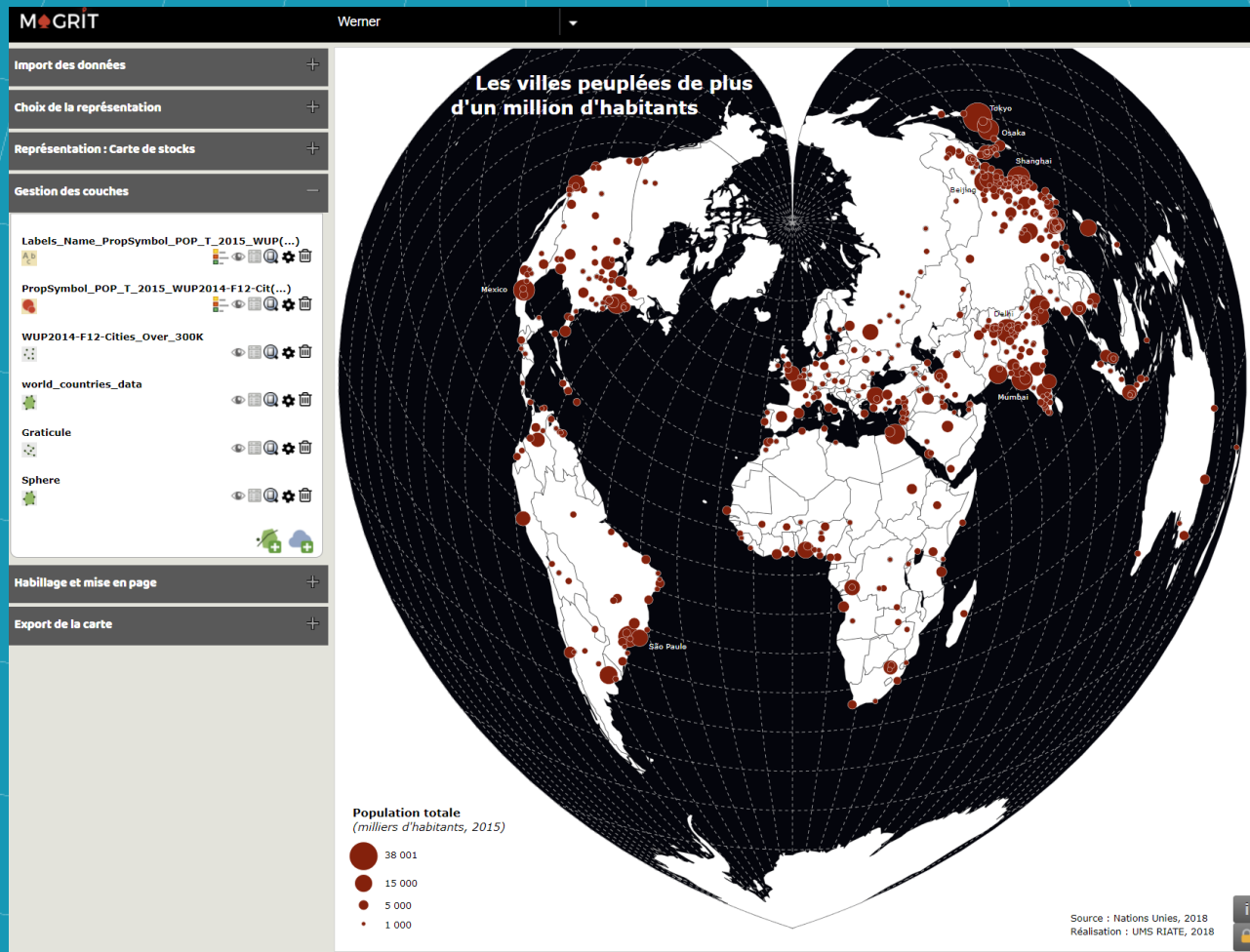
## [7] Améliorer la lisibilité



Couleur et transparence des cercles, des territoires  
Couleur et épaisseur des bordures  
Création d'une couche de labels

# Exercice 1

## [8] Mettre en page



Titre, sources, légende, projection, graticules, emprise de la carte...  
Plus développé dans le point théorique 4 !