Table Example

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First, install the package ‘openxlsx’ by running install.packages('openxlsx') just once.

Then, you need to load the package, which we need to do each time we launch RStudio so might as well just have in the script.

library(openxlsx)

Then we need to load the Excel sheet into R.

cities <- read.xlsx('cities.xlsx', sheet = 1)

We can simply print the data in the table…

cities

## Rank City Population Definition Area.(sq.km)  
## 1 1 Chongqing 30165500 Municipality 82403.00  
## 2 2 Shanghai 24183300 Municipality 6340.00  
## 3 3 Beijing 21707000 Municipality 16411.00  
## 4 4 Istanbul 15029231 Metropolitan municipality 620.29  
## 5 5 Karachi 14910352 City 3780.00  
## 6 6 Dhaka 14399000 City 337.54  
## 7 7 Guangzhou 13081000 City (sub-provincial) 7434.00  
## 8 8 Shenzhen 12528300 City (sub-provincial) 1992.00  
## 9 9 Mumbai 12442373 City 437.71  
## 10 10 Moscow 13200000 Federal city 2511.00  
## Population.density.(per.sq.km) Country  
## 1 366 China  
## 2 3814 China  
## 3 1267 China  
## 4 24231 Turkey  
## 5 3944 Pakistan  
## 6 42659 Bangladesh  
## 7 1760 China  
## 8 6889 China  
## 9 28426 India  
## 10 5256 Russia

but the output is pretty ugly. Instead, we can use one of the functions associated with the ‘knit’ command to make the table look nicer (you can find out more by typing ?knitr::kable in the command line). To get the entries to be smaller you need to update the ‘compact’ style in the reference Word doc.

# install.packages('kableExtra') #only need to do once   
knitr::kable(cities)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Rank | City | Population | Definition | Area.(sq.km) | Population.density.(per.sq.km) | Country |
| 1 | Chongqing | 30165500 | Municipality | 82403.00 | 366 | China |
| 2 | Shanghai | 24183300 | Municipality | 6340.00 | 3814 | China |
| 3 | Beijing | 21707000 | Municipality | 16411.00 | 1267 | China |
| 4 | Istanbul | 15029231 | Metropolitan municipality | 620.29 | 24231 | Turkey |
| 5 | Karachi | 14910352 | City | 3780.00 | 3944 | Pakistan |
| 6 | Dhaka | 14399000 | City | 337.54 | 42659 | Bangladesh |
| 7 | Guangzhou | 13081000 | City (sub-provincial) | 7434.00 | 1760 | China |
| 8 | Shenzhen | 12528300 | City (sub-provincial) | 1992.00 | 6889 | China |
| 9 | Mumbai | 12442373 | City | 437.71 | 28426 | India |
| 10 | Moscow | 13200000 | Federal city | 2511.00 | 5256 | Russia |

(Don’t worry about the next part, but might be useful)

If it seems that this requires a lot of lines of code, you can put it all in one line:

knitr::kable(read.xlsx('cities.xlsx', sheet = 1))

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Rank | City | Population | Definition | Area.(sq.km) | Population.density.(per.sq.km) | Country |
| 1 | Chongqing | 30165500 | Municipality | 82403.00 | 366 | China |
| 2 | Shanghai | 24183300 | Municipality | 6340.00 | 3814 | China |
| 3 | Beijing | 21707000 | Municipality | 16411.00 | 1267 | China |
| 4 | Istanbul | 15029231 | Metropolitan municipality | 620.29 | 24231 | Turkey |
| 5 | Karachi | 14910352 | City | 3780.00 | 3944 | Pakistan |
| 6 | Dhaka | 14399000 | City | 337.54 | 42659 | Bangladesh |
| 7 | Guangzhou | 13081000 | City (sub-provincial) | 7434.00 | 1760 | China |
| 8 | Shenzhen | 12528300 | City (sub-provincial) | 1992.00 | 6889 | China |
| 9 | Mumbai | 12442373 | City | 437.71 | 28426 | India |
| 10 | Moscow | 13200000 | Federal city | 2511.00 | 5256 | Russia |

You probably notices that R has put dots between words in the column headings, which is pretty ugly. You can change the headings this way:

names(cities) <- c('Rank', 'City', 'Population', 'Definition', 'Area (sq km)', 'Population density (per sq km)', 'Country')  
  
knitr::kable(cities)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Rank | City | Population | Definition | Area (sq km) | Population density (per sq km) | Country |
| 1 | Chongqing | 30165500 | Municipality | 82403.00 | 366 | China |
| 2 | Shanghai | 24183300 | Municipality | 6340.00 | 3814 | China |
| 3 | Beijing | 21707000 | Municipality | 16411.00 | 1267 | China |
| 4 | Istanbul | 15029231 | Metropolitan municipality | 620.29 | 24231 | Turkey |
| 5 | Karachi | 14910352 | City | 3780.00 | 3944 | Pakistan |
| 6 | Dhaka | 14399000 | City | 337.54 | 42659 | Bangladesh |
| 7 | Guangzhou | 13081000 | City (sub-provincial) | 7434.00 | 1760 | China |
| 8 | Shenzhen | 12528300 | City (sub-provincial) | 1992.00 | 6889 | China |
| 9 | Mumbai | 12442373 | City | 437.71 | 28426 | India |
| 10 | Moscow | 13200000 | Federal city | 2511.00 | 5256 | Russia |

If you want to get a bit fancy, you could write a little function that changes the dots to spaces, which means that you can still make the table appear in just one line of code (after you’ve defined the function just one time):

makePretty <- function(x){  
 names(x) <- gsub('\\.', '\\ ', names(x))  
 return(x)  
}  
  
knitr::kable(makePretty(read.xlsx('cities.xlsx', sheet = 1)))

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Rank | City | Population | Definition | Area (sq km) | Population density (per sq km) | Country |
| 1 | Chongqing | 30165500 | Municipality | 82403.00 | 366 | China |
| 2 | Shanghai | 24183300 | Municipality | 6340.00 | 3814 | China |
| 3 | Beijing | 21707000 | Municipality | 16411.00 | 1267 | China |
| 4 | Istanbul | 15029231 | Metropolitan municipality | 620.29 | 24231 | Turkey |
| 5 | Karachi | 14910352 | City | 3780.00 | 3944 | Pakistan |
| 6 | Dhaka | 14399000 | City | 337.54 | 42659 | Bangladesh |
| 7 | Guangzhou | 13081000 | City (sub-provincial) | 7434.00 | 1760 | China |
| 8 | Shenzhen | 12528300 | City (sub-provincial) | 1992.00 | 6889 | China |
| 9 | Mumbai | 12442373 | City | 437.71 | 28426 | India |
| 10 | Moscow | 13200000 | Federal city | 2511.00 | 5256 | Russia |

We can add commas for thousands with a simple option in knitr::kable, and control the alignment of the columns:

knitr::kable(makePretty(read.xlsx('cities.xlsx', sheet = 1)),  
 format.args = list(big.mark = ","),  
 align = c('r','c','c','c','c','c','c'))

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Rank | City | Population | Definition | Area (sq km) | Population density (per sq km) | Country |
| 1 | Chongqing | 30,165,500 | Municipality | 82,403.00 | 366 | China |
| 2 | Shanghai | 24,183,300 | Municipality | 6,340.00 | 3,814 | China |
| 3 | Beijing | 21,707,000 | Municipality | 16,411.00 | 1,267 | China |
| 4 | Istanbul | 15,029,231 | Metropolitan municipality | 620.29 | 24,231 | Turkey |
| 5 | Karachi | 14,910,352 | City | 3,780.00 | 3,944 | Pakistan |
| 6 | Dhaka | 14,399,000 | City | 337.54 | 42,659 | Bangladesh |
| 7 | Guangzhou | 13,081,000 | City (sub-provincial) | 7,434.00 | 1,760 | China |
| 8 | Shenzhen | 12,528,300 | City (sub-provincial) | 1,992.00 | 6,889 | China |
| 9 | Mumbai | 12,442,373 | City | 437.71 | 28,426 | India |
| 10 | Moscow | 13,200,000 | Federal city | 2,511.00 | 5,256 | Russia |