Lab 1: Intro to R, Rmd, & GitHub

GIS III: Spring 2020

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The following lab walks through basics of creating an R Markdown file. Prepared for Dr. Marynia Kolak's GIS III course at the University of Chicago.

Showing the R version installed:

```
version
```

```
##                _
## platform       x86_64-apple-darwin15.6.0
## arch           x86_64
## os             darwin15.6.0
## system         x86_64, darwin15.6.0
## status
## major          3
## minor          6.3
## year           2020
## month          02
## day            29
## svn rev        77875
## language       R
## version.string R version 3.6.3 (2020-02-29)
## nickname       Holding the Windsock
```

Loading libraries:

```
## -- Attaching packages ------------------------------------------------ tidyverse 1.3.0 --

## v ggplot2 3.2.1     v purrr   0.3.3
## v tibble  2.1.3     v dplyr   0.8.3
## v tidyr   1.0.0     v stringr 1.4.0
## v readr   1.3.1     v forcats 0.4.0

## -- Conflicts --------------------------------------------------- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()    masks stats::lag()

## Linking to GEOS 3.7.2, GDAL 2.4.2, PROJ 5.2.0
```

Examples of R code:

```
# View variables of World Bank Population dataset
names(world_bank_pop)
```

```
##  [1] "country"   "indicator" "2000"      "2001"      "2002"
##  [6] "2003"      "2004"      "2005"      "2006"      "2007"
## [11] "2008"      "2009"      "2010"      "2011"      "2012"
## [16] "2013"      "2014"      "2015"      "2016"      "2017"
```

```r
# Look at unique country abbreviations
unique(world_bank_pop$country)
```

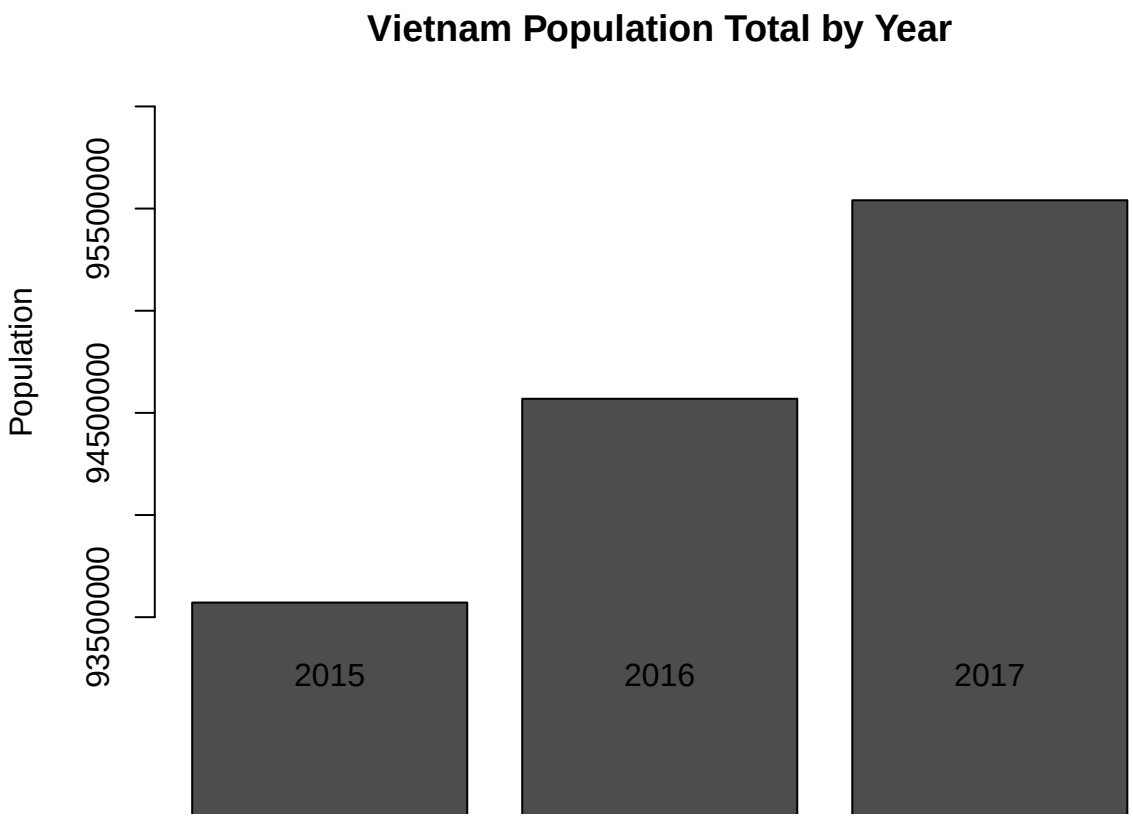
```
##   [1] "ABW" "AFG" "AGO" "ALB" "AND" "ARB" "ARE" "ARG" "ARM" "ASM" "ATG"
##  [12] "AUS" "AUT" "AZE" "BDI" "BEL" "BEN" "BFA" "BGD" "BGR" "BHR" "BHS"
##  [23] "BIH" "BLR" "BLZ" "BMU" "BOL" "BRA" "BRB" "BRN" "BTN" "BWA" "CAF"
##  [34] "CAN" "CEB" "CHE" "CHI" "CHL" "CHN" "CIV" "CMR" "COD" "COG" "COL"
##  [45] "COM" "CPV" "CRI" "CSS" "CUB" "CUW" "CYM" "CYP" "CZE" "DEU" "DJI"
##  [56] "DMA" "DNK" "DOM" "DZA" "EAP" "EAR" "EAS" "ECA" "ECS" "ECU" "EGY"
##  [67] "EMU" "ERI" "ESP" "EST" "ETH" "EUU" "FCS" "FIN" "FJI" "FRA" "FRO"
##  [78] "FSM" "GAB" "GBR" "GEO" "GHA" "GIB" "GIN" "GMB" "GNB" "GNQ" "GRC"
##  [89] "GRD" "GRL" "GTM" "GUM" "GUY" "HIC" "HKG" "HND" "HPC" "HRV" "HTI"
## [100] "HUN" "IBD" "IBT" "IDA" "IDB" "IDN" "IDX" "IMN" "IND" "INX" "IRL"
## [111] "IRN" "IRQ" "ISL" "ISR" "ITA" "JAM" "JOR" "JPN" "KAZ" "KEN" "KGZ"
## [122] "KHM" "KIR" "KNA" "KOR" "KWT" "LAC" "LAO" "LBN" "LBR" "LBY" "LCA"
## [133] "LCN" "LDC" "LIC" "LIE" "LKA" "LMC" "LMY" "LSO" "LTE" "LTU" "LUX"
## [144] "LVA" "MAC" "MAF" "MAR" "MCO" "MDA" "MDG" "MDV" "MEA" "MEX" "MHL"
## [155] "MIC" "MKD" "MLI" "MLT" "MMR" "MNA" "MNE" "MNG" "MNP" "MOZ" "MRT"
## [166] "MUS" "MWI" "MYS" "NAC" "NAM" "NCL" "NER" "NGA" "NIC" "NLD" "NOR"
## [177] "NPL" "NRU" "NZL" "OED" "OMN" "OSS" "PAK" "PAN" "PER" "PHL" "PLW"
## [188] "PNG" "POL" "PRE" "PRI" "PRK" "PRT" "PRY" "PSE" "PSS" "PST" "PYF"
## [199] "QAT" "ROU" "RUS" "RWA" "SAS" "SAU" "SDN" "SEN" "SGP" "SLB" "SLE"
## [210] "SLV" "SMR" "SOM" "SRB" "SSA" "SSD" "SSF" "SST" "STP" "SUR" "SVK"
## [221] "SVN" "SWE" "SWZ" "SXM" "SYC" "SYR" "TCA" "TCD" "TEA" "TEC" "TGO"
## [232] "THA" "TJK" "TKM" "TLA" "TLS" "TMN" "TON" "TSA" "TSS" "TTO" "TUN"
## [243] "TUR" "TUV" "TZA" "UGA" "UKR" "UMC" "URY" "USA" "UZB" "VCT" "VEN"
## [254] "VGB" "VIR" "VNM" "VUT" "WLD" "WSM" "XKX" "YEM" "ZAF" "ZMB" "ZWE"
```

```r
unique(world_bank_pop$indicator)
```

```
## [1] "SP.URB.TOTL" "SP.URB.GROW" "SP.POP.TOTL" "SP.POP.GROW"
```

```r
# Select new data frame for Vietnam population 2015 - 2017
vietnam_pop <-
  world_bank_pop %>%
  filter(country == "VNM") %>%
  filter(indicator == "SP.POP.TOTL") %>%
  select(`2015`, `2016`, `2017`)

# Create bar plot
barplot(
  as.matrix(vietnam_pop),
  ylim = range(pretty(vietnam_pop)),
  ylab = "Population",
  main = "Vietnam Population Total by Year"
)
```


Vietnam Population Total by Year
Population
93500000
94500000
95500000
2015
2016
2017