Stat 184 SU Final

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```r
library(ggplot2)
library(tidyr)
```

```
Warning: package 'tidyr' was built under R version 4.3.3
```

```r
library(dplyr)
```

```
Warning: package 'dplyr' was built under R version 4.3.3
```

```
Attaching package: 'dplyr'
```

```
The following objects are masked from 'package:stats':

    filter, lag
```

```
The following objects are masked from 'package:base':

    intersect, setdiff, setequal, union
```

```r
library(rnaturalearth)

AlcConsumption <- read.csv("C:/Users/aashr/Documents/Stat 184 SU/World Alc Consumption.csv")
WorldHappiness <- read.csv("C:/Users/aashr/Documents/Stat 184 SU/World Happiness 2020.csv")
```

```r
glimpse(AlcConsumption)
```

```
Rows: 266
Columns: 69
$ Country.Name   <chr> "Aruba", "Africa Eastern and Southern", "Afghanistan", ~
$ Country.Code   <chr> "ABW", "AFE", "AFG", "AFW", "AGO", "ALB", "AND", "ARB",~
$ Indicator.Name <chr> "Total alcohol consumption per capita (liters of pure a~
$ Indicator.Code <chr> "SH.ALC.PCAP.LI", "SH.ALC.PCAP.LI", "SH.ALC.PCAP.LI", "~
$ X1960          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1961          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1962          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1963          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1964          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1965          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1966          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1967          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1968          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1969          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1970          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1971          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1972          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1973          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1974          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1975          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1976          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1977          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1978          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1979          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1980          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1981          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1982          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1983          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1984          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1985          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1986          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1987          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1988          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1989          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1990          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1991          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1992          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1993          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1994          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1995          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1996          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
```

```
$ X1997          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1998          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X1999          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X2000          <dbl> NA, 5.4413609, 0.0030000, 5.7196432, 5.1900000, 4.43000~
$ X2001          <dbl> NA, 5.4377055, 0.0030000, 5.7185643, 5.1900000, 4.43000~
$ X2002          <dbl> NA, 5.2963449, 0.0070000, 5.7530312, 5.4300000, 4.57000~
$ X2003          <dbl> NA, 5.258515, 0.016000, 5.758267, 5.580000, 4.580000, 1~
$ X2004          <dbl> NA, 5.0858217, 0.0210000, 5.7766507, 6.0800000, 4.98000~
$ X2005          <dbl> NA, 5.0582157, 0.0270000, 5.7694416, 6.6900000, 5.30000~
$ X2006          <dbl> NA, 4.9307922, 0.0250000, 5.7402541, 7.2700000, 5.64000~
$ X2007          <dbl> NA, 4.8828801, 0.0300000, 5.7117222, 7.6100000, 5.81000~
$ X2008          <dbl> NA, 4.8434810, 0.0250000, 5.6719214, 7.7800000, 6.00000~
$ X2009          <dbl> NA, 4.7264979, 0.0230000, 5.1381697, 8.1100000, 5.94000~
$ X2010          <dbl> NA, 4.730872, 0.012000, 4.702612, 8.320000, 5.900000, 1~
$ X2011          <dbl> NA, 4.6911893, 0.0080000, 4.2903224, 8.5900000, 5.58000~
$ X2012          <dbl> NA, 4.7175846, 0.0040000, 4.4190967, 8.6100000, 5.37000~
$ X2013          <dbl> NA, 4.7660549, 0.0040000, 4.4418747, 8.7400000, 5.04000~
$ X2014          <dbl> NA, 4.774837, 0.004000, 4.459439, 8.320000, 5.000000, 1~
$ X2015          <dbl> NA, 4.7526411, 0.0090000, 4.4290269, 7.7600000, 5.04000~
$ X2016          <dbl> NA, 4.657244, 0.013000, 4.358540, 7.010000, 5.130000, 1~
$ X2017          <dbl> NA, 4.6095319, 0.0170000, 4.2973830, 6.6700000, 5.13000~
$ X2018          <dbl> NA, 4.6067018, 0.0160000, 4.2488440, 6.1700000, 5.11000~
$ X2019          <dbl> NA, 4.607425, 0.016000, 4.247439, 6.170000, 5.110000, 1~
$ X2020          <dbl> NA, 4.201692, 0.011000, 4.081764, 4.130000, 4.470000, 9~
$ X2021          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X2022          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X2023          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
$ X2024          <lgl> NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA, NA,~
```

```
glimpse(WorldHappiness)
```

```
Rows: 153
Columns: 20
$ Country.name                    <chr> "Finland", "Denmark", "Swit~
$ Regional.indicator              <chr> "Western Europe", "Western ~
$ Ladder.score                    <dbl> 7.8087, 7.6456, 7.5599, 7.5~
$ Standard.error.of.ladder.score  <dbl> 0.03115630, 0.03349229, 0.0~
$ upperwhisker                    <dbl> 7.869766, 7.711245, 7.62852~
$ lowerwhisker                    <dbl> 7.747634, 7.579955, 7.49127~
$ Logged.GDP.per.capita           <dbl> 10.639267, 10.774001, 10.97~
$ Social.support                  <dbl> 0.9543297, 0.9559908, 0.942~
$ Healthy.life.expectancy         <dbl> 71.90083, 72.40250, 74.1024~
```

```
$ Freedom.to.make.life.choices                    <dbl> 0.9491722, 0.9514443, 0.921~
$ Generosity                                       <dbl> -0.059482019, 0.066201776, ~
$ Perceptions.of.corruption                        <dbl> 0.1954446, 0.1684895, 0.303~
$ Ladder.score.in.Dystopia                         <dbl> 1.972317, 1.972317, 1.97231~
$ x                                                <dbl> 1.2851895, 1.3269485, 1.390~
$ Explained.by..Social.support                     <dbl> 1.499526, 1.503449, 1.47240~
$ Explained.by..Healthy.life.expectancy            <dbl> 0.9612714, 0.9793326, 1.040~
$ Explained.by..Freedom.to.make.life.choices       <dbl> 0.6623167, 0.6650399, 0.628~
$ Explained.by..Generosity                         <dbl> 0.15967044, 0.24279340, 0.2~
$ Explained.by..Perceptions.of.corruption          <dbl> 0.47785726, 0.49526033, 0.4~
$ Dystopia...residual                              <dbl> 2.762835, 2.432741, 2.35026~
```

```
WorldHappiness<- WorldHappiness %>%
  mutate(Country.Name = Country.name)

WorldData <- inner_join(AlcConsumption, WorldHappiness, by = "Country.Name")
names(WorldData)
```

```
 [1] "Country.Name"
 [2] "Country.Code"
 [3] "Indicator.Name"
 [4] "Indicator.Code"
 [5] "X1960"
 [6] "X1961"
 [7] "X1962"
 [8] "X1963"
 [9] "X1964"
[10] "X1965"
[11] "X1966"
[12] "X1967"
[13] "X1968"
[14] "X1969"
[15] "X1970"
[16] "X1971"
[17] "X1972"
[18] "X1973"
[19] "X1974"
[20] "X1975"
[21] "X1976"
[22] "X1977"
[23] "X1978"
[24] "X1979"
```

4

```
[25] "X1980"
[26] "X1981"
[27] "X1982"
[28] "X1983"
[29] "X1984"
[30] "X1985"
[31] "X1986"
[32] "X1987"
[33] "X1988"
[34] "X1989"
[35] "X1990"
[36] "X1991"
[37] "X1992"
[38] "X1993"
[39] "X1994"
[40] "X1995"
[41] "X1996"
[42] "X1997"
[43] "X1998"
[44] "X1999"
[45] "X2000"
[46] "X2001"
[47] "X2002"
[48] "X2003"
[49] "X2004"
[50] "X2005"
[51] "X2006"
[52] "X2007"
[53] "X2008"
[54] "X2009"
[55] "X2010"
[56] "X2011"
[57] "X2012"
[58] "X2013"
[59] "X2014"
[60] "X2015"
[61] "X2016"
[62] "X2017"
[63] "X2018"
[64] "X2019"
[65] "X2020"
[66] "X2021"
[67] "X2022"
```

```
[68] "X2023"
[69] "X2024"
[70] "Country.name"
[71] "Regional.indicator"
[72] "Ladder.score"
[73] "Standard.error.of.ladder.score"
[74] "upperwhisker"
[75] "lowerwhisker"
[76] "Logged.GDP.per.capita"
[77] "Social.support"
[78] "Healthy.life.expectancy"
[79] "Freedom.to.make.life.choices"
[80] "Generosity"
[81] "Perceptions.of.corruption"
[82] "Ladder.score.in.Dystopia"
[83] "x"
[84] "Explained.by..Social.support"
[85] "Explained.by..Healthy.life.expectancy"
[86] "Explained.by..Freedom.to.make.life.choices"
[87] "Explained.by..Generosity"
[88] "Explained.by..Perceptions.of.corruption"
[89] "Dystopia...residual"
```

```
head(WorldHappiness)
```

```
  Country.name Regional.indicator Ladder.score Standard.error.of.ladder.score
1      Finland     Western Europe       7.8087                     0.03115630
2      Denmark     Western Europe       7.6456                     0.03349229
3  Switzerland     Western Europe       7.5599                     0.03501417
4       Iceland     Western Europe       7.5045                     0.05961586
5        Norway     Western Europe       7.4880                     0.03483738
6   Netherlands    Western Europe       7.4489                     0.02779175
  upperwhisker lowerwhisker Logged.GDP.per.capita Social.support
1     7.869766     7.747634              10.63927      0.9543297
2     7.711245     7.579955              10.77400      0.9559908
3     7.628528     7.491272              10.97993      0.9428466
4     7.621347     7.387653              10.77256      0.9746696
5     7.556281     7.419719              11.08780      0.9524866
6     7.503372     7.394428              10.81271      0.9391388
  Healthy.life.expectancy Freedom.to.make.life.choices  Generosity
1                71.90083                    0.9491722 -0.05948202
2                72.40250                    0.9514443  0.06620178
```

```
3                      74.10245                            0.9213367  0.10591104
4                      73.00000                            0.9488919  0.24694422
5                      73.20078                            0.9557503  0.13453263
6                      72.30092                            0.9085478  0.20761244
  Perceptions.of.corruption Ladder.score.in.Dystopia        x
1               0.1954446                 1.972317 1.285190
2               0.1684895                 1.972317 1.326949
3               0.3037284                 1.972317 1.390774
4               0.7117097                 1.972317 1.326502
5               0.2632182                 1.972317 1.424207
6               0.3647171                 1.972317 1.338946
  Explained.by..Social.support Explained.by..Healthy.life.expectancy
1                    1.499526                             0.9612714
2                    1.503449                             0.9793326
3                    1.472403                             1.0405332
4                    1.547567                             1.0008434
5                    1.495173                             1.0080719
6                    1.463646                             0.9756753
  Explained.by..Freedom.to.make.life.choices Explained.by..Generosity
1                                  0.6623167                0.1596704
2                                  0.6650399                0.2427934
3                                  0.6289545                0.2690558
4                                  0.6619807                0.3623302
5                                  0.6702009                0.2879851
6                                  0.6136265                0.3363176
  Explained.by..Perceptions.of.corruption Dystopia...residual Country.Name
1                               0.4778573            2.762835      Finland
2                               0.4952603            2.432741      Denmark
3                               0.4079459            2.350267  Switzerland
4                               0.1445408            2.460688      Iceland
5                               0.4341006            2.168266       Norway
6                               0.3685698            2.352117  Netherlands
```

```r
head(AlcConsumption)
```

```
            Country.Name Country.Code
1                  Aruba          ABW
2 Africa Eastern and Southern      AFE
3            Afghanistan          AFG
4  Africa Western and Central      AFW
5                 Angola          AGO
6                Albania          ALB
```

```
1 Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ yea
2 Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ yea
3 Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ yea
4 Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ yea
5 Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ yea
6 Total alcohol consumption per capita (liters of pure alcohol, projected estimates, 15+ yea
```

	Indicator.Code	X1960	X1961	X1962	X1963	X1964	X1965	X1966	X1967	X1968	X1969
1	SH.ALC.PCAP.LI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	SH.ALC.PCAP.LI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	SH.ALC.PCAP.LI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	SH.ALC.PCAP.LI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5	SH.ALC.PCAP.LI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	SH.ALC.PCAP.LI	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	X1970	X1971	X1972	X1973	X1974	X1975	X1976	X1977	X1978	X1979	X1980	X1981	X1982
1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	X1983	X1984	X1985	X1986	X1987	X1988	X1989	X1990	X1991	X1992	X1993	X1994	X1995
1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

	X1996	X1997	X1998	X1999	X2000	X2001	X2002	X2003	X2004	X2005
1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2	NA	NA	NA	NA	5.441361	5.437706	5.296345	5.258515	5.085822	5.058216
3	NA	NA	NA	NA	0.003000	0.003000	0.007000	0.016000	0.021000	0.027000
4	NA	NA	NA	NA	5.719643	5.718564	5.753031	5.758267	5.776651	5.769442
5	NA	NA	NA	NA	5.190000	5.190000	5.430000	5.580000	6.080000	6.690000
6	NA	NA	NA	NA	4.430000	4.430000	4.570000	4.580000	4.980000	5.300000

	X2006	X2007	X2008	X2009	X2010	X2011	X2012	X2013
1	NA	NA	NA	NA	NA	NA	NA	NA
2	4.930792	4.882880	4.843481	4.726498	4.730872	4.691189	4.717585	4.766055
3	0.025000	0.030000	0.025000	0.023000	0.012000	0.008000	0.004000	0.004000
4	5.740254	5.711722	5.671921	5.138170	4.702612	4.290322	4.419097	4.441875
5	7.270000	7.610000	7.780000	8.110000	8.320000	8.590000	8.610000	8.740000
6	5.640000	5.810000	6.000000	5.940000	5.900000	5.580000	5.370000	5.040000

	X2014	X2015	X2016	X2017	X2018	X2019	X2020	X2021	X2022

```
1      NA       NA       NA       NA       NA       NA       NA  NA  NA
2 4.774837 4.752641 4.657244 4.609532 4.606702 4.607425 4.201692  NA  NA
3 0.004000 0.009000 0.013000 0.017000 0.016000 0.016000 0.011000  NA  NA
4 4.459439 4.429027 4.358540 4.297383 4.248844 4.247439 4.081764  NA  NA
5 8.320000 7.760000 7.010000 6.670000 6.170000 6.170000 4.130000  NA  NA
6 5.000000 5.040000 5.130000 5.130000 5.110000 5.110000 4.470000  NA  NA
  X2023 X2024
1    NA    NA
2    NA    NA
3    NA    NA
4    NA    NA
5    NA    NA
6    NA    NA
```

```r
WorldData <- WorldData %>%
  select(Country.Name, Country.Code, X2020, Ladder.score, Healthy.life.expectancy, Logged.GDP
  mutate(Country = Country.Name, Code = Country.Code, AlcConsumption = X2020, Happiness = Lad
  select(Country, Code, AlcConsumption, Happiness, LifeExpectancy, GDP_Per_Capita) %>%
  drop_na()

glimpse(WorldData)
```

```
Rows: 130
Columns: 6
$ Country        <chr> "Afghanistan", "Albania", "United Arab Emirates", "Arge~
$ Code           <chr> "AFG", "ALB", "ARE", "ARG", "ARM", "AUS", "AUT", "AZE",~
$ AlcConsumption <dbl> 0.011, 4.470, 2.080, 8.050, 4.280, 10.290, 11.510, 2.49~
$ Happiness      <dbl> 2.5669, 4.8827, 6.7908, 5.9747, 4.6768, 7.2228, 7.2942,~
$ LifeExpectancy <dbl> 52.59000, 68.70814, 67.08279, 68.80380, 66.75066, 73.60~
$ GDP_Per_Capita <dbl> 7.462861, 9.417931, 11.109999, 9.810955, 9.100476, 10.7~
```

```r
summary(WorldData)
```

```
   Country             Code            AlcConsumption     Happiness
 Length:130         Length:130         Min.   : 0.000   Min.   :2.567
 Class :character   Class :character   1st Qu.: 2.085   1st Qu.:4.725
 Mode  :character   Mode  :character   Median : 4.725   Median :5.582
                                       Mean   : 5.491   Mean   :5.530
                                       3rd Qu.: 8.867   3rd Qu.:6.293
                                       Max.   :16.800   Max.   :7.809
 LifeExpectancy  GDP_Per_Capita
```
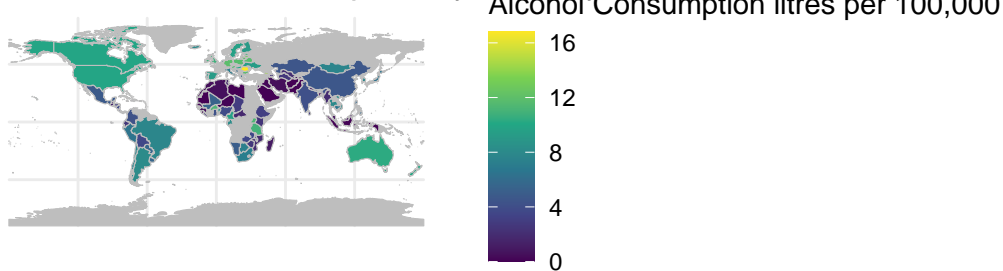
```
Min.    :45.20    Min.    : 6.493
1st Qu.:59.63    1st Qu.: 8.369
Median :66.44    Median : 9.510
Mean    :64.73    Mean    : 9.325
3rd Qu.:69.53    3rd Qu.:10.321
Max.    :76.80    Max.    :11.451
```

```r
world <- ne_countries(scale = "medium", returnclass = "sf")

WorldDataMap <- world %>%
  left_join(WorldData, by = c("iso_a3" = "Code"))
```

```r
ggplot(data = WorldDataMap) +
  geom_sf(aes(fill = AlcConsumption), color = "gray", size = 0.1) +
  scale_fill_viridis_c(na.value = "gray", name = "Alcohol Consumption litres per 100,000") +
  theme_minimal() +
  labs(title = "Global Alcohol Consumption by Country (2020)")
```
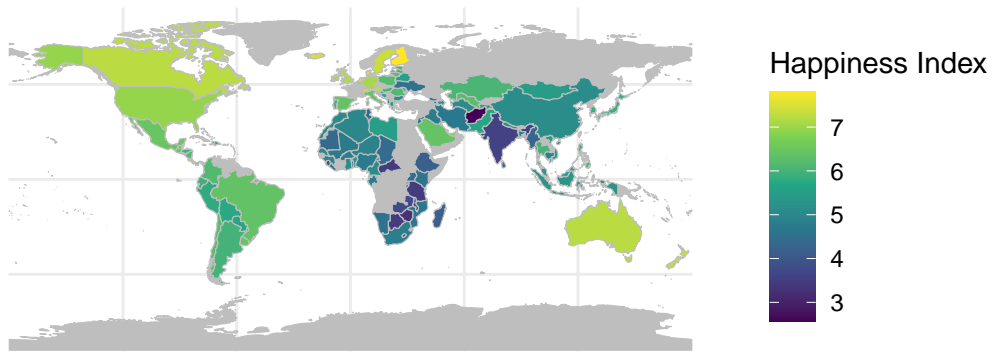

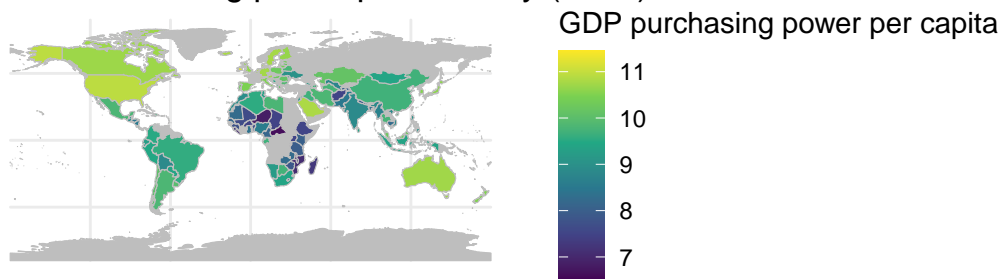Global Alcohol Consumption by Country (2020)

```r
ggplot(data = WorldDataMap) +
  geom_sf(aes(fill = Happiness), color = "gray", size = 0.1) +
  scale_fill_viridis_c(na.value = "gray", name = "Happiness Index")+
  theme_minimal() +
  labs(title = "Global Happiness per Country (2020)")
```

Global Happiness per Country (2020)

Happiness Index

```
ggplot(data = WorldDataMap) +
  geom_sf(aes(fill = GDP_Per_Capita), color = "gray", size = 0.1) +
  scale_fill_viridis_c(na.value = "gray", name = "GDP purchasing power per capita") +
  theme_minimal() +
  labs(title = "GDP Purchasing power per Country (2020)")
```

GDP Purchasing power per Country (2020)

GDP purchasing power per capita

11
10
9
8
7

```
ggplot(data = WorldDataMap) +
  geom_sf(aes(fill = LifeExpectancy), color = "gray", size = 0.1) +
  scale_fill_viridis_c(na.value = "gray", name = "Life Expectancy") +
  theme_minimal() +
  labs(title = "Life Expectancy per Country (2020)")
```

Life Expectancy per Country (2020)