Statistics Project 2

David Rodden, Michael McIntosh, Khang Tran, Jeffrey Lazatin

April 23, 2017

```
sheet = read_excel("GDP.xlsx")
#Country, GDP, LEB
favstats(LEB ~ GDP, data = sheet)
```

```
##       GDP   min      Q1 median      Q3   max     mean         sd n missing
## 1     500 42.84 43.9650 45.090 46.2150 47.34 45.09000  3.1819805 2       0
## 2     600 37.98 41.8950 43.880 51.2700 71.40 49.28500 15.0136505 4       0
## 3     700 41.24 45.0850 48.930 49.4750 50.02 46.73000  4.7856139 3       0
## 4     800 35.25 43.4000 46.970 53.8475 60.97 48.08500  9.3021025 6       0
## 5     900 45.43 46.8250 48.220 49.6150 51.01 48.22000  3.9456558 2       0
## 6    1000 45.22 46.6850 48.150 56.2600 64.37 52.58000 10.3150036 3       0
## 7    1100 41.71 43.7725 47.770 56.4800 72.68 52.48250 14.0275120 4       0
## 8    1200 31.30 39.9050 48.510 57.3950 66.28 48.69667 17.4907471 3       0
## 9    1300 39.33 47.1950 55.060 62.9250 70.79 55.06000 22.2455793 2       0
## 10   1400 42.65 44.3225 49.230 54.9350 59.00 50.02750  7.6168733 4       0
## 11   1500 53.43 57.0250 60.620 64.2150 67.81 60.62000 10.1681955 2       0
## 12   1600 51.61 53.9900 56.370 60.0150 63.66 57.21333  6.0691048 3       0
## 13   1700 54.30 54.3400 54.380 59.1900 64.00 57.56000  5.5773470 3       0
## 14   1800 48.05 51.9300 55.790 63.8100 64.88 56.89200  7.3430865 5       0
## 15   1900 36.96 39.0100 57.730 57.9200 61.33 50.59000 11.6181905 5       0
## 16   2100 49.54 52.7050 55.870 59.0350 62.20 55.87000  8.9519718 2       0
## 17   2200 56.53 58.4450 60.360 62.2750 64.19 60.36000  5.4164379 2       0
## 18   2300 69.68 69.6800 69.680 69.6800 69.68 69.68000         NA 1       0
## 19   2400 64.78 64.7800 64.780 64.7800 64.78 64.78000         NA 1       0
## 20   2500 64.76 66.0825 67.405 68.7275 70.05 67.40500  3.7405949 2       0
## 21   2600 60.60 62.1125 63.625 65.1375 66.65 63.62500  4.2779960 2       0
## 22   2900 61.71 62.6650 63.620 70.2100 76.80 67.37667  8.2165341 3       0
## 23   3000 36.94 36.9400 36.940 36.9400 36.94 36.94000         NA 1       0
## 24   3200 68.94 68.9400 68.940 68.9400 68.94 68.94000         NA 1       0
## 25   3300 69.39 70.0150 70.640 71.2650 71.89 70.64000  1.7677670 2       0
## 26   3400 63.16 63.1600 63.160 63.1600 63.16 63.16000         NA 1       0
## 27   3500 66.68 66.6800 66.680 66.6800 66.68 66.68000         NA 1       0
## 28   3700 72.62 72.6200 72.620 72.6200 72.62 72.62000         NA 1       0
## 29   3900 75.85 75.8500 75.850 75.8500 75.85 75.85000         NA 1       0
## 30   4000 63.09 67.6950 69.635 70.1325 70.41 68.19250  3.4371730 4       0
## 31   4100 65.23 65.2300 65.230 65.2300 65.23 65.23000         NA 1       0
## 32   4300 77.88 77.8800 77.880 77.8800 77.88 77.88000         NA 1       0
## 33   4500 72.37 72.3700 72.370 72.3700 72.37 72.37000         NA 1       0
## 34   4600 69.29 69.2900 69.290 69.2900 69.29 69.29000         NA 1       0
## 35   4700 74.40 74.4000 74.400 74.4000 74.40 74.40000         NA 1       0
## 36   4800 70.62 71.3450 72.070 72.9400 73.81 72.16667  1.5971955 3       0
## 37   4900 39.47 39.4700 39.470 39.4700 39.47 39.47000         NA 1       0
## 38   5000 72.22 72.2200 72.220 72.2200 72.22 72.22000         NA 1       0
## 39   5100 70.88 70.8800 70.880 70.8800 70.88 70.88000         NA 1       0
## 40   5400 66.50 66.5000 66.500 66.5000 66.50 66.50000         NA 1       0
## 41   5500 57.12 61.3700 65.620 69.8700 74.12 65.62000 12.0208153 2       0
## 42   5800 61.19 63.1125 65.035 66.9575 68.88 65.03500  5.4376511 2       0
```

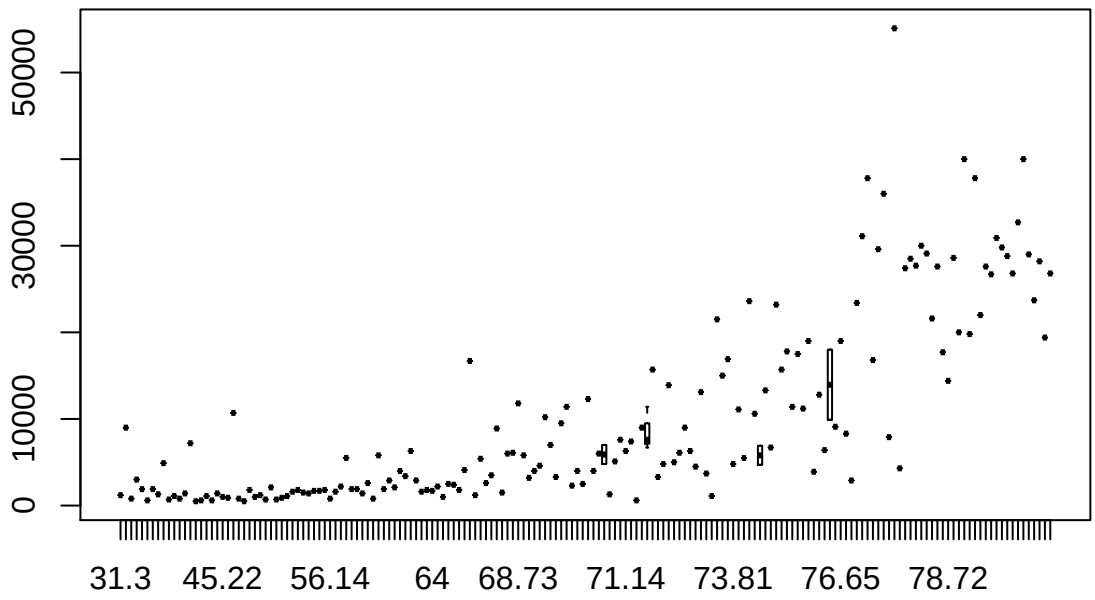
```
## 43   6000 67.96 68.6050 69.250 69.8950 70.54 69.25000  1.8243355 2       0
## 44   6100 68.43 69.3950 70.360 71.3250 72.29 70.36000  2.7294322 2       0
## 45   6300 63.48 67.3100 71.140 71.7300 72.32 68.98000  4.7995416 3       0
## 46   6400 76.07 76.0700 76.070 76.0700 76.07 76.07000         NA 1       0
## 47   6700 71.80 72.4725 73.145 73.8175 74.49 73.14500  1.9021172 2       0
## 48   6900 74.40 74.4000 74.400 74.4000 74.40 74.40000         NA 1       0
## 49   7000 69.35 69.6675 69.985 70.3025 70.62 69.98500  0.8980256 2       0
## 50   7200 42.77 42.7700 42.770 42.7700 42.77 42.77000         NA 1       0
## 51   7400 71.24 71.2400 71.240 71.2400 71.24 71.24000         NA 1       0
## 52   7600 71.13 71.2975 71.465 71.6325 71.80 71.46500  0.4737615 2       0
## 53   7900 77.53 77.5300 77.530 77.5300 77.53 77.53000         NA 1       0
## 54   8300 76.69 76.6900 76.690 76.6900 76.69 76.69000         NA 1       0
## 55   8900 67.66 67.6600 67.660 67.6600 67.66 67.66000         NA 1       0
## 56   9000 32.26 51.9650 71.670 71.9850 72.30 58.74333 22.9374025 3       0
## 57   9100 76.43 76.4300 76.430 76.4300 76.43 76.43000         NA 1       0
## 58   9500 69.59 69.5900 69.590 69.5900 69.59 69.59000         NA 1       0
## 59   9900 76.35 76.3500 76.350 76.3500 76.35 76.35000         NA 1       0
## 60  10200 69.31 69.3100 69.310 69.3100 69.31 69.31000         NA 1       0
## 61  10600 74.37 74.3700 74.370 74.3700 74.37 74.37000         NA 1       0
## 62  10700 46.56 46.5600 46.560 46.5600 46.56 46.56000         NA 1       0
## 63  11100 73.91 73.9100 73.910 73.9100 73.91 73.91000         NA 1       0
## 64  11200 75.48 75.4800 75.480 75.4800 75.48 75.48000         NA 1       0
## 65  11400 69.60 70.7000 71.800 73.5900 75.38 72.26000  2.9173275 3       0
## 66  11800 68.73 68.7300 68.730 68.7300 68.73 68.73000         NA 1       0
## 67  12300 70.31 70.3100 70.310 70.3100 70.31 70.31000         NA 1       0
## 68  12800 75.87 75.8700 75.870 75.8700 75.87 75.87000         NA 1       0
## 69  13100 72.58 72.5800 72.580 72.5800 72.58 72.58000         NA 1       0
## 70  13300 74.43 74.4300 74.430 74.4300 74.43 74.43000         NA 1       0
## 71  13900 72.17 72.1700 72.170 72.1700 72.17 72.17000         NA 1       0
## 72  14400 78.72 78.7200 78.720 78.7200 78.72 78.72000         NA 1       0
## 73  15000 73.52 73.5200 73.520 73.5200 73.52 73.52000         NA 1       0
## 74  15700 71.84 72.6750 73.510 74.3450 75.18 73.51000  2.3617366 2       0
## 75  16700 65.71 65.7100 65.710 65.7100 65.71 65.71000         NA 1       0
## 76  16800 77.26 77.2600 77.260 77.2600 77.26 77.26000         NA 1       0
## 77  16900 73.72 73.7200 73.720 73.7200 73.72 73.72000         NA 1       0
## 78  17500 75.45 75.4500 75.450 75.4500 75.45 75.45000         NA 1       0
## 79  17700 78.43 78.4300 78.430 78.4300 78.43 78.43000         NA 1       0
## 80  17800 75.36 75.3600 75.360 75.3600 75.36 75.36000         NA 1       0
## 81  18000 76.35 76.3500 76.350 76.3500 76.35 76.35000         NA 1       0
## 82  19000 75.51 75.7950 76.080 76.3650 76.65 76.08000  0.8061017 2       0
## 83  19400 81.87 81.8700 81.870 81.8700 81.87 81.87000         NA 1       0
## 84  19800 79.02 79.0200 79.020 79.0200 79.02 79.02000         NA 1       0
## 85  20000 78.89 78.8900 78.890 78.8900 78.89 78.89000         NA 1       0
## 86  21500 73.14 73.1400 73.140 73.1400 73.14 73.14000         NA 1       0
## 87  21600 78.32 78.3200 78.320 78.3200 78.32 78.32000         NA 1       0
## 88  22000 79.23 79.2300 79.230 79.2300 79.23 79.23000         NA 1       0
## 89  23200 74.75 74.7500 74.750 74.7500 74.75 74.75000         NA 1       0
## 90  23400 76.87 76.8700 76.870 76.8700 76.87 76.87000         NA 1       0
## 91  23600 74.30 74.3000 74.300 74.3000 74.30 74.30000         NA 1       0
## 92  23700 80.42 80.4200 80.420 80.4200 80.42 80.42000         NA 1       0
## 93  26700 79.40 79.4000 79.400 79.4000 79.40 79.40000         NA 1       0
## 94  26800 79.97 80.8500 81.730 82.6100 83.49 81.73000  2.4890159 2       0
## 95  27400 77.92 77.9200 77.920 77.9200 77.92 77.92000         NA 1       0
## 96  27600 78.42 78.6350 78.850 79.0650 79.28 78.85000  0.6081118 2       0
```

```
## 97  27700 78.16 78.1600 78.160 78.1600 78.16 78.16000         NA 1       0
## 98  28200 80.93 80.9300 80.930 80.9300 80.93 80.93000         NA 1       0
## 99  28500 77.98 77.9800 77.980 77.9800 77.98 77.98000         NA 1       0
## 100 28600 78.74 78.7400 78.740 78.7400 78.74 78.74000         NA 1       0
## 101 28800 79.93 79.9300 79.930 79.9300 79.93 79.93000         NA 1       0
## 102 29000 80.13 80.1300 80.130 80.1300 80.13 80.13000         NA 1       0
## 103 29100 78.29 78.2900 78.290 78.2900 78.29 78.29000         NA 1       0
## 104 29600 77.35 77.3500 77.350 77.3500 77.35 77.35000         NA 1       0
## 105 29800 79.83 79.8300 79.830 79.8300 79.83 79.83000         NA 1       0
## 106 30000 78.17 78.1700 78.170 78.1700 78.17 78.17000         NA 1       0
## 107 30900 79.80 79.8000 79.800 79.8000 79.80 79.80000         NA 1       0
## 108 31100 77.10 77.1000 77.100 77.1000 77.10 77.10000         NA 1       0
## 109 32700 79.99 79.9900 79.990 79.9900 79.99 79.99000         NA 1       0
## 110 36000 77.41 77.4100 77.410 77.4100 77.41 77.41000         NA 1       0
## 111 37800 77.14 77.6275 78.115 78.6025 79.09 78.11500  1.3788582 2       0
## 112 40000 78.93 79.2075 79.485 79.7625 80.04 79.48500  0.7848885 2       0
## 113 55100 77.66 77.6600 77.660 77.6600 77.66 77.66000         NA 1       0
```

```
anova(lm(LEB ~ GDP, data = sheet))
```

```
## Analysis of Variance Table
##
## Response: LEB
##            Df Sum Sq Mean Sq F value    Pr(>F)
## GDP         1  11691   11691  119.27 < 2.2e-16 ***
## Residuals 178  17448      98
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
boxplot(GDP ~ LEB, data = sheet)
```



Introduction

Summary & Visualization

Correlation Test

Regression

Teamwork