This is an R HTML document. When you click the **Knit HTML** button a web page will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

```
who <- read.csv("C:/Users/prera/Downloads/Life_Expectancy_Data.csv")
head(who)
```

```
##       Country Year     Status Life.expectancy Adult.Mortality infant.deaths
## 1 Afghanistan 2015 Developing            65.0             263            62
## 2 Afghanistan 2014 Developing            59.9             271            64
## 3 Afghanistan 2013 Developing            59.9             268            66
## 4 Afghanistan 2012 Developing            59.5             272            69
## 5 Afghanistan 2011 Developing            59.2             275            71
## 6 Afghanistan 2010 Developing            58.8             279            74
##   Alcohol percentage.expenditure Hepatitis.B Measles  BMI under.five.deaths
## 1    0.01              71.279624          65    1154 19.1                83
## 2    0.01              73.523582          62     492 18.6                86
## 3    0.01              73.219243          64     430 18.1                89
## 4    0.01              78.184215          67    2787 17.6                93
## 5    0.01               7.097109          68    3013 17.2                97
## 6    0.01              79.679367          66    1989 16.7               102
##   Polio Total.expenditure Diphtheria HIV.AIDS       GDP Population
## 1     6              8.16         65      0.1 584.25921   33736494
## 2    58              8.18         62      0.1 612.69651     327582
## 3    62              8.13         64      0.1 631.74498   31731688
## 4    67              8.52         67      0.1 669.95900    3696958
## 5    68              7.87         68      0.1  63.53723    2978599
## 6    66              9.20         66      0.1 553.32894    2883167
##   thinness..1.19.years thinness.5.9.years Income.composition.of.resources
## 1                 17.2                17.3                           0.479
## 2                 17.5                17.5                           0.476
## 3                 17.7                17.7                           0.470
## 4                 17.9                18.0                           0.463
## 5                 18.2                18.2                           0.454
## 6                 18.4                18.4                           0.448
##   Schooling
## 1      10.1
## 2      10.0
## 3       9.9
## 4       9.8
## 5       9.5
## 6       9.2
```

```
#############Dimesion of the dataset##############################

dim(who)
```

```
## [1] 2938   22
```

```
##############     TOP 10 DEVELPED & DEVELOPING Countires      ######################

status.of.countries <- who[(who$Status %in% c("Developing") & who$Life.expectancy<55) | (who$Status %in% c("Developed") & who$Life.expectancy>80) ,]
dim(status.of.countries)
```

```
## [1] 509  22
```

```
View(status.of.countries)

class(status.of.countries)
```

```
## [1] "data.frame"
```

```
head(status.of.countries)
```

```
##        Country Year     Status Life.expectancy Adult.Mortality infant.deaths
## 16 Afghanistan 2000 Developing            54.8             321            88
## 49      Angola 2015 Developing            52.4             335            66
## 50      Angola 2014 Developing            51.7             348            67
## 51      Angola 2013 Developing            51.1             355            69
## 53      Angola 2011 Developing            51.0             361            75
## 54      Angola 2010 Developing            49.6             365            78
##    Alcohol percentage.expenditure Hepatitis.B Measles  BMI under.five.deaths
## 16    0.01               10.42496          62    6532 12.2               122
## 49      NA                0.00000          64     118 23.3                98
## 50    8.33               23.96561          64   11699 22.7               101
## 51    8.10               35.95857          77    8523 22.1               105
## 53    8.06              239.89139          72    1449 21.0               115
## 54    7.80              191.65374          77    1190  2.4               121
##    Polio Total.expenditure Diphtheria HIV.AIDS       GDP Population
## 16    24              8.20         24      0.1  114.5600     293756
## 49     7                NA         64      1.9 3695.7937    2785935
## 50    68              3.31         64      2.0  479.3122    2692466
## 51    67              4.26         77      2.3  484.6169    2599834
## 53    73              3.38         71      2.5 4299.1289   24218565
## 54    81              3.39         77      2.5 3529.5348   23369131
##    thinness..1.19.years thinness.5.9.years Income.composition.of.resources
## 16                  2.3                2.5                           0.338
## 49                  8.3                8.2                           0.531
## 50                  8.5                8.3                           0.527
```

```
## 51                 8.6               8.5                          0.523
## 53                 8.9               8.8                          0.495
## 54                 9.1               9.0                          0.488
##    Schooling
## 16       5.5
## 49      11.4
## 50      11.4
## 51      11.4
## 53       9.4
## 54       9.0
```

```
#View(status.of.countries)
WHONew<-status.of.countries
#resting the index values
row.names(WHONew) <- NULL
#View(WHONew)
dim(WHONew)
```

```
## [1] 509  22
```

```
###################### CLEANING THE DATA ####################################
# For 347 rows running the for loop for chechking any NA values and replacing it with the mean of the
# particular country.
for(i in 1:347)
{
  if(is.na(WHONew$Alcohol[i]))
  {
    WHONew$Alcohol[i] <- with(WHONew, mean(WHONew$Alcohol[Country == WHONew$Country[i]], na.rm = TRUE))
  }
}
for(i in 1:347)
{
  if(is.na(WHONew$Hepatitis.B[i]))
  {
    WHONew$Hepatitis.B[i] <- with(WHONew, mean(WHONew$Hepatitis.B[Country == WHONew$Country[i]], na.rm = TRUE))
  }
}
for(i in 1:347)
{
  if(is.na(WHONew$Total.expenditure[i]))
  {
    WHONew$Total.expenditure[i] <- with(WHONew, mean(WHONew$Total.expenditure[Country == WHONew$Country[i]], na.rm = TRUE))
  }
}
dim(WHONew)
```

```
## [1] 509  22
```

```
#View(WHONew)

# Deleting the Empty rows where there is no data present.
new.life<- na.omit(WHONew)
dim(new.life)
```

```
## [1] 285  22
```

```
View(new.life)

############ Finding the summary or the distribution of the Dataset ##################

g<-lm(Life.expectancy~Adult.Mortality + infant.deaths + Alcohol+percentage.expenditure+Hepatitis.B+
        Measles+BMI+under.five.deaths+Polio+Total.expenditure+Diphtheria+HIV.AIDS+GDP+Population+
        thinness..1.19.years+thinness.5.9.years+Income.composition.of.resources+Schooling, data=new.life)
summary(g)
```

```
##
## Call:
## lm(formula = Life.expectancy ~ Adult.Mortality + infant.deaths +
##     Alcohol + percentage.expenditure + Hepatitis.B + Measles +
##     BMI + under.five.deaths + Polio + Total.expenditure + Diphtheria +
##     HIV.AIDS + GDP + Population + thinness..1.19.years + thinness.5.9.years +
##     Income.composition.of.resources + Schooling, data = new.life)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -9.5068 -2.4042 -0.0747  2.5214 10.9258
##
## Coefficients:
##                                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)                     3.984e+01  1.434e+00  27.779  < 2e-16 ***
## Adult.Mortality                -6.817e-03  1.520e-03  -4.485 1.09e-05 ***
## infant.deaths                  -2.507e-01  7.892e-02  -3.176  0.00167 **
## Alcohol                         3.287e-01  1.015e-01   3.238  0.00136 **
## percentage.expenditure          1.938e-04  2.051e-04   0.945  0.34555
## Hepatitis.B                    -2.044e-03  1.184e-02  -0.173  0.86305
## Measles                         2.249e-05  1.604e-05   1.402  0.16214
## BMI                             5.654e-02  1.820e-02   3.106  0.00210 **
## under.five.deaths               1.522e-01  5.022e-02   3.030  0.00268 **
## Polio                           2.062e-02  1.408e-02   1.464  0.14427
## Total.expenditure               9.466e-03  9.669e-02   0.098  0.92208
```

```
## Diphtheria                        4.301e-02  1.517e-02   2.836  0.00493 **
## HIV.AIDS                         -3.061e-01  2.488e-02 -12.301  < 2e-16 ***
## GDP                              -1.133e-05  3.235e-05  -0.350  0.72645
## Population                        8.473e-09  1.163e-08   0.728  0.46714
## thinness..1.19.years             -9.699e-02  1.487e-01  -0.652  0.51482
## thinness.5.9.years               -2.908e-01  1.446e-01  -2.012  0.04528 *
## Income.composition.of.resources   2.697e+01  3.473e+00   7.765 1.77e-13 ***
## Schooling                         4.042e-01  1.724e-01   2.344  0.01979 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.874 on 266 degrees of freedom
## Multiple R-squared:  0.9451, Adjusted R-squared:  0.9414
## F-statistic: 254.4 on 18 and 266 DF,  p-value: < 2.2e-16
```

```
# Trying to remove variables to check how the variation in p values change.

#REMOVING Hepatitis.B ,Total.expenditure,GDP
g1<-lm(Life.expectancy~Adult.Mortality + infant.deaths + Alcohol+percentage.expenditure+
        Measles+BMI+under.five.deaths+Polio+Diphtheria+HIV.AIDS+Population+
        thinness..1.19.years+thinness.5.9.years+Income.composition.of.resources+Schooling, data=new.life)
summary(g1)
```

```
##
## Call:
## lm(formula = Life.expectancy ~ Adult.Mortality + infant.deaths +
##     Alcohol + percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + Population + thinness..1.19.years +
##     thinness.5.9.years + Income.composition.of.resources + Schooling,
##     data = new.life)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -9.5263 -2.4445 -0.0684  2.5559 10.8687
##
## Coefficients:
##                                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)                       3.985e+01  1.309e+00  30.443  < 2e-16 ***
## Adult.Mortality                  -6.810e-03  1.506e-03  -4.522 9.18e-06 ***
## infant.deaths                    -2.495e-01  7.832e-02  -3.185  0.00162 **
## Alcohol                           3.280e-01  1.004e-01   3.266  0.00123 **
## percentage.expenditure            1.318e-04  9.429e-05   1.398  0.16335
## Measles                           2.242e-05  1.590e-05   1.410  0.15984
## BMI                               5.730e-02  1.796e-02   3.191  0.00159 **
## under.five.deaths                 1.515e-01  4.984e-02   3.039  0.00261 **
## Polio                             2.051e-02  1.396e-02   1.470  0.14281
## Diphtheria                        4.216e-02  1.397e-02   3.018  0.00278 **
## HIV.AIDS                         -3.054e-01  2.465e-02 -12.388  < 2e-16 ***
## Population                        8.161e-09  1.152e-08   0.709  0.47914
## thinness..1.19.years             -9.584e-02  1.478e-01  -0.649  0.51718
## thinness.5.9.years               -2.912e-01  1.437e-01  -2.027  0.04368 *
## Income.composition.of.resources   2.686e+01  3.397e+00   7.905 6.94e-14 ***
## Schooling                         4.027e-01  1.677e-01   2.401  0.01701 *
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.853 on 269 degrees of freedom
## Multiple R-squared:  0.9451, Adjusted R-squared:  0.942
## F-statistic: 308.5 on 15 and 269 DF,  p-value: < 2.2e-16
```

```
# Furthur removing thinness..1.19.years and population.
g2<-lm(Life.expectancy~Adult.Mortality + infant.deaths + Alcohol+percentage.expenditure+
         Measles+BMI+under.five.deaths+Polio+Diphtheria+HIV.AIDS+
         +thinness.5.9.years+Income.composition.of.resources+Schooling, data=new.life)
summary(g2)
```

```
##
## Call:
## lm(formula = Life.expectancy ~ Adult.Mortality + infant.deaths +
##     Alcohol + percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + +thinness.5.9.years + Income.composition.of.resources +
##     Schooling, data = new.life)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -9.3939 -2.4969 -0.0995  2.5959 10.8665
##
## Coefficients:
##                                   Estimate Std. Error t value Pr(>|t|)
## (Intercept)                       3.963e+01  1.282e+00  30.911  < 2e-16 ***
## Adult.Mortality                  -6.887e-03  1.500e-03  -4.592 6.74e-06 ***
## infant.deaths                    -2.399e-01  7.751e-02  -3.095 0.002173 **
## Alcohol                           3.329e-01  1.000e-01   3.328 0.000996 ***
## percentage.expenditure            1.319e-04  9.410e-05   1.401 0.162302
## Measles                           2.265e-05  1.586e-05   1.428 0.154432
## BMI                               5.915e-02  1.782e-02   3.320 0.001024 **
## under.five.deaths                 1.460e-01  4.941e-02   2.955 0.003398 **
## Polio                             2.085e-02  1.393e-02   1.497 0.135506
## Diphtheria                        4.196e-02  1.394e-02   3.011 0.002847 **
## HIV.AIDS                         -3.060e-01  2.459e-02 -12.443  < 2e-16 ***
## thinness.5.9.years               -3.639e-01  8.363e-02  -4.352 1.92e-05 ***
## Income.composition.of.resources   2.710e+01  3.380e+00   8.019 3.23e-14 ***
## Schooling                         3.974e-01  1.672e-01   2.376 0.018203 *
## ---
```

```
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.846 on 271 degrees of freedom
## Multiple R-squared:  0.9449, Adjusted R-squared:  0.9422
## F-statistic: 357.3 on 13 and 271 DF,  p-value: < 2.2e-16
```

```
# Furthur removing percentage.expenditure and Polio,  Measles .
g3<-lm(Life.expectancy~Adult.Mortality + infant.deaths + Alcohol+
        +BMI+under.five.deaths+Diphtheria+HIV.AIDS+
         +thinness.5.9.years+Income.composition.of.resources+Schooling, data=new.life)
summary(g3)
```

```
##
## Call:
## lm(formula = Life.expectancy ~ Adult.Mortality + infant.deaths +
##     Alcohol + +BMI + under.five.deaths + Diphtheria + HIV.AIDS +
##     +thinness.5.9.years + Income.composition.of.resources + Schooling,
##     data = new.life)
##
## Residuals:
##     Min      1Q  Median      3Q     Max
## -9.5333 -2.7459  0.0533  2.5279 10.4413
##
## Coefficients:
##                                  Estimate Std. Error t value Pr(>|t|)
## (Intercept)                     39.914810   1.244281  32.079  < 2e-16 ***
## Adult.Mortality                 -0.007450   0.001486  -5.014 9.57e-07 ***
## infant.deaths                   -0.279079   0.074309  -3.756 0.000211 ***
## Alcohol                          0.375054   0.098635   3.802 0.000177 ***
## BMI                              0.057549   0.017883   3.218 0.001446 **
## under.five.deaths                0.171609   0.047129   3.641 0.000324 ***
## Diphtheria                       0.053859   0.011720   4.596 6.59e-06 ***
## HIV.AIDS                        -0.301955   0.024430 -12.360  < 2e-16 ***
## thinness.5.9.years              -0.369778   0.083761  -4.415 1.46e-05 ***
## Income.composition.of.resources 26.371759   3.268480   8.069 2.25e-14 ***
## Schooling                        0.482145   0.161845   2.979 0.003151 **
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 3.867 on 274 degrees of freedom
## Multiple R-squared:  0.9436, Adjusted R-squared:  0.9416
## F-statistic: 458.7 on 10 and 274 DF,  p-value: < 2.2e-16
```

```
coefficients(g)
```

```
##                     (Intercept)                  Adult.Mortality
##                    3.984424e+01                    -6.816542e-03
##                   infant.deaths                          Alcohol
##                    -2.506791e-01                     3.287233e-01
##          percentage.expenditure                      Hepatitis.B
##                    1.938262e-04                    -2.044282e-03
##                         Measles                             BMI
##                    2.248900e-05                     5.653589e-02
##                under.five.deaths                           Polio
##                    1.521782e-01                     2.061924e-02
##               Total.expenditure                       Diphtheria
##                    9.466119e-03                     4.300655e-02
##                        HIV.AIDS                             GDP
##                   -3.060639e-01                    -1.132937e-05
##                      Population              thinness..1.19.years
##                    8.472530e-09                    -9.699313e-02
##              thinness.5.9.years Income.composition.of.resources
##                   -2.908008e-01                     2.697098e+01
##                       Schooling
##                    4.042154e-01
```

You can also embed plots, for example:

```
install.packages("corrplot")
```

```
## Installing package into 'C:/Users/prera/OneDrive/Documents/R/win-library/3.6'
## (as 'lib' is unspecified)
```

```
## Error in contrib.url(repos, "source"): trying to use CRAN without setting a mirror
```

```
library(corrplot)
```

```
## Warning: package 'corrplot' was built under R version 3.6.3
```

```
## corrplot 0.84 loaded
```

```
library(dplyr)
```

```
## Warning: package 'dplyr' was built under R version 3.6.3
```

```
##
## 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
```

```
#install.packages("FFally", lib="/Library/Frameworks/R.framework/Versions/3.5/Resources/library")
#library(FFally)
#install.packages("GGally", lib="/Library/Frameworks/R.framework/Versions/3.5/Resources/library")
#library(GGally)
install.packages("car")
```

```
## Installing package into 'C:/Users/prera/OneDrive/Documents/R/win-library/3.6'
## (as 'lib' is unspecified)
```

```
## Error in contrib.url(repos, "source"): trying to use CRAN without setting a mirror
```

```
library(car)
```

```
## Warning: package 'car' was built under R version 3.6.3
```

```
## Loading required package: carData
```

```
##
## Attaching package: 'car'
```

```
## The following object is masked from 'package:dplyr':
##
##     recode
```

```
#install.packages("MASS")
#library(MASS)
#install.packages("relaimpo", lib="/Library/Frameworks/R.framework/Versions/3.5/Resources/library")
library(relaimpo)
```

```
## Warning: package 'relaimpo' was built under R version 3.6.3
```

```
## Loading required package: MASS
```

```
##
## Attaching package: 'MASS'
```

```
## The following object is masked from 'package:dplyr':
##
##     select
```

```
## Loading required package: boot
```

```
##
## Attaching package: 'boot'
```

```
## The following object is masked from 'package:car':
##
##     logit
```

```
## Loading required package: survey
```

```
## Warning: package 'survey' was built under R version 3.6.3
```

```
## Loading required package: grid
```

```
## Loading required package: Matrix
```

```
## Loading required package: survival
```

```
##
## Attaching package: 'survival'
```

```
## The following object is masked from 'package:boot':
##
##     aml
```

```
##
## Attaching package: 'survey'
```

```
## The following object is masked from 'package:graphics':
##
##     dotchart
```

```
## Loading required package: mitools
```

```
## Warning: package 'mitools' was built under R version 3.6.3
```

```
## This is the global version of package relaimpo.
```

```
## If you are a non-US user, a version with the interesting additional metric pmvd is available
```

```
## from Ulrike Groempings web site at prof.beuth-hochschule.de/groemping.
```

```
#Confidence interval of 95%
confint(g,level=0.95)
```

```
##                                       2.5 %        97.5 %
## (Intercept)                      3.702013e+01  4.266835e+01
## Adult.Mortality                 -9.809068e-03 -3.824015e-03
## infant.deaths                   -4.060615e-01 -9.529658e-02
## Alcohol                          1.288321e-01  5.286145e-01
## percentage.expenditure          -2.100440e-04  5.976965e-04
## Hepatitis.B                     -2.535544e-02  2.126688e-02
## Measles                         -9.097949e-06  5.407596e-05
## BMI                              2.069517e-02  9.237661e-02
## under.five.deaths                5.329851e-02  2.510580e-01
## Polio                           -7.104419e-03  4.834291e-02
## Total.expenditure               -1.809108e-01  1.998430e-01
## Diphtheria                       1.314478e-02  7.286832e-02
## HIV.AIDS                        -3.550517e-01 -2.570762e-01
## GDP                             -7.502176e-05  5.236302e-05
## Population                      -1.443621e-08  3.138127e-08
## thinness..1.19.years            -3.897921e-01  1.958058e-01
## thinness.5.9.years              -5.754404e-01 -6.161144e-03
## Income.composition.of.resources  2.013248e+01  3.380948e+01
## Schooling                        6.474909e-02  7.436818e-01
```

```
# This shows the Z value for each variable and there respective alpha/2 value.
#If the z-value is too big in magnitude i.e either too positive or too negative, it indicates that the corresponding true #regression coefficient is r

# Predicted Values
fitted(g)
```

```
##        1        2        3        4        5        6        7        8
## 46.84184 57.02138 59.37992 59.51341 57.56166 56.52957 53.54491 55.59103
##        9       10       11       12       13       14       15       16
## 55.08862 51.75378 52.33331 51.80899 51.35069 53.43954 55.20681 53.05260
##       17       18       19       20       21       22       23       24
## 85.10116 87.02809 86.78216 86.70344 86.26832 85.88032 85.42839 85.51863
##       25       26       27       28       29       30       31       32
## 84.47453 85.48341 84.59353 81.30105 81.59011 81.66028 83.62390 81.98762
##       33       34       35       36       37       38       39       40
## 83.22299 82.35296 81.74715 81.33777 81.23301 81.76120 83.34623 84.34632
##       41       42       43       44       45       46       47       48
## 83.37151 82.67039 82.91544 59.57486 57.45756 56.11829 54.56409 49.99609
##       49       50       51       52       53       54       55       56
## 47.32142 48.29905 56.14772 45.07980 46.84460 46.84568 44.89673 40.07424
##       57       58       59       60       61       62       63       80
## 52.37057 50.79451 50.42446 49.69058 49.14444 48.83808 48.67605 54.35832
##       81       82       83       84       85       86       87       88
## 56.54428 55.63763 55.43797 54.97313 54.49010 54.22363 56.44102 55.81845
##       89       90       91       92       93       94       95       96
## 51.58534 48.92498 46.98609 48.31001 47.45026 46.41848 46.74579 46.16106
##       97       98       99      100      101      102      103      104
## 45.71667 48.19235 44.64208 43.94940 50.06074 49.29932 46.55974 48.72803
##      105      106      107      108      109      110      111      112
## 51.27141 50.64357 50.68203 48.97055 48.74056 49.20872 46.17495 49.48777
##      113      114      115      116      117      118      119      126
## 48.50068 51.46685 51.27872 50.86899 47.59307 48.07472 39.21653 75.74621
##      127      128      151      152      153      154      155      156
## 77.22561 80.08196 84.08246 83.77212 83.66102 80.51025 80.35370 84.13930
##      185      186      187      188      189      190      191      192
## 84.76797 84.49227 84.13757 81.71256 85.51608 84.62508 81.58597 81.76927
##      193      194      195      196      197      198      199      200
## 81.35519 82.77965 82.54052 82.29922 78.41414 81.49401 81.55658 81.20529
##      201      202      219      220      221      222      223      224
## 81.42302 81.36027 50.59230 50.47857 49.39396 49.73049 46.34809 47.82656
##      225      226      227      228      229      230      231      232
## 55.82257 54.59572 54.44882 54.60202 57.70150 54.61455 52.24061 48.45277
```

```
##      233      234      235      236      237      238      239      240
## 47.31401 45.31589 44.75435 41.33993 43.32327 48.77761 45.20338 45.86185
##      245      246      247      248      249      250      251      252
## 82.15176 80.71178 80.56090 79.59452 83.96030 81.81635 81.80418 54.32378
##      253      254      255      256      257      258      259      260
## 54.68463 51.09413 50.02347 48.27270 48.01505 50.39508 46.33182 45.71777
##      261      262      263      264      265      266      267      268
## 48.92876 43.06329 45.72869 52.42561 53.94989 53.34933 53.80754 55.14702
##      269      270      271      272      273      274      275      276
## 52.63772 80.34911 80.88253 80.17532 79.61632 79.98102 78.31293 77.71059
##      279      280      281      282      283      284      285      286
## 54.49281 52.64566 51.82045 51.93564 52.05215 48.39400 47.23440 46.70066
##      287      288      289      290      293      294      295      296
## 46.91363 46.18850 48.35322 44.76467 82.88642 80.29826 83.75149 80.51250
##      297      298      299      300      301      317      318      319
## 83.12164 83.01564 82.64003 84.29633 83.79133 52.47193 48.59756 54.58073
##      320      321      322      323      324      325      326      327
## 54.56115 52.77440 51.39152 51.00968 48.52265 56.19770 53.47295 44.08850
##      328      329      330      344      345      346      347      348
## 40.04214 45.08676 45.24493 81.64039 78.22387 78.00908 81.33200 81.20471
##      349      350      356      357      358      359      360      361
## 53.93007 55.73750 54.66031 57.57799 54.30784 55.09497 54.25392 53.77292
##      362      363      398      399      400      401      402      403
## 51.76675 53.27080 55.95653 55.04397 53.16039 51.72416 50.30585 48.11600
##      414      415      416      417      418      419      420      421
## 79.72989 83.06329 83.06156 83.36431 82.39174 82.54066 82.57871 81.50588
##      422      423      424      425      426      427      428      429
## 82.50005 78.54292 81.82108 55.48736 53.95236 48.84100 51.15196 46.18358
##      430      431      432      433      434      435      437      438
## 47.29160 46.66720 46.79441 42.94572 43.74044 44.96138 81.85405 81.76416
##      439      440      470      471      472      473      474      491
## 83.16448 83.25780 57.40842 54.46059 54.46121 57.43525 54.37121 51.05793
##      492      498      499      500      501      502      503      504
## 51.90389 55.22099 53.25294 49.72142 48.56056 51.15845 47.80419 43.62507
##      505      506      507      508      509
## 42.48056 40.82864 49.47141 43.61479 40.25209
```

```
residuals(g)
```

```
##           1           2           3           4           5           6
##  7.958164500 -4.621384921 -7.679920348 -8.413406568 -6.561664812 -6.929567795
##           7           8           9          10          11          12
## -4.444908249 -6.891026156 -6.888616798 -4.053782836 -4.933308147 -4.708991952
##          13          14          15          16          17          18
## -4.550688004 -6.939541450 -9.506810684 -7.752604175 -2.301160242 -4.328091627
##          19          20          21          22          23          24
## -4.282161035 -4.403435046 -4.268323274 -3.980315777 -3.728394748 -4.218630032
##          25          26          27          28          29          30
## -3.174529648 -4.283407753 -3.593526143  4.698952547  1.409890716 -0.160282004
##          31          32          33          34          35          36
## -2.223901421 -0.887615174  4.777014612  5.647036551  2.252852505  0.662231360
##          37          38          39          40          41          42
##  2.766990891 -0.761201234 -2.246227394  4.653681543  3.628488523  0.329609096
##          43          44          45          46          47          48
##  0.084559064 -4.774860875 -5.757556357 -8.018288801 -8.164090869 -3.996092576
##          49          50          51          52          53          54
## -0.621417340 -0.499046270 -1.847720895  8.220203777  5.555395570  4.754317034
##          55          56          57          58          59          60
##  6.103265720 10.925763183  2.429431409  3.305494440  2.975540384  2.909422453
##          61          62          63          80          81          82
##  2.755556359  2.661919950  2.623954901  0.441683145 -2.344275906 -2.037627645
##          83          84          85          86          87          88
## -2.137966333 -2.173134214 -2.390104341 -2.423631832 -4.841020911 -4.318452739
##          89          90          91          92          93          94
## -0.185341679  3.575018142  2.913911680  4.689991140  2.349735149  2.781523643
##          95          96          97          98          99         100
##  1.854207477  1.438937266  1.083331946 -1.892348378  1.257920611  1.750596798
##         101         102         103         104         105         106
## -4.360736477 -3.699317224 -0.959744794 -2.728033498  1.828589743  1.956426024
##         107         108         109         110         111         112
##  1.517966624  2.829451709  2.859442481  1.991275442  3.425053810 -0.087770351
##         113         114         115         116         117         118
## -0.000678958 -2.866845369 -2.778720011 -2.468993295  0.506926548 -0.074716901
##         119         126         127         128         151         152
##  8.383467783  9.253791256  5.774387666  0.918042765 -3.082458749  5.227884337
##         153         154         155         156         185         186
##  2.338979410  5.489750935  4.646295820 -3.139303922 -3.367966196 -3.292266261
##         187         188         189         190         191         192
## -3.137569215  3.287437756 -1.516079052  1.374916186  1.114031931  0.730726441
##         193         194         195         196         197         198
##  0.944806139 -0.779647313 -0.540524173 -0.499218298  3.185863764  0.005992562
##         199         200         201         202         219         220
## -0.256583724 -0.005294573  6.576977202  7.639726614  3.507699203  2.521433901
##         221         222         223         224         225         226
##  3.006039677  2.369510285  5.551913053  4.073437425 -2.122566323 -2.495722994
##         227         228         229         230         231         232
## -2.348822713 -2.402016235 -5.401500997 -3.514554025 -2.840607036 -0.652765121
##         233         234         235         236         237         238
## -1.114009515 -0.015893678 -0.254345837  3.460071551  2.176729710 -2.377614057
##         239         240         245         246         247         248
##  2.596619497  3.438154298 -0.151755076  0.988219845  0.839097028  1.505480139
##         249         250         251         252         253         254
##  4.039695454  4.183646694  1.195815181 -0.223783839 -1.784633402  0.405874980
##         255         256         257         258         259         260
## -0.023466270  0.227302253 -0.915046425 -4.395076696 -1.231820163 -1.117766386
```

```
##          261          262          263          264          265          266
## -4.928759267  0.436709299 -2.628693970  1.874391049 -0.349890746 -0.549334210
##          267          268          269          270          271          272
## -1.807542781 -3.947018710 -2.837716070  1.350885367  0.517473039  0.924683591
##          273          274          275          276          279          280
##  1.383675876  7.018977916  4.687069591  4.289410115  0.307189895  1.654340553
##          281          282          283          284          285          286
##  2.179547298  1.864356160  1.147846487  3.705997533  3.965602963  7.299337631
##          287          288          289          290          293          294
##  4.086374542  3.611502300  1.146779948  4.235332226 -0.986421889  1.401741392
##          295          296          297          298          299          300
## -2.351485030  0.587498897 -2.021638001  4.984359993  3.359971849 -1.296327524
##          301          317          318          319          320          321
## -1.791325251  2.028069258  5.002442439 -1.380729646 -1.861147347 -0.474399643
##          322          323          324          325          326          327
##  0.608483797  0.590318008  1.277353697 -6.997697292 -4.972946366  4.011497278
##          328          329          330          344          345          346
##  7.657855169  2.313239858  1.855066094 -0.540389095 10.776127267  7.990920010
##          347          348          349          350          356          357
##  1.668000061  0.795288720 -0.530067494 -3.737497963 -6.560310895 -3.577992994
##          358          359          360          361          362          363
## -4.607838232 -6.194971976 -6.153924148 -6.672917623 -5.566754474 -7.970803114
##          398          399          400          401          402          403
## -1.456526988 -1.043972821  0.639608263  1.975840542  3.694153011  6.783996509
##          414          415          416          417          418          419
##  2.870113538 -0.663286070 -1.061558282 -1.264313778 -0.491741810 -0.940660263
##          420          421          422          423          424          425
## -1.278713173  7.494123845  5.499949095  2.457075178 -0.821082724 -1.887355767
##          426          427          428          429          430          431
## -1.352357390  2.559000097 -1.151958923  1.616424409 -1.291596407 -1.067202050
##          432          433          434          435          437          438
## -0.894405922  3.454278933  3.359563386  3.438616090  0.445946274  0.135844029
##          439          440          470          471          472          473
## -1.464475964 -1.557801613 -2.508417442 -1.260591451 -3.161211958 -6.435247456
##          474          491          492          498          499          500
## -5.571210304  1.542068273 -2.603887363 -0.320992415 -0.852944006  0.278583199
##          501          502          503          504          505          506
## -0.360556592 -4.558453733 -2.404189163  0.974926721  1.819444239  3.671359321
##          507          508          509
## -4.671413711  1.685214459  5.747914051
```

```
#we get the actual - estimated values

#Anova Table
anova(g)
```

```
## Analysis of Variance Table
##
## Response: Life.expectancy
##                                  Df  Sum Sq Mean Sq   F value    Pr(>F)
## Adult.Mortality                   1 29908.5 29908.5 1992.9582 < 2.2e-16 ***
## infant.deaths                     1  5747.3  5747.3  382.9730 < 2.2e-16 ***
## Alcohol                           1 18169.8 18169.8 1210.7480 < 2.2e-16 ***
## percentage.expenditure            1  1138.8  1138.8   75.8869 3.261e-16 ***
## Hepatitis.B                       1   472.7   472.7   31.4974 5.011e-08 ***
## Measles                           1   159.0   159.0   10.5977 0.0012790 **
## BMI                               1  4012.2  4012.2  267.3545 < 2.2e-16 ***
## under.five.deaths                 1   166.8   166.8   11.1139 0.0009786 ***
## Polio                             1   341.6   341.6   22.7627 3.026e-06 ***
## Total.expenditure                 1     4.8     4.8    0.3184 0.5730374
## Diphtheria                        1   389.1   389.1   25.9299 6.710e-07 ***
## HIV.AIDS                          1  3885.6  3885.6  258.9183 < 2.2e-16 ***
## GDP                               1   158.6   158.6   10.5670 0.0012996 **
## Population                        1     8.2     8.2    0.5455 0.4608286
## thinness..1.19.years              1   757.6   757.6   50.4808 1.103e-11 ***
## thinness.5.9.years                1   142.0   142.0    9.4610 0.0023177 **
## Income.composition.of.resources   1  3167.1  3167.1  211.0397 < 2.2e-16 ***
## Schooling                         1    82.5    82.5    5.4965 0.0197900 *
## Residuals                       266  3991.9    15.0
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```
# sum of squares from diff variables is seen in anova
# We can also observe that the Total.expenditure and population are not significant.
# We can remove them one by one to check how the significance changes.
# This is done in the later steps below while comparing the models.

u=vcov(g)
head(u)
```

```
##                         (Intercept) Adult.Mortality infant.deaths
## (Intercept)             2.0573389375   -5.447096e-04  3.017358e-02
## Adult.Mortality        -0.0005447096    2.310036e-06 -1.944034e-05
## infant.deaths           0.0301735778   -1.944034e-05  6.227976e-03
## Alcohol                 0.0376938855    1.262335e-05  1.550434e-03
## percentage.expenditure -0.0000026198   -3.978024e-09 -4.413099e-07
## Hepatitis.B            -0.0048281917    3.120688e-07 -3.131143e-05
##                              Alcohol percentage.expenditure   Hepatitis.B
## (Intercept)             3.769389e-02          -2.619800e-06 -4.828192e-03
## Adult.Mortality         1.262335e-05          -3.978024e-09  3.120688e-07
## infant.deaths           1.550434e-03          -4.413099e-07 -3.131143e-05
## Alcohol                 1.030695e-02          -2.129342e-06 -8.812770e-05
## percentage.expenditure -2.129342e-06           4.207524e-08 -7.252558e-08
## Hepatitis.B            -8.812770e-05          -7.252558e-08  1.401750e-04
```

```
##                                  Measles           BMI under.five.deaths
## (Intercept)                  -1.975827e-07  1.420682e-03     -2.011208e-02
## Adult.Mortality               3.832000e-09  6.356172e-07      1.232765e-05
## infant.deaths                 3.706075e-07  2.253626e-04     -3.959481e-03
## Alcohol                      -2.901374e-08 -5.128701e-05     -1.040633e-03
## percentage.expenditure -3.304684e-11 -1.963323e-07      2.761712e-07
## Hepatitis.B                   5.870974e-09  4.112517e-06      2.189248e-05
##                                     Polio Total.expenditure    Diphtheria
## (Intercept)                  -3.935133e-03     -3.579131e-02 -6.057946e-04
## Adult.Mortality               1.489007e-06      1.206840e-05 -2.443596e-06
## infant.deaths                 2.435565e-05     -5.690250e-05 -9.916741e-05
## Alcohol                      -1.746198e-04      6.921171e-04 -7.668151e-05
## percentage.expenditure        3.929255e-08     -1.783229e-06  9.220755e-08
## Hepatitis.B                  -1.142866e-05     -3.391369e-05 -6.522888e-05
##                                   HIV.AIDS           GDP    Population
## (Intercept)                   1.579233e-04  2.575086e-06  1.404661e-09
## Adult.Mortality              -1.145347e-05  1.468177e-09  1.403458e-13
## infant.deaths                -2.435049e-04  1.434009e-07 -9.958302e-11
## Alcohol                       8.955913e-05  1.068512e-07 -7.708980e-11
## percentage.expenditure -3.944899e-08 -5.872791e-09  1.840433e-13
## Hepatitis.B                   2.342872e-05  1.771942e-08 -4.437224e-12
##                          thinness..1.19.years thinness.5.9.years
## (Intercept)                      -3.796078e-02      -1.477681e-02
## Adult.Mortality                  -1.364003e-05      -2.703341e-05
## infant.deaths                     8.562847e-04      -3.722237e-04
## Alcohol                           9.854041e-05      -1.058195e-03
## percentage.expenditure           -5.981797e-08       2.267857e-07
## Hepatitis.B                       7.340878e-05      -5.934676e-05
##                          Income.composition.of.resources     Schooling
## (Intercept)                                -1.864435e+00  1.406065e-02
## Adult.Mortality                             7.492163e-04 -2.780684e-05
## infant.deaths                              -7.147600e-02  7.604053e-04
## Alcohol                                    -7.843573e-02 -1.923968e-03
## percentage.expenditure                      1.092345e-05  2.077375e-06
## Hepatitis.B                                 2.629962e-03 -1.002535e-04
```

```
v=head(cov2cor(vcov(g)))
head(v)
```

```
##                       (Intercept) Adult.Mortality infant.deaths     Alcohol
## (Intercept)            1.000000000     -0.24986345    0.26656334  0.25885284
## Adult.Mortality       -0.249863454      1.00000000   -0.16207683  0.08180885
## infant.deaths          0.266563339     -0.16207683    1.00000000  0.19351510
## Alcohol                0.258852845      0.08180885    0.19351510  1.00000000
## percentage.expenditure -0.008904345     -0.01275982   -0.02726195 -0.10225090
## Hepatitis.B           -0.284312712      0.01734226   -0.03351153 -0.07331825
##                       percentage.expenditure Hepatitis.B      Measles
## (Intercept)                      -0.008904345 -0.28431271 -0.008586515
## Adult.Mortality                  -0.012759823  0.01734226  0.157158156
## infant.deaths                    -0.027261947 -0.03351153  0.292726228
## Alcohol                          -0.102250896 -0.07331825 -0.017813923
## percentage.expenditure            1.000000000 -0.02986363 -0.010042401
## Hepatitis.B                      -0.029863630  1.00000000  0.030909764
##                                 BMI under.five.deaths       Polio
## (Intercept)                  0.05441215       -0.27920643 -0.19484285
## Adult.Mortality              0.02297408        0.16150726  0.06957695
## infant.deaths                0.15687737       -0.99904742  0.02191817
## Alcohol                     -0.02775199       -0.20410511 -0.12215361
## percentage.expenditure      -0.05258119        0.02680936  0.01360426
## Hepatitis.B                  0.01908202        0.03681975 -0.06855481
##                       Total.expenditure  Diphtheria     HIV.AIDS         GDP
## (Intercept)              -0.258070855 -0.02784746  0.004425213  0.05549833
## Adult.Mortality           0.082121093 -0.10600666 -0.302878536  0.02986139
## infant.deaths            -0.007457139 -0.08285307 -0.124015313  0.05617196
## Alcohol                   0.070506456 -0.04980108  0.035455679  0.03253534
## percentage.expenditure   -0.089910045  0.02963919 -0.007729716 -0.88505917
## Hepatitis.B              -0.029624708 -0.36326011  0.079534267  0.04626530
##                        Population thinness..1.19.years thinness.5.9.years
## (Intercept)            0.084167834         -0.177967730       -0.071262474
## Adult.Mortality        0.007936291         -0.060348283       -0.123033852
## infant.deaths         -0.108452426          0.072963183       -0.032625994
## Alcohol               -0.065261845          0.006526921       -0.072099794
## percentage.expenditure  0.077114150         -0.001960999        0.007647783
## Hepatitis.B           -0.032210951          0.041693828       -0.034673282
##                       Income.composition.of.resources   Schooling
## (Intercept)                                -0.37425027  0.05685703
## Adult.Mortality                             0.14192718 -0.10611433
## infant.deaths                              -0.26076812  0.05588607
## Alcohol                                    -0.22244193 -0.10991692
## percentage.expenditure                      0.01533255  0.05873993
## Hepatitis.B                                 0.06395609 -0.04911295
```

```
temp <- influence.measures(g) # the one with the stars
temp
```

```
## Influence measures of
##       lm(formula = Life.expectancy ~ Adult.Mortality + infant.deaths +      Alcohol + percentage.expenditure + Hepatitis.B + Measles +      BMI + u
##
##        dfb.1_  dfb.Ad.M  dfb.inf.  dfb.Alch  dfb.prc.  dfb.Hp.B  dfb.Msls
## 1    3.00e-01  4.66e-02  5.36e-01  3.03e-02 -3.57e-02  1.11e-01  2.48e-01
## 2   -8.54e-02  2.37e-02 -1.13e-01 -5.98e-02  2.98e-02 -4.95e-04  1.66e-02
## 3   -7.67e-02 -3.04e-02 -2.08e-01 -1.78e-01  2.10e-03  3.86e-02 -7.19e-02
## 4   -2.96e-02 -2.55e-02 -1.77e-01 -1.69e-01  2.66e-03 -5.72e-03 -3.55e-02
## 5   -4.14e-02 -2.92e-02 -1.06e-01 -1.40e-01  2.85e-02  5.68e-03  3.58e-03
```

```
## 6    9.18e-04 -3.25e-02 -5.16e-02 -1.29e-01  1.52e-02 -2.87e-03  7.43e-03
## 7   -2.48e-02 -6.04e-02 -5.66e-02 -9.02e-02  2.35e-02 -7.69e-02 -2.36e-02
## 8    1.58e-03 -4.18e-02 -2.52e-02 -1.15e-01  3.37e-02  5.93e-04  2.37e-02
## 9    2.55e-02 -4.18e-02 -1.40e-02 -7.31e-02  2.17e-02 -1.01e-02  1.89e-02
## 10  -8.96e-03 -3.48e-02 -1.30e-02 -6.35e-02  1.06e-02 -6.56e-02  1.75e-03
## 11  -9.27e-02 -7.68e-02  6.76e-02 -4.07e-02  9.73e-03 -6.03e-02  1.52e-02
## 12  -1.29e-01 -1.32e-01  5.97e-02 -4.92e-02  1.09e-02 -1.50e-01 -3.20e-03
## 13  -1.15e-01 -1.32e-01  7.14e-02 -4.97e-02  2.00e-02 -1.50e-01 -8.12e-03
## 14  -1.20e-01 -1.94e-01  1.25e-01  8.92e-03  7.24e-03 -1.10e-01 -8.12e-02
## 15  -2.08e-01  7.72e-02  1.34e-01  4.63e-02  1.22e-02 -1.51e-01 -3.79e-02
## 16  -2.43e-01  9.40e-02  1.53e-01  3.88e-02  1.12e-02 -1.89e-01  4.04e-02
## 17  -1.60e-03  1.68e-05 -1.56e-02 -1.24e-02  3.05e-01 -2.42e-02  2.20e-02
## 18   5.35e-03  3.25e-02 -1.93e-02  5.87e-02 -1.40e-01 -1.83e-02  4.07e-02
## 19  -4.77e-04  4.95e-03 -9.52e-03  5.87e-02 -1.56e-01 -1.87e-02  4.03e-02
## 20  -1.10e-03  4.23e-03 -1.04e-02  5.37e-02 -1.59e-01 -1.71e-02  3.92e-02
## 21   5.94e-03  3.30e-03 -1.76e-02  3.32e-02 -1.47e-01 -2.15e-02  3.10e-02
## 22   9.69e-03  2.20e-03 -1.42e-02  1.32e-02 -9.51e-02 -1.93e-02  2.35e-02
## 23   1.60e-02 -1.37e-04 -1.07e-02  4.19e-04 -6.35e-02 -2.34e-02  1.52e-02
## 24   7.67e-03  9.37e-04 -1.51e-02  3.07e-03 -9.83e-02 -2.72e-02  2.12e-02
## 25   2.25e-02  4.75e-03  8.67e-03 -1.65e-02 -1.01e-02 -1.69e-02  1.47e-02
## 26   1.48e-02  9.90e-03  1.32e-03  1.53e-02 -7.77e-02 -2.78e-02  4.30e-02
## 27   2.30e-02  1.30e-02  7.46e-03 -8.67e-03 -1.21e-02 -1.95e-02  3.35e-02
## 28  -4.96e-02 -3.19e-02 -4.89e-02  7.25e-03  3.76e-02  1.99e-02 -3.95e-02
## 29  -1.05e-02 -8.41e-03 -1.25e-02 -1.25e-03  2.08e-02  6.26e-03 -1.27e-02
## 30   3.31e-05 -2.81e-04 -7.63e-04 -4.19e-03  1.55e-02 -1.57e-03 -5.50e-04
## 31   1.79e-02 -6.27e-03 -3.49e-03 -3.27e-02 -3.00e-02 -1.58e-02 -7.47e-03
## 32   1.11e-02 -8.41e-04  1.77e-03 -1.84e-02  2.59e-03 -4.05e-03 -4.69e-03
## 33  -1.75e-02 -1.64e-02  1.44e-02  7.81e-02  6.03e-02  2.24e-02  1.28e-02
## 34   7.06e-02 -9.02e-03  1.52e-02  6.66e-02  1.05e-01  3.25e-02 -5.74e-03
## 35  -5.90e-03  8.64e-03  7.11e-03  4.33e-02  1.96e-02  6.40e-03  1.02e-02
## 36  -1.44e-03  2.47e-03  9.95e-04  8.85e-03  1.10e-02  1.19e-03  3.05e-03
## 37   4.63e-02 -2.60e-03  1.01e-02  4.01e-02  5.15e-02  1.02e-02  1.17e-03
## 38  -1.43e-02  6.54e-03 -3.91e-03 -1.36e-02 -1.19e-02 -2.91e-03  1.38e-03
## 39  -7.54e-03  5.21e-03  1.10e-02 -2.04e-02  1.13e-02 -1.76e-02  6.42e-03
## 40   4.62e-02  2.37e-03  3.71e-03  6.30e-02  4.43e-02  4.17e-02 -1.57e-02
## 41   1.70e-02 -5.25e-03 -1.54e-02  4.87e-02  1.37e-02  2.66e-02 -8.49e-03
## 42   6.34e-04 -7.41e-04 -2.17e-03  5.78e-04  1.56e-03  2.69e-03 -6.17e-04
## 43   3.33e-04 -8.13e-04 -3.54e-04  1.91e-04  3.63e-04  6.75e-04 -1.76e-04
## 44   9.94e-02 -5.83e-02  1.85e-02 -5.00e-03  3.73e-02 -3.82e-02 -9.02e-03
## 45   4.55e-02 -1.34e-01  7.86e-02 -6.85e-03  2.10e-03 -2.38e-02 -1.59e-02
## 46   5.48e-02 -2.93e-01  1.40e-01  1.15e-02  1.28e-02 -6.68e-02 -3.25e-02
## 47  -1.25e-01 -3.16e-01  1.29e-01 -7.60e-02  4.46e-03  5.20e-01 -8.39e-03
## 48   1.20e-01 -7.75e-02  4.94e-02 -2.12e-02  3.52e-04 -2.13e-02  1.39e-03
## 49   2.05e-02 -8.61e-03  1.20e-02  7.10e-04 -1.02e-03 -3.18e-03  6.47e-05
## 50   1.46e-02 -4.65e-03  6.23e-03  1.71e-03  3.89e-04 -2.80e-03 -5.37e-04
## 51  -2.09e-02  3.89e-02  7.58e-02  1.81e-03  1.32e-04  1.41e-02  2.98e-02
## 52   2.82e-01  1.45e-02 -2.37e-01  2.04e-01 -2.98e-02 -8.92e-02 -2.94e-01
## 53   2.13e-01  7.76e-02 -1.40e-01  1.56e-01 -2.21e-02 -2.00e-02 -1.63e-01
## 54   1.85e-01  7.26e-02 -1.40e-01  1.27e-01 -1.31e-02 -1.61e-02 -1.31e-01
## 55   1.44e-01  6.40e-02 -1.65e-01  1.95e-01 -2.67e-02  4.48e-02 -1.98e-01
## 56   1.69e-01 -4.77e-03 -3.03e-01  2.13e-01 -4.42e-02  1.67e-01 -2.66e-01
## 57   2.62e-02 -7.77e-03  3.35e-02  1.72e-02  5.81e-03  2.22e-02 -1.09e-02
## 58  -1.31e-02  1.34e-02  4.73e-02  5.21e-02 -1.63e-02  1.62e-02  1.58e-02
## 59   5.82e-03  1.44e-02  3.62e-02  6.98e-02 -1.44e-02  9.32e-03  8.02e-03
## 60   2.29e-02  1.35e-02  2.70e-02  7.16e-02 -1.08e-02  7.57e-03  3.39e-03
## 61   2.54e-02  1.38e-02  2.52e-02  6.97e-02 -9.16e-03  2.65e-02  6.20e-03
## 62   2.37e-02  1.46e-02  1.75e-02  7.04e-02 -9.42e-03  2.74e-02  6.51e-03
## 63   2.66e-02  1.10e-02  2.21e-02  7.23e-02 -9.18e-03  2.69e-02  3.36e-03
## 80   9.32e-03  7.35e-03  4.45e-03  7.60e-03 -9.12e-05 -1.35e-02  9.01e-04
## 81  -2.60e-04 -1.93e-02 -1.54e-02 -2.28e-02  5.25e-03 -1.08e-02 -5.40e-04
## 82  -1.78e-03 -1.98e-02 -5.64e-03 -1.44e-02 -4.29e-04 -8.29e-03 -1.59e-03
## 83  -1.49e-03 -1.90e-02 -2.43e-03 -1.13e-02 -1.39e-03 -8.35e-03  8.29e-04
## 84  -2.17e-02  5.32e-02 -1.98e-02 -8.48e-03  5.62e-03 -6.90e-02  5.50e-03
## 85  -1.49e-03 -2.55e-02  5.65e-03 -8.53e-03 -3.10e-04  7.52e-03  2.47e-03
## 86  -3.13e-03 -2.47e-02  3.61e-03 -7.08e-03 -6.28e-04  8.42e-03  3.99e-04
## 87  -4.30e-02  1.30e-01  1.06e-03  3.20e-03 -8.45e-04  2.96e-03  3.82e-02
## 88  -4.53e-02  9.90e-02 -1.88e-02  1.02e-03  3.59e-04 -8.31e-03 -8.18e-02
## 89  -9.85e-05 -1.99e-03  1.23e-03 -2.17e-04 -2.77e-04 -5.08e-04 -2.92e-03
## 90   6.64e-02  1.10e-02  5.64e-02 -1.19e-02  1.19e-03 -3.01e-02  1.30e-02
## 91   6.77e-02  2.58e-02  3.55e-02 -2.54e-02  6.11e-03 -4.75e-02  1.84e-02
## 92   5.86e-02  2.90e-02  4.94e-02 -6.48e-02  7.14e-03 -3.35e-02  2.24e-02
## 93   3.08e-02  1.70e-02  1.27e-02 -4.80e-03  5.40e-03 -1.93e-02  1.21e-02
## 94   4.20e-02  1.69e-02  3.06e-02  7.88e-04  4.89e-03 -2.54e-02  1.73e-02
## 95   3.03e-02  1.33e-02  2.15e-02 -1.22e-03  8.28e-04 -1.76e-02  9.22e-03
## 96   2.09e-02  1.28e-02  1.54e-02 -5.82e-04  9.67e-04 -1.56e-02  7.43e-03
## 97   1.39e-02  1.10e-02  7.86e-03 -5.39e-04  5.09e-04 -1.27e-02  4.44e-03
## 98  -4.75e-02  7.05e-02 -2.80e-02  7.38e-03 -2.25e-03  2.60e-02  6.61e-03
## 99   1.54e-02  1.20e-02  8.29e-03  1.11e-04  4.92e-04 -1.72e-02  5.47e-03
## 100  2.22e-02  1.61e-02  1.23e-02  1.40e-03  4.50e-04 -2.13e-02  9.74e-03
## 101 -2.09e-01  9.92e-02 -4.65e-02 -1.27e-02 -1.97e-03  5.43e-02 -3.69e-03
## 102 -1.80e-01  8.44e-02 -5.37e-02 -1.62e-02  6.14e-04  4.04e-02 -1.14e-02
## 103 -5.66e-02  2.15e-02 -1.77e-02 -1.12e-02  1.83e-03 -7.11e-03 -7.06e-03
## 104 -1.30e-01  6.21e-02 -2.74e-02 -1.22e-02  7.12e-04  2.08e-02 -1.24e-02
## 105  4.78e-03  8.44e-03 -2.22e-02 -3.64e-02  2.14e-03 -1.28e-02 -7.28e-03
## 106  1.33e-02  1.02e-02 -3.16e-02 -4.41e-02  8.12e-03 -2.02e-02 -9.46e-03
## 107  1.10e-02  7.83e-03 -2.38e-02 -2.82e-02  4.69e-03 -1.50e-02 -9.67e-03
## 108  4.21e-02  2.46e-02 -4.05e-02 -4.54e-02  6.83e-03 -7.32e-02 -1.68e-02
## 109  4.66e-02  1.07e-02 -4.70e-02 -3.78e-02  6.15e-03 -2.61e-02  3.59e-03
## 110  1.22e-02  7.26e-03 -4.12e-02 -3.64e-02  4.35e-03 -1.77e-02 -1.71e-02
## 111  6.88e-02  1.77e-02 -6.97e-02 -3.50e-02  5.99e-03 -5.80e-02 -2.87e-02
## 112 -2.93e-03 -1.97e-03  1.91e-03  6.32e-04 -1.31e-04  1.07e-03  4.13e-04
## 113 -2.06e-05 -2.00e-05  1.73e-05  5.59e-06 -3.68e-07  2.29e-06  1.36e-06
## 114 -1.14e-01  4.18e-02  5.06e-02  2.88e-02 -4.66e-03  3.30e-02  3.10e-02
## 115 -1.04e-01  3.36e-02  4.42e-02  2.59e-02 -1.31e-03  2.65e-02 -2.26e-03
## 116 -9.53e-02  3.08e-02  2.36e-02  1.94e-02  5.96e-04  2.64e-02 -1.82e-02
## 117  4.40e-03 -1.48e-02 -6.38e-03 -6.85e-03 -4.59e-04 -5.53e-03 -1.20e-03
## 118 -9.07e-04  2.36e-03  6.18e-04  1.12e-03  1.40e-05  7.51e-04 -1.19e-03
```

```
## 119  3.89e-01 -3.97e-01 -8.68e-03  2.94e-02 -2.71e-03 -1.58e-01 -2.64e-01
## 126 -1.89e-01 -5.87e-02 -1.92e-01 -2.54e-01  1.34e-02  9.08e-02  8.27e-02
## 127 -1.44e-01 -4.11e-02 -9.35e-02 -3.61e-01  1.95e-02  6.80e-02  4.88e-02
## 128 -6.96e-03 -1.10e-03 -3.23e-03  3.67e-03 -3.11e-03  6.06e-03  6.94e-03
## 151 -1.43e-02 -1.08e-02  1.05e-02 -3.57e-02  2.64e-01 -8.00e-03 -5.59e-03
## 152 -6.48e-02  9.18e-03 -8.98e-03  6.39e-02  7.66e-03 -2.68e-03  2.00e-02
## 153 -2.88e-02  5.01e-03 -3.74e-03  2.73e-02  2.86e-03 -8.71e-04  1.29e-02
## 154  5.39e-03 -2.71e-02 -7.31e-02  6.33e-02  5.95e-02 -1.65e-03  2.22e-03
## 155  6.12e-03 -2.03e-02 -5.91e-02  5.58e-02  5.00e-02 -1.13e-03  1.02e-02
## 156  2.21e-02 -1.19e-02 -2.97e-04 -2.27e-02 -7.08e-02 -5.16e-04 -9.39e-03
## 185  1.49e-02  7.09e-04  2.82e-03 -3.88e-02  4.26e-02 -1.71e-02  9.98e-03
## 186  1.40e-02  3.75e-03  5.05e-03 -2.29e-02 -2.35e-03 -1.44e-02  1.25e-02
## 187  1.46e-02  4.11e-03  4.99e-03 -1.82e-02 -2.36e-03 -1.35e-02  1.27e-02
## 188 -5.40e-03 -6.66e-04 -2.54e-02  3.50e-02  5.47e-04  1.68e-02 -1.25e-02
## 189 -5.39e-03  6.55e-03 -6.24e-03 -1.38e-02  1.98e-02 -1.00e-02  7.91e-03
## 190  1.71e-02  3.05e-03  7.14e-03  2.43e-02 -4.42e-02 -4.54e-02 -5.19e-03
## 191 -1.25e-02 -1.98e-03 -6.56e-03 -8.40e-03 -3.03e-04  6.90e-03  2.60e-03
## 192 -5.47e-03 -9.79e-04  1.12e-03 -9.28e-03 -8.40e-04  6.03e-03  1.93e-03
## 193 -1.03e-02 -2.77e-03 -1.50e-03 -1.04e-02  8.63e-04  6.63e-03  2.54e-03
## 194  2.12e-03  5.32e-03  2.33e-03  1.37e-02 -2.75e-03 -5.10e-03  3.14e-04
## 195  1.60e-03  3.18e-03  9.37e-04  1.15e-02 -3.18e-03 -4.07e-03 -2.89e-03
## 196  1.64e-03  3.45e-03  1.74e-03  1.05e-02 -3.83e-03 -3.56e-03  2.75e-05
## 197 -3.70e-02 -8.80e-03 -3.26e-02 -4.40e-02  1.86e-02  2.38e-02  1.35e-02
## 198 -3.39e-05 -1.23e-05 -3.08e-05 -5.09e-05  2.47e-05  3.23e-05  1.83e-05
## 199  1.03e-03  1.91e-04 -5.62e-04  1.87e-03 -4.45e-05 -2.17e-03 -5.61e-04
## 200  2.14e-05  7.43e-06  2.34e-05  2.41e-05 -1.94e-05 -2.74e-05 -1.08e-05
## 201 -1.01e-03  4.43e-04 -1.34e-02 -4.12e-02  2.61e-02  4.42e-02  8.39e-03
## 202  5.06e-04  7.20e-03 -3.62e-02 -2.96e-02  1.53e-02  5.49e-02  8.01e-03
## 219  1.32e-02 -1.29e-02  4.98e-03 -4.16e-02  8.47e-03  3.22e-02 -1.76e-02
## 220 -2.41e-02  7.19e-03 -1.97e-03 -5.10e-02  7.69e-03  9.85e-03 -4.56e-03
## 221 -3.03e-02  9.22e-03 -1.06e-03 -5.57e-02  7.35e-03  1.24e-02 -4.43e-04
## 222 -3.48e-02  3.72e-03 -8.77e-04 -4.70e-02  5.94e-03  1.98e-02 -1.45e-03
## 223 -4.91e-02  6.27e-02  3.12e-02 -1.00e-01  1.40e-02  1.85e-01  9.07e-02
## 224 -4.99e-03 -7.17e-03 -2.90e-03 -5.54e-02  8.42e-03  3.99e-02  7.35e-02
## 225 -5.52e-03 -2.78e-02  1.34e-02  1.81e-02 -4.85e-04 -3.16e-02  2.16e-03
## 226 -2.10e-02 -2.99e-02  2.37e-02  6.87e-02 -1.54e-02 -4.43e-02  1.01e-02
## 227  2.42e-02 -3.81e-02  2.14e-02  5.30e-02  7.84e-04 -3.60e-02 -6.81e-04
## 228  6.68e-02 -4.53e-02  2.85e-02  7.38e-02 -6.99e-03 -2.16e-02 -8.09e-03
## 229  7.05e-02  1.66e-01  1.66e-03  9.45e-02 -9.20e-03 -3.88e-02  2.84e-02
## 230  1.76e-02 -4.76e-02  4.88e-03  5.40e-02 -1.61e-02 -3.41e-02  2.49e-03
## 231  5.23e-02 -5.06e-02  9.47e-03  2.67e-02  1.79e-03 -2.23e-02 -8.20e-04
## 232  9.87e-03 -8.93e-03 -2.65e-04  4.65e-03  4.26e-04 -5.23e-03 -6.96e-04
## 233 -4.95e-04 -1.77e-02  4.49e-03  4.07e-03 -6.30e-04  6.43e-02  2.83e-03
## 234  2.59e-04 -2.20e-04  2.70e-05  1.36e-04 -3.40e-06 -1.79e-04  1.31e-06
## 235  4.00e-03 -3.62e-03  4.74e-04  2.13e-03 -1.77e-04 -2.11e-03  1.12e-04
## 236  1.34e-03  7.91e-02  1.03e-02 -2.48e-02  3.46e-03 -1.02e-01  1.28e-02
## 237  8.25e-02  7.25e-02 -5.55e-03  2.25e-02 -1.85e-03 -3.23e-02  9.66e-03
## 238 -1.51e-02 -6.21e-02  1.72e-02  2.16e-03 -1.65e-03  4.00e-03 -4.90e-03
## 239 -4.23e-02  1.49e-02 -5.18e-03 -1.69e-02  1.27e-03  3.76e-03 -1.45e-03
## 240 -5.63e-02  5.77e-03 -4.70e-03 -2.00e-02  1.19e-03 -1.78e-03  3.28e-03
## 245  1.14e-03 -3.74e-04  4.42e-04 -2.70e-03  7.29e-04 -7.05e-04 -1.53e-03
## 246  2.55e-03  6.48e-03 -6.01e-03  3.93e-03 -4.40e-03  1.02e-02  9.25e-03
## 247  1.16e-03  5.57e-03 -5.70e-03  3.39e-03 -3.46e-03  8.28e-03  8.05e-03
## 248 -1.12e-02 -7.17e-03 -1.81e-02  2.73e-02  1.03e-03  5.88e-03  1.55e-02
## 249  2.50e-02  3.60e-02  2.13e-02  1.50e-02  4.55e-02  4.64e-02  3.05e-02
## 250 -2.15e-02  1.61e-02 -8.67e-03  7.28e-02 -7.82e-04  2.11e-02  4.07e-02
## 251 -8.13e-03  5.69e-03 -3.28e-03  2.18e-02 -1.66e-04  6.98e-03  1.31e-02
## 252  5.23e-03 -2.21e-03  1.31e-03  5.19e-03 -1.54e-04 -2.02e-03  5.09e-04
## 253  1.00e-02 -5.75e-02 -8.50e-02  6.26e-02 -9.64e-03 -3.45e-02 -2.92e-01
## 254 -1.73e-03  2.74e-03 -1.31e-03 -9.78e-03  2.55e-03  4.31e-03 -2.48e-03
## 255  1.24e-04 -2.50e-04  2.64e-04  5.46e-04 -1.60e-04 -2.30e-04  1.85e-04
## 256 -3.84e-03  3.60e-03 -1.90e-03 -3.88e-03  2.23e-04  1.63e-03 -8.33e-04
## 257  1.99e-02 -1.58e-02  1.13e-02  1.83e-02 -1.43e-03 -1.08e-02  4.75e-03
## 258  2.00e-02  1.75e-01 -6.81e-04  1.05e-01 -1.11e-02 -4.06e-02  6.13e-02
## 259  2.23e-02 -2.22e-02  1.60e-02  2.37e-02 -3.07e-03 -1.04e-02  8.14e-03
## 260  1.35e-02 -1.77e-02  1.62e-02  2.19e-02 -4.35e-03 -7.60e-03  1.19e-02
## 261 -3.76e-02  2.02e-01  2.38e-02  1.17e-01 -2.43e-02  7.18e-03  9.31e-02
## 262 -7.25e-03  1.14e-02 -8.11e-03 -9.04e-03  8.89e-04  1.93e-02 -2.60e-03
## 263  4.17e-02 -3.57e-02  5.32e-02  5.52e-02 -9.19e-03 -4.13e-02  3.19e-02
## 264 -1.21e-03 -6.05e-03 -4.47e-02 -4.28e-02  6.18e-03 -1.01e-01 -2.18e-02
## 265  4.39e-03  1.01e-02  1.12e-02  1.08e-02 -9.01e-04 -3.34e-03  6.15e-03
## 266 -1.06e-02 -7.23e-03  2.38e-02  7.14e-03  1.81e-05 -5.34e-03  6.74e-03
## 267 -8.48e-03 -3.28e-02  7.98e-02  3.50e-02  6.96e-04 -2.32e-02  1.89e-02
## 268 -6.65e-02  4.33e-02  1.61e-01  8.09e-02 -3.72e-03  8.14e-03  6.07e-02
## 269  3.84e-03  4.44e-02  1.31e-01  5.73e-02  9.23e-04 -3.36e-02  5.25e-02
## 270 -1.17e-02  4.28e-04  5.71e-05 -3.87e-03 -6.71e-02  1.26e-02  8.29e-03
## 271  5.02e-03 -8.74e-04  2.25e-04  3.03e-03  2.77e-04 -3.56e-02  2.52e-03
## 272 -8.39e-03 -4.28e-04 -7.16e-04  2.20e-03 -1.75e-03  4.06e-03  5.52e-03
## 273 -1.40e-02 -1.37e-03 -2.38e-03 -4.62e-03 -1.90e-03  5.49e-03  8.31e-03
## 274 -3.89e-02 -1.03e-02 -5.94e-03 -8.40e-02  3.78e-02 -1.95e-02  2.28e-02
## 275  1.26e-02 -6.11e-03  4.52e-03  1.02e-02 -7.81e-03 -2.55e-03  1.93e-02
## 276  1.09e-04 -4.62e-03  6.60e-04 -5.19e-03 -8.40e-03  4.32e-02  2.15e-02
## 279  7.94e-03 -9.97e-03  1.31e-02 -3.91e-03  4.75e-04  2.77e-04  9.79e-05
## 280  3.67e-02 -5.73e-02  5.93e-02 -2.37e-02  4.35e-03  1.36e-03 -1.98e-03
## 281  5.54e-02 -7.78e-02  8.57e-02 -2.94e-02  5.93e-03  5.28e-04  3.30e-03
## 282  4.83e-02 -7.48e-02  6.49e-02 -2.39e-02  5.74e-03  1.50e-04 -6.71e-03
## 283  3.32e-02 -4.10e-02  4.18e-02 -1.29e-02  3.59e-03  7.50e-04 -4.45e-03
## 284  6.07e-02  1.73e-02  9.60e-02 -3.73e-02  8.48e-03  7.47e-03  1.11e-02
## 285  6.33e-02  1.66e-02  1.18e-01 -2.60e-02  4.78e-03  3.85e-03  1.89e-02
## 286  1.22e-01  3.67e-02  2.43e-01 -1.39e-02 -4.97e-03  9.26e-03  1.11e-01
## 287  7.89e-02  3.17e-02  1.71e-01 -2.57e-03 -1.17e-03  1.90e-03  1.54e-01
## 288  6.81e-02  1.98e-02  1.32e-01  1.26e-02 -3.40e-03  8.44e-03  5.36e-02
## 289  5.08e-02 -4.02e-02  5.25e-02  4.74e-03  1.03e-03 -4.59e-02  8.40e-03
## 290  1.44e-01 -1.21e-01  2.37e-01  2.42e-03 -1.49e-02  1.15e-01  7.37e-02
## 293  2.61e-03  2.56e-03 -3.58e-04  1.03e-02  8.99e-02 -1.11e-02  2.56e-03
## 294 -1.72e-02 -1.52e-02 -1.45e-02 -1.16e-01 -1.19e-01  2.32e-02 -5.22e-03
## 295  2.15e-04  1.19e-02 -1.35e-02  3.88e-03  2.08e-01  6.96e-02 -3.33e-03
```

```
## 296  6.00e-03 -1.00e-03 -5.03e-03  4.31e-03 -5.44e-02 -5.01e-02 -7.10e-04
## 297 -4.83e-02  1.59e-02  3.43e-04  3.58e-03 -2.57e-02  1.52e-01  9.09e-03
## 298  6.79e-02 -3.14e-02 -1.12e-02 -1.04e-02  5.64e-02 -1.64e-01 -1.61e-02
## 299  4.07e-02 -2.19e-02 -5.08e-03 -3.01e-03  2.24e-02 -1.09e-01 -7.84e-03
## 300 -6.32e-03 -9.87e-04 -1.48e-04  8.40e-03 -5.77e-02  4.33e-02  2.41e-04
## 301 -8.51e-03 -5.43e-04  3.51e-04  9.46e-03 -6.89e-02  5.93e-02 -1.69e-04
## 317  1.12e-02 -4.59e-03  1.04e-01  4.33e-03  6.44e-03 -1.76e-02 -4.29e-02
## 318 -6.11e-02 -1.06e-02  2.36e-01 -3.46e-01  3.55e-03 -1.33e-02 -1.26e-01
## 319 -1.96e-02 -3.77e-02 -9.36e-02 -2.03e-02  1.02e-02  4.31e-03 -5.10e-02
## 320 -4.68e-02 -4.07e-02 -3.72e-02 -1.14e-02 -1.01e-02  2.04e-02  6.65e-02
## 321  6.59e-03 -8.40e-03 -2.16e-02 -7.69e-03  3.14e-03  8.26e-05  8.89e-03
## 322 -8.31e-03  1.42e-03  6.01e-03 -2.18e-03  3.12e-03 -4.98e-03 -2.52e-02
## 323 -2.38e-02  1.93e-03 -8.95e-04 -5.08e-04 -1.26e-03  2.74e-03 -3.10e-02
## 324 -5.31e-02  2.19e-02 -5.77e-02  3.08e-03 -3.40e-03  1.84e-04 -9.16e-02
## 325  1.64e-01  7.86e-02  1.52e-01  1.07e-01 -4.95e-02  1.58e-01 -3.87e-01
## 326  1.68e-01  9.98e-02  3.17e-01  7.43e-02 -3.06e-02 -4.13e-03  2.52e-01
## 327  1.90e-02 -5.28e-02 -3.30e-02  2.92e-02  9.95e-03  7.84e-04  2.25e-01
## 328  2.35e-02 -2.92e-01 -4.22e-01  1.46e-01 -3.49e-02  5.20e-02 -6.50e-01
## 329 -8.27e-03 -9.95e-03 -6.51e-02 -1.73e-03  8.46e-03  1.14e-02  2.02e-01
## 330 -4.67e-02  1.37e-02 -3.38e-02  1.06e-03 -1.43e-02  2.78e-02  3.56e-01
## 344  9.92e-04  3.81e-04 -8.75e-04 -8.03e-03  2.46e-03 -3.29e-03  8.28e-04
## 345 -1.17e-01 -2.35e-02 -1.18e-01  1.13e-01  2.16e-02  5.40e-02  2.28e-03
## 346 -6.18e-02 -6.13e-03 -7.18e-02  8.15e-02 -1.91e-02  4.74e-02  5.67e-03
## 347 -4.10e-03  2.14e-03  5.17e-03  3.99e-02 -5.39e-03  8.26e-03 -1.10e-03
## 348  1.14e-02 -1.55e-03  4.24e-03  1.47e-02  1.23e-05  5.75e-03 -4.12e-03
## 349 -1.76e-03 -4.18e-03 -1.14e-03 -1.08e-02  6.52e-04 -2.11e-03  1.73e-03
## 350 -3.49e-02  1.10e-01 -4.11e-02 -6.61e-02  5.91e-03 -2.40e-02  2.46e-02
## 356  1.19e-01 -9.98e-02 -8.33e-02  1.55e-01  3.36e-03 -2.19e-02 -5.21e-02
## 357  3.97e-02  1.09e-01 -5.72e-02  1.06e-01 -1.42e-03 -2.19e-02  6.74e-03
## 358  8.37e-02 -3.49e-02 -6.68e-02  1.13e-01  1.79e-03 -2.91e-02 -2.64e-02
## 359  7.73e-02 -6.98e-02 -9.16e-02 -1.61e-02  1.89e-02 -2.24e-02 -3.25e-02
## 360 -4.14e-02 -3.38e-02 -8.96e-02  3.56e-03 -1.81e-02 -3.00e-02  7.07e-03
## 361  8.84e-02 -8.53e-02 -8.65e-02 -4.67e-02  3.08e-02 -1.25e-02 -2.16e-02
## 362 -4.89e-02 -3.47e-02 -4.71e-02 -1.63e-02 -2.26e-02 -5.70e-03  1.40e-02
## 363 -1.98e-01  2.89e-01 -1.13e-01 -1.76e-02 -3.37e-02  4.18e-02  8.33e-02
## 398  2.24e-02 -6.09e-03  1.46e-03 -1.68e-02 -2.52e-04 -6.88e-03  8.95e-03
## 399  3.60e-03 -8.06e-03 -2.30e-03 -1.71e-02  3.13e-03 -2.41e-03  3.50e-03
## 400 -1.37e-02 -5.96e-04  5.27e-03  1.05e-02 -2.01e-03  2.75e-03 -2.46e-03
## 401 -5.08e-02 -8.30e-03  1.99e-02  9.88e-03 -4.48e-03  9.36e-03 -4.29e-03
## 402 -4.26e-02 -4.51e-02  3.49e-02  4.34e-02  1.30e-03  2.16e-02 -2.16e-02
## 403 -8.64e-02 -5.97e-02  1.57e-01  1.16e-01 -1.60e-02  2.28e-01  2.01e-02
## 414 -7.54e-02 -2.47e-02 -3.70e-02 -1.94e-01  2.07e-02  3.00e-02 -4.68e-04
## 415  4.46e-03  5.10e-03  1.06e-03  1.29e-04 -2.56e-04 -3.33e-03  2.06e-03
## 416  6.26e-03  3.29e-04  9.78e-04  2.57e-03 -3.90e-03 -6.76e-03  1.05e-03
## 417  3.39e-03 -1.45e-03  4.23e-03  3.58e-03 -1.02e-02 -7.94e-03 -1.71e-03
## 418  2.58e-03 -3.43e-05  3.03e-03 -1.77e-03 -1.18e-03 -2.56e-03  2.21e-04
## 419 -7.94e-05 -5.75e-04 -1.25e-03 -2.09e-03 -8.19e-03 -5.25e-03 -2.04e-04
## 420 -7.08e-04  7.35e-03 -8.22e-03 -6.33e-03 -9.81e-03 -8.97e-03 -7.67e-04
## 421 -1.11e-02 -6.52e-04  3.50e-02  1.25e-01 -6.22e-03  3.99e-02  1.76e-02
## 422  2.83e-02  8.28e-03  2.16e-02  8.97e-02  3.97e-02  2.60e-02  2.07e-03
## 423  3.18e-04 -1.97e-03 -2.06e-02  6.11e-02  1.11e-02  6.53e-03  6.07e-03
## 424 -4.23e-03 -1.78e-03 -3.37e-03 -1.58e-02 -2.61e-03 -4.11e-03 -6.14e-04
## 425  2.00e-02 -2.24e-02  1.51e-02 -2.04e-03  9.38e-04 -1.33e-02 -2.11e-03
## 426 -1.35e-03  5.31e-02 -2.67e-03  5.95e-04  5.64e-04 -1.04e-02  6.68e-03
## 427  2.22e-02  3.18e-03 -1.16e-02  2.12e-02  3.22e-03 -1.47e-01 -7.58e-04
## 428 -2.35e-03  5.15e-02 -2.09e-03 -5.33e-03  8.53e-04 -1.44e-02  6.78e-03
## 429 -1.83e-02  1.36e-02 -1.19e-02  1.48e-02 -1.71e-03  2.43e-02  5.86e-03
## 430 -2.31e-04  6.54e-02  9.05e-05 -3.23e-03  1.52e-03 -2.32e-02  6.52e-03
## 431 -2.68e-03  5.50e-02 -9.07e-04 -8.92e-03  5.99e-03 -1.77e-02  5.27e-03
## 432 -2.20e-02  5.74e-02 -3.71e-03 -1.15e-02 -1.33e-03  5.28e-02  6.59e-03
## 433 -4.47e-02  1.54e-02 -3.10e-02  3.38e-02 -5.56e-03  4.72e-02  1.62e-02
## 434 -3.68e-02  1.01e-02 -2.24e-02  5.95e-02 -7.72e-03  3.90e-02  1.38e-02
## 435 -3.65e-02  2.19e-03 -1.80e-02  6.90e-02 -1.56e-02  2.94e-02  1.32e-02
## 437 -7.29e-03 -6.49e-04 -3.17e-03 -4.95e-03  1.99e-03 -7.54e-03  2.78e-03
## 438 -2.20e-03 -1.53e-04 -9.64e-04 -1.49e-03  6.36e-04 -2.30e-03  8.47e-04
## 439  1.01e-02 -4.37e-04  7.27e-03  3.10e-02 -6.56e-02  4.20e-02 -5.54e-03
## 440  5.58e-03  1.40e-04  6.89e-03  3.36e-02 -7.59e-02  6.02e-02 -4.05e-03
## 470 -4.67e-02  6.61e-02 -5.72e-02 -9.94e-02  1.16e-02  1.81e-02  2.05e-02
## 471 -1.15e-02 -1.91e-02 -1.60e-02 -5.59e-02  6.10e-03  8.23e-03  1.34e-02
## 472 -3.14e-02 -5.91e-02 -2.01e-02 -1.27e-01  7.55e-03  2.51e-02  4.70e-02
## 473 -1.68e-01  1.51e-01 -1.52e-01 -2.56e-01  2.00e-02  1.33e-01 -5.70e-02
## 474 -8.08e-02 -1.88e-01 -6.73e-02 -2.59e-01  2.12e-02  1.74e-01 -2.11e-01
## 491  1.82e-02  3.01e-02 -2.16e-03 -1.90e-02  7.54e-03 -4.32e-02 -2.30e-04
## 492  4.25e-02 -4.74e-02  3.12e-02  3.90e-02 -6.33e-03 -1.41e-02  8.59e-03
## 498  9.42e-04 -3.53e-03 -2.52e-03 -3.21e-03  2.97e-04 -2.43e-03  4.03e-04
## 499 -1.35e-02 -1.36e-02 -1.03e-02 -1.02e-02 -9.86e-04  5.14e-02 -6.20e-03
## 500  3.99e-04  5.15e-03  2.38e-03  2.57e-03 -2.59e-04  3.60e-04  1.28e-04
## 501  8.36e-04 -7.55e-03 -3.31e-04  2.10e-04 -4.07e-04 -1.04e-03  3.77e-04
## 502 -5.61e-02  1.81e-01 -3.06e-02  1.32e-02 -5.67e-03 -5.54e-03  5.52e-02
## 503 -4.37e-02  1.03e-01 -2.87e-02 -1.31e-02  2.10e-03 -5.85e-02  2.28e-02
## 504 -5.10e-03  2.35e-02  6.29e-04  8.18e-03 -1.80e-03 -7.96e-04  1.21e-03
## 505 -1.31e-02  4.30e-02 -5.42e-03  1.75e-02 -3.62e-03  5.29e-03  1.15e-03
## 506  6.57e-02  6.03e-02 -2.33e-02  6.51e-02 -1.27e-03 -1.72e-01 -1.52e-02
## 507 -1.27e-01  1.60e-01  4.29e-03 -3.15e-02  2.05e-03 -1.75e-02  4.90e-02
## 508  8.80e-03  4.79e-02 -2.33e-02 -1.39e-02  1.02e-03  1.22e-02  2.42e-03
## 509 -1.35e-01  4.98e-02 -8.92e-02 -9.33e-02  4.78e-03  5.34e-02 -1.04e-02
##       dfb.BMI  dfb.un..  dfb.Poli  dfb.Ttl.  dfb.Dpht  dfb.HIV.   dfb.GDP
## 1    2.80e-02 -5.34e-01 -1.00e-01  2.26e-01 -2.12e-01 -1.29e-01  4.48e-02
## 2    1.66e-02  1.14e-01  2.68e-01  5.44e-02 -1.06e-01  7.17e-02 -1.82e-02
## 3    2.06e-02  2.12e-01 -1.47e-02  1.25e-01  5.58e-02  1.80e-01  2.89e-02
## 4    3.61e-02  1.79e-01  5.47e-02  9.82e-02 -2.58e-02  1.83e-01  3.05e-02
## 5    1.24e-02  1.09e-01 -2.64e-02  9.52e-02  3.40e-03  1.28e-01 -1.76e-02
## 6    1.72e-01  5.46e-02 -5.59e-02  8.85e-02 -1.56e-02  1.32e-01  1.16e-03
## 7    7.62e-03  6.00e-02 -1.33e-01 -3.21e-03  2.74e-01  8.74e-02 -1.44e-02
## 8    1.09e-02  2.51e-02  3.01e-03  5.37e-02 -2.82e-02  1.16e-01 -2.54e-02
## 9    2.81e-03  1.31e-02 -5.67e-02  7.93e-02 -2.46e-02  1.25e-01 -1.70e-02
## 10   5.30e-03  1.35e-02  3.83e-02 -9.35e-03  7.34e-02  5.73e-02 -2.89e-03
```

```
## 11   4.35e-02 -6.65e-02  4.65e-02  1.48e-02  6.53e-02  6.41e-02 -2.35e-03
## 12   3.59e-02 -5.88e-02  1.30e-01 -3.64e-02  1.58e-01 -2.01e-02  1.01e-03
## 13   2.80e-02 -7.19e-02  1.22e-01 -3.45e-02  1.51e-01 -2.19e-02 -1.04e-02
## 14   4.51e-02 -1.25e-01  7.31e-02  1.63e-02  4.97e-02 -2.05e-03  1.59e-03
## 15   7.34e-02 -1.36e-01  7.24e-02 -6.62e-02  8.07e-02 -1.03e-01  8.64e-03
## 16   4.82e-02 -1.55e-01  3.06e-01  5.78e-02 -1.19e-02 -1.31e-01 -2.70e-03
## 17  -4.89e-02  1.58e-02  1.42e-02 -1.52e-02  3.09e-02  8.78e-03 -3.06e-01
## 18  -4.95e-02  1.81e-02  1.43e-02  1.81e-02  3.16e-02  1.09e-02  5.36e-02
## 19  -4.26e-02  9.93e-03  1.57e-02  2.32e-02  3.31e-02  1.48e-02  5.64e-02
## 20  -4.26e-02  1.08e-02  1.39e-02  2.20e-02  3.06e-02  1.46e-02  5.70e-02
## 21  -4.50e-02  1.65e-02  1.24e-02  1.61e-02  3.24e-02  1.46e-02  6.03e-02
## 22  -3.84e-02  1.34e-02  1.24e-02  4.12e-03  2.96e-02  1.43e-02  4.10e-02
## 23  -3.28e-02  9.98e-03  1.22e-02 -1.21e-02  2.94e-02  1.33e-02  3.27e-02
## 24  -3.87e-02  1.44e-02  1.29e-02  1.14e-02  3.12e-02  1.32e-02  4.53e-02
## 25  -1.86e-02 -8.76e-03  1.21e-02 -4.97e-03  2.25e-02  1.92e-02  4.58e-02
## 26  -2.65e-02 -1.85e-03  1.74e-02  2.55e-02  3.58e-02  2.53e-02  5.43e-02
## 27  -1.40e-02 -7.46e-03  1.74e-02  7.45e-03  3.10e-02  3.11e-02  5.56e-02
## 28  -3.28e-01  4.78e-02 -4.12e-02  1.91e-02 -3.59e-02 -3.79e-02 -1.08e-01
## 29  -9.56e-02  1.23e-02 -1.22e-02 -1.62e-04 -8.56e-03 -8.92e-03 -2.60e-02
## 30  -2.25e-03  7.80e-04  4.02e-04 -1.23e-03  9.96e-04  1.03e-05 -1.50e-02
## 31  -1.16e-02  3.45e-03  4.53e-06 -4.54e-02  7.74e-03  9.90e-04  3.89e-03
## 32  -1.51e-03 -1.63e-03  1.54e-03 -2.36e-02  3.69e-03  3.77e-03  1.03e-02
## 33   1.98e-02 -1.47e-02 -1.36e-02  1.02e-01 -2.05e-02  7.70e-03 -1.21e-02
## 34   5.62e-02 -1.69e-02 -4.12e-03 -2.29e-01 -3.89e-04  6.65e-04 -2.02e-02
## 35   1.03e-02 -7.11e-03 -1.02e-02  5.38e-02 -1.51e-02 -3.75e-04  9.57e-04
## 36   2.24e-03 -1.06e-03 -3.32e-03  1.54e-02 -4.48e-03 -3.71e-05 -3.87e-03
## 37   2.68e-02 -1.12e-02 -7.51e-03 -1.13e-01 -2.84e-03  2.75e-03 -8.87e-03
## 38  -6.72e-03  4.24e-03  2.27e-03  3.22e-02 -1.33e-04 -1.96e-03  2.39e-03
## 39  -3.42e-02 -1.03e-02 -6.06e-03  9.25e-02 -5.35e-03  8.41e-03  1.17e-02
## 40   8.82e-02 -3.97e-03  1.30e-02 -2.08e-01  9.40e-03  8.14e-04  1.25e-02
## 41   5.23e-02  1.42e-02  9.01e-03 -1.48e-01  9.76e-03 -1.19e-02 -4.73e-02
## 42   4.75e-03  2.10e-03  1.32e-03 -1.37e-02  1.12e-03 -1.20e-03 -4.36e-03
## 43   1.26e-03  3.49e-04  2.80e-04 -3.57e-03  3.14e-04 -1.11e-04 -1.07e-03
## 44  -1.45e-02 -1.76e-02 -4.39e-02  5.40e-02 -1.17e-02  3.68e-02 -2.73e-02
## 45   1.96e-02 -7.85e-02 -4.82e-02  5.36e-02 -1.99e-02 -4.38e-03  4.79e-03
## 46   1.31e-02 -1.43e-01 -4.72e-02  6.27e-02 -1.88e-02 -1.82e-01 -5.69e-03
## 47   2.09e-02 -1.29e-01 -8.54e-02  1.01e-01 -2.36e-01 -1.83e-01  1.24e-02
## 48  -4.99e-03 -4.90e-02 -2.70e-02  5.97e-03 -9.98e-03 -6.11e-02  5.93e-03
## 49   2.07e-02 -1.20e-02 -3.53e-03  2.39e-03 -3.18e-03 -1.34e-02  1.41e-03
## 50  -8.26e-04 -6.19e-03 -3.73e-03  6.96e-03 -2.59e-03 -1.16e-02 -8.49e-04
## 51   2.11e-02 -7.57e-02 -3.83e-02 -1.05e-02 -3.58e-02  1.16e-02  4.24e-03
## 52   1.04e-01  2.35e-01  2.25e-01  2.72e-03  9.68e-02 -2.45e-01  6.05e-02
## 53   6.94e-02  1.40e-01  7.26e-02  2.15e-03  6.76e-02 -6.44e-02  3.76e-02
## 54   5.25e-02  1.38e-01  6.30e-02 -2.67e-02  6.29e-02 -5.12e-02  2.70e-02
## 55   1.16e-01  1.63e-01  3.46e-02 -2.80e-02  5.33e-02 -6.70e-02  4.91e-02
## 56   1.51e-01  2.95e-01 -4.20e-02  1.25e-02 -6.24e-02 -2.04e-01  9.17e-02
## 57   1.14e-02 -3.44e-02  2.91e-02 -8.77e-02  3.76e-02 -5.48e-02 -8.62e-04
## 58   1.37e-03 -4.79e-02  3.01e-02  1.21e-01  2.40e-02 -7.01e-02  1.28e-02
## 59   1.71e-03 -3.72e-02  1.67e-02  8.13e-02  2.23e-02 -5.65e-02  1.10e-02
## 60   5.89e-03 -2.84e-02  8.23e-03  3.05e-02  2.74e-02 -4.91e-02  9.95e-03
## 61   9.91e-03 -2.66e-02  7.77e-03 -1.77e-03  2.26e-02 -4.25e-02  1.04e-02
## 62   9.87e-03 -1.89e-02  6.69e-03 -1.47e-03  2.18e-02 -3.94e-02  1.07e-02
## 63   9.52e-03 -2.35e-02  1.13e-03 -5.20e-03  2.38e-02 -3.87e-02  1.07e-02
## 80   8.34e-04 -4.80e-03  2.05e-02  2.93e-03 -2.34e-02 -7.68e-03 -1.65e-03
## 81  -7.80e-03  1.50e-02 -1.36e-02  1.10e-02 -1.10e-02  2.48e-02 -1.25e-03
## 82  -5.84e-03  5.83e-03 -1.39e-02  1.34e-02 -1.13e-02  1.94e-02  3.67e-03
## 83  -3.68e-03  2.62e-03 -9.65e-03  1.54e-02 -1.34e-02  1.97e-02  4.74e-03
## 84  -6.42e-03  2.02e-02 -9.00e-02  6.13e-03  1.50e-01 -5.09e-03 -8.08e-04
## 85  -2.35e-03 -5.93e-03 -9.90e-03  1.16e-02 -1.15e-02  2.28e-02  4.06e-03
## 86   1.60e-04 -3.32e-03 -9.87e-03  9.05e-03 -1.23e-02  2.30e-02  3.62e-03
## 87   8.50e-03 -1.43e-03  4.22e-03  3.18e-02 -2.20e-02 -1.30e-02  1.11e-02
## 88   8.69e-03  2.12e-02  9.99e-03  1.51e-02 -1.70e-02 -1.85e-02  9.00e-03
## 89   4.24e-03 -1.14e-03  7.07e-04  4.57e-05 -4.98e-04  1.07e-03  6.27e-04
## 90   3.90e-02 -5.83e-02 -5.42e-03 -3.34e-02 -1.60e-02 -7.24e-02  4.17e-03
## 91   2.21e-02 -3.77e-02 -2.99e-02 -1.87e-02 -3.26e-02 -5.67e-02 -1.74e-03
## 92   4.00e-02 -5.13e-02 -6.46e-04 -5.40e-02 -1.89e-02 -9.58e-02  2.81e-03
## 93  -3.55e-02 -1.43e-02 -6.19e-03 -1.76e-02 -7.63e-03 -4.13e-02 -3.78e-03
## 94  -3.95e-02 -3.25e-02 -6.86e-03 -1.65e-02 -1.28e-02 -4.77e-02 -2.31e-03
## 95   1.54e-02 -2.25e-02 -7.54e-04 -1.70e-02 -1.20e-02 -3.12e-02  2.59e-03
## 96   1.09e-02 -1.62e-02 -1.59e-03 -6.82e-03 -6.06e-03 -2.33e-02  1.75e-03
## 97   7.93e-03 -8.40e-03 -2.71e-03 -4.34e-03 -1.15e-03 -1.68e-02  1.62e-03
## 98  -1.27e-02  2.89e-02  1.18e-02  2.03e-02 -1.33e-02  6.48e-04 -6.04e-04
## 99   9.07e-03 -8.90e-03 -5.73e-03 -6.04e-03  6.18e-03 -1.59e-02  2.43e-03
## 100  1.30e-02 -1.32e-02 -8.56e-03 -9.20e-03  5.23e-03 -1.97e-02  3.92e-03
## 101 -5.69e-03  4.77e-02  4.60e-02  3.18e-02 -2.00e-02 -8.01e-02  8.13e-04
## 102 -8.04e-03  5.46e-02  3.97e-02  2.68e-02 -7.92e-03 -7.06e-02 -2.31e-03
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## 104 -1.49e-03  2.85e-02  3.10e-02  1.47e-02  7.47e-03 -5.94e-02 -1.48e-03
## 105  1.10e-03  2.21e-02  7.98e-03 -8.91e-03 -7.51e-03 -3.15e-02 -1.20e-03
## 106 -1.64e-03  3.08e-02  3.96e-03 -1.92e-02 -1.15e-02 -3.31e-02 -6.97e-03
## 107 -1.54e-03  2.31e-02  3.56e-03 -1.70e-02 -8.12e-03 -2.56e-02 -3.47e-03
## 108  1.38e-03  3.91e-02  7.82e-02 -2.83e-02 -9.86e-02 -5.79e-02 -5.24e-03
## 109 -7.48e-03  4.48e-02 -9.95e-02 -2.57e-02  2.86e-02 -3.03e-02 -4.32e-03
## 110  4.82e-05  4.07e-02  2.42e-04 -2.62e-02 -5.49e-03 -2.94e-02 -1.70e-03
## 111 -3.20e-03  6.71e-02 -9.41e-02 -2.97e-02  7.14e-03 -3.90e-02 -1.74e-03
## 112  1.18e-04 -1.90e-03  6.62e-05  7.17e-04  8.11e-04  2.02e-04  9.02e-05
## 113  5.76e-07 -1.72e-05 -1.56e-05  4.05e-06  2.75e-05  2.71e-06 -1.60e-07
## 114  9.55e-03 -5.04e-02  8.37e-03  1.94e-02  2.31e-02 -2.66e-02  5.69e-03
## 115  1.43e-02 -4.34e-02  1.90e-02 -1.86e-02  3.15e-02 -2.58e-02  3.84e-03
## 116  8.70e-03 -2.27e-02  5.99e-03 -1.26e-02  2.95e-02 -1.79e-02  1.08e-03
## 117 -1.31e-03  6.15e-03 -3.22e-03  1.28e-02 -4.12e-03 -2.34e-03  2.03e-04
## 118  2.09e-04 -5.55e-04  8.04e-04 -1.28e-03  3.39e-04  2.69e-04  7.29e-06
## 119  1.30e-01 -5.45e-05 -3.49e-01  7.90e-03  1.75e-01 -1.01e-01  4.62e-02
## 126 -5.25e-01  1.95e-01  4.02e-02  6.08e-02  4.24e-02 -5.08e-03 -1.19e-01
## 127  8.97e-02  9.87e-02  7.65e-02 -1.43e-02  3.44e-02 -2.45e-02 -5.57e-02
## 128  1.13e-02  3.39e-03  4.54e-03  2.92e-03  2.47e-03 -1.34e-03 -6.38e-03
## 151 -3.30e-02 -6.21e-03  1.06e-02 -1.61e-03  4.31e-03  3.68e-04 -2.52e-01
```

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## 152  2.90e-02  9.51e-03 -1.25e-02  1.29e-01 -1.65e-02 -2.32e-02 -7.15e-02
## 153  1.19e-02  3.90e-03 -5.06e-03  5.63e-02 -7.10e-03 -1.03e-02 -3.14e-02
## 154 -3.39e-01  7.01e-02 -1.92e-02 -1.82e-01  2.95e-02 -8.81e-03 -1.27e-01
## 155 -2.88e-01  5.64e-02 -1.55e-02 -1.54e-01  2.49e-02 -7.91e-03 -1.06e-01
## 156 -1.74e-02  1.18e-04  4.84e-03 -6.11e-02  7.02e-03  5.10e-03  4.54e-02
## 185 -2.44e-02 -2.65e-03  1.01e-02 -4.66e-03  1.94e-02  1.59e-02 -7.17e-04
## 186 -2.17e-02 -4.92e-03  6.01e-03  1.06e-02  1.42e-02  1.81e-02  3.84e-02
## 187 -1.85e-02 -4.91e-03  5.45e-03  4.29e-03  1.39e-02  1.84e-02  3.68e-02
## 188 -2.01e-01  2.47e-02 -1.98e-02  1.16e-02 -1.25e-02  1.17e-03  2.40e-02
## 189 -1.19e-02  6.15e-03  4.73e-03  4.78e-03  8.03e-03 -1.17e-03 -3.39e-02
## 190  1.01e-02 -7.17e-03 -1.12e-03  8.08e-03  1.00e-02 -5.56e-03  5.05e-02
## 191  1.33e-02  6.84e-03  1.10e-03  9.75e-03 -3.21e-03 -4.35e-03 -1.29e-02
## 192  1.12e-02 -8.12e-04  1.90e-03  4.85e-03 -2.18e-03 -1.52e-03  4.58e-03
## 193  1.08e-02  1.72e-03  2.30e-03  7.74e-03 -2.27e-03 -4.76e-03 -1.01e-02
## 194 -7.35e-03 -1.89e-03 -8.56e-04 -2.38e-03 -3.86e-04  4.35e-04 -9.61e-04
## 195 -5.10e-03 -6.16e-04 -1.32e-03 -1.68e-03  2.95e-04  1.88e-04 -5.89e-04
## 196 -4.35e-03 -1.48e-03 -1.09e-03 -1.86e-03  6.25e-05  2.18e-04  8.25e-04
## 197 -1.81e-01  3.30e-02 -8.09e-04  4.29e-02 -1.17e-03  5.23e-04 -4.80e-03
## 198  3.01e-05  2.62e-05  7.85e-06  2.98e-05 -3.86e-06 -2.83e-05 -9.52e-05
## 199 -3.04e-03  4.94e-04 -7.44e-04 -4.03e-04  4.62e-04  4.69e-04 -1.57e-03
## 200 -2.57e-05 -1.94e-05 -1.12e-05 -2.58e-05  4.61e-06  2.32e-05  7.43e-05
## 201  4.65e-02  8.98e-03  2.02e-02  1.37e-02 -1.21e-02 -1.23e-02 -2.56e-03
## 202  4.91e-02  3.07e-02  2.60e-02  1.19e-02 -1.86e-02 -9.49e-03  6.66e-03
## 219 -3.44e-02 -4.37e-03 -2.18e-01 -3.10e-02  1.27e-01  5.85e-03 -8.87e-03
## 220 -1.40e-02  3.06e-03  1.60e-02 -2.52e-02  8.06e-03 -1.15e-02 -5.38e-03
## 221 -1.40e-02  2.48e-03  2.56e-02 -2.31e-02  8.59e-03 -6.99e-03 -3.79e-03
## 222 -1.22e-02  2.39e-03  2.29e-02 -2.15e-02  1.63e-02 -2.62e-03 -2.74e-03
## 223 -3.66e-02 -3.41e-02  2.47e-01 -7.30e-03 -3.95e-01  2.57e-04 -8.97e-03
## 224 -4.72e-02  2.94e-03 -2.62e-01 -1.30e-02  1.74e-01  5.35e-02 -7.36e-03
## 225 -6.82e-03 -1.31e-02  1.57e-01 -1.56e-02 -9.14e-02  4.44e-03  5.44e-03
## 226 -1.83e-02 -2.33e-02  1.79e-01  9.25e-02 -1.21e-01  1.07e-02  1.13e-02
## 227 -3.39e-04 -2.16e-02  1.77e-01 -8.22e-02 -9.72e-02  1.29e-02  3.78e-03
## 228  7.23e-02 -2.91e-02 -2.45e-02 -6.85e-02 -5.96e-03  4.03e-02  1.14e-02
## 229  1.74e-01 -2.39e-03 -3.06e-02 -1.60e-01 -3.45e-02 -1.25e-03  2.94e-02
## 230 -3.27e-02 -4.50e-03 -4.09e-02  1.24e-01 -1.78e-02  3.94e-02  1.06e-02
## 231 -1.27e-02 -9.82e-03 -1.87e-02 -5.07e-02 -2.69e-06  1.39e-02  2.02e-04
## 232 -3.54e-03  1.73e-04 -2.56e-03 -7.96e-03  4.30e-04 -5.63e-03 -6.97e-04
## 233 -4.18e-03 -4.37e-03 -1.06e-02 -1.39e-02 -2.63e-02 -7.74e-03  1.05e-03
## 234 -9.68e-05 -2.90e-05 -7.70e-05 -1.03e-05  1.14e-05 -2.65e-04 -2.59e-05
## 235 -1.56e-03 -4.93e-04 -1.37e-03  1.13e-03 -1.91e-04 -4.14e-03 -3.67e-04
## 236  2.35e-02 -1.22e-02  1.94e-01  3.50e-02 -2.23e-01  3.49e-02  6.80e-04
## 237 -5.12e-03  4.48e-03 -7.12e-02  3.41e-02 -6.03e-02  7.96e-02 -1.33e-03
## 238  2.04e-03 -1.78e-02 -5.15e-03 -4.16e-03 -5.03e-03 -6.36e-02  2.64e-03
## 239  7.31e-03  4.87e-03  6.13e-03  1.62e-02 -3.04e-03  3.04e-02  1.04e-03
## 240  1.13e-02  4.25e-03  1.53e-02  1.06e-02  1.23e-02  3.70e-02  1.94e-03
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## 247 -4.59e-02  5.95e-03  1.96e-03 -3.84e-04  3.84e-03  1.10e-02  4.19e-02
## 248 -8.83e-02  1.79e-02 -4.94e-04  1.27e-02  8.05e-03  8.55e-03 -1.26e-02
## 249  8.51e-02 -1.92e-02  9.96e-03 -2.85e-02  1.43e-02  4.33e-02  1.58e-01
## 250  4.42e-02  9.05e-03  2.47e-03  2.55e-02  1.54e-02  5.01e-03 -2.30e-02
## 251  1.15e-02  3.39e-03  5.81e-04  1.17e-02  3.97e-03  1.81e-03 -7.89e-03
## 252  2.31e-03 -1.38e-03 -2.73e-03 -6.55e-03 -7.37e-04  2.54e-03  5.04e-04
## 253  1.27e-02  8.91e-02 -2.77e-02  6.23e-02 -2.39e-03  2.77e-02  8.43e-03
## 254 -5.33e-04  1.42e-03  5.72e-03 -1.58e-02  3.48e-03 -2.55e-03 -1.45e-03
## 255  6.91e-05 -2.66e-04 -3.21e-04  8.20e-04 -1.91e-04  7.16e-05  9.33e-05
## 256 -1.38e-03  1.99e-03  2.17e-03  3.81e-03  2.88e-04 -2.72e-04 -1.07e-04
## 257  5.83e-03 -1.16e-02 -1.23e-02 -1.15e-02 -5.28e-03 -4.42e-04  3.06e-04
## 258  2.79e-02 -1.75e-03 -3.72e-02 -1.68e-02 -4.16e-02 -8.30e-02  8.10e-03
## 259  7.28e-03 -1.65e-02 -1.73e-02 -7.05e-03 -7.08e-04 -2.83e-03  8.16e-04
## 260  7.47e-03 -1.64e-02 -8.90e-03  4.86e-03 -2.52e-03 -4.68e-03  1.99e-03
## 261  4.26e-02 -2.51e-02 -4.84e-02  7.69e-02  1.60e-02 -1.13e-01  1.95e-02
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## 263  2.93e-02 -5.39e-02  9.50e-04  1.28e-03  7.30e-03 -2.57e-02  5.33e-03
## 264  1.25e-03  4.50e-02  3.37e-02  1.33e-02  5.88e-02 -4.30e-02 -6.08e-03
## 265  2.38e-04 -1.13e-02 -3.82e-03 -4.90e-04 -4.33e-03  2.64e-03  7.12e-04
## 266  4.08e-03 -2.40e-02  3.18e-02 -5.02e-03 -2.14e-02 -4.04e-03  5.82e-04
## 267  6.94e-03 -8.08e-02 -1.26e-02 -1.25e-02 -2.68e-03  7.94e-04  6.26e-06
## 268  2.21e-02 -1.62e-01 -2.02e-02 -2.25e-02 -3.79e-02 -2.97e-02  7.85e-03
## 269 -4.26e-04 -1.32e-01 -1.19e-02 -3.25e-02  1.35e-02 -2.60e-02  7.61e-04
## 270  3.83e-02  5.46e-04  5.94e-03  2.00e-02 -2.14e-03 -1.41e-03  6.00e-02
## 271  1.20e-02 -1.81e-04  5.44e-03  9.74e-03  1.46e-02 -4.68e-03 -6.55e-03
## 272  2.19e-02  9.84e-04  4.67e-03  1.50e-02  1.10e-03 -3.14e-03 -7.65e-03
## 273  3.30e-02  2.86e-03  8.20e-03  2.26e-02  2.57e-03 -5.26e-03 -1.16e-02
## 274  1.68e-01  8.73e-03  3.98e-02  7.40e-02  2.25e-02 -2.58e-02 -3.08e-02
## 275  1.07e-01 -4.39e-03 -1.92e-02  3.77e-02 -2.73e-02 -1.41e-02 -3.85e-02
## 276  9.81e-02 -3.77e-04 -2.38e-02  3.65e-02 -4.48e-02 -7.97e-03 -3.13e-02
## 279  1.76e-03 -1.30e-02  7.07e-04 -2.83e-03  1.62e-03 -8.85e-04 -2.26e-04
## 280 -3.09e-02 -5.84e-02  4.85e-04 -5.75e-03  9.48e-03  3.83e-03 -4.21e-03
## 281 -3.90e-02 -8.47e-02  3.64e-03 -1.88e-02  1.03e-02  8.91e-03 -4.86e-03
## 282 -3.49e-02 -6.40e-02  3.57e-03 -1.63e-02  1.02e-02  1.30e-02 -4.96e-03
## 283  4.28e-03 -4.15e-02  2.80e-03 -1.63e-02  7.29e-03  8.65e-03 -2.05e-03
## 284  1.83e-02 -9.49e-02  2.42e-02 -2.79e-02  8.91e-03 -4.88e-03  8.80e-04
## 285  1.93e-02 -1.17e-01  1.00e-02  5.30e-03  2.22e-02  9.07e-03  4.87e-03
## 286  5.20e-02 -2.39e-01 -1.84e-02  2.95e-03  9.16e-02  2.22e-02  2.43e-02
## 287  2.43e-02 -1.71e-01 -1.96e-02  1.91e-02  5.97e-02  5.72e-03  1.09e-02
## 288  2.74e-02 -1.31e-01  2.83e-02  1.77e-02  1.07e-02  1.58e-03  1.27e-02
## 289  8.42e-03 -5.24e-02  7.77e-03 -1.68e-03  2.62e-02  9.40e-03  9.12e-04
## 290  5.38e-02 -2.36e-01  1.63e-01  3.92e-02 -2.74e-01  3.65e-02  2.70e-02
## 293 -1.69e-02  2.61e-04 -5.19e-04  1.22e-02  4.90e-03  2.09e-03 -8.94e-02
## 294  3.48e-02  1.60e-02  1.62e-02 -7.23e-02  2.65e-03 -6.05e-03  1.34e-01
## 295 -2.97e-02  1.27e-02 -4.72e-03 -6.65e-02 -1.53e-02  8.08e-03 -2.11e-01
## 296 -4.29e-02  4.80e-03  7.05e-04  2.25e-02  1.66e-02 -3.97e-03  5.24e-02
## 297 -1.88e-02  2.08e-04 -1.88e-02  8.90e-02 -6.53e-02  2.37e-02  4.48e-02
## 298  4.04e-02  9.09e-03  2.87e-02 -2.15e-01  8.51e-02 -3.79e-02 -9.86e-02
## 299  2.81e-02  4.49e-03  2.03e-02 -1.44e-01  5.64e-02 -2.68e-02 -6.00e-02
## 300 -5.15e-03  2.21e-04 -5.96e-03 -6.39e-03 -1.67e-02  4.76e-03  3.35e-02
```

```
## 301 -6.58e-03 -2.15e-04 -8.36e-03 -8.48e-03 -2.33e-02  7.27e-03  4.16e-02
## 317  3.41e-03 -1.03e-01 -3.02e-03 -1.92e-02  1.47e-02 -1.75e-02 -5.31e-03
## 318  6.61e-02 -2.05e-01  5.40e-02 -3.65e-02  3.62e-02 -6.02e-02  3.26e-02
## 319 -1.03e-02  8.85e-02  1.06e-03 -7.16e-03  4.10e-03 -6.16e-03 -9.21e-03
## 320  1.24e-02  3.41e-02  1.48e-02  1.71e-02 -1.54e-02 -2.14e-02  1.12e-02
## 321 -6.05e-03  1.94e-02  3.31e-04 -1.96e-03 -1.53e-03 -3.90e-03 -3.16e-03
## 322 -1.72e-03 -5.02e-03  1.28e-03 -4.96e-03  9.09e-03 -2.31e-03 -2.60e-03
## 323  3.34e-03  3.71e-03  6.55e-03  1.88e-03  7.07e-03 -1.74e-03  1.30e-03
## 324 -1.02e-03  6.37e-02  3.32e-02  1.23e-02 -4.15e-02  2.80e-03  1.43e-03
## 325  1.39e-01 -1.53e-01 -3.98e-02 -7.24e-02 -7.94e-02 -9.66e-02  8.53e-02
## 326  8.49e-02 -3.26e-01 -1.45e-03 -2.69e-02 -4.41e-02 -9.91e-02  4.52e-02
## 327  3.44e-02  3.01e-02  3.05e-02  6.26e-03 -1.97e-02 -5.24e-03  8.65e-04
## 328  1.60e-01  4.52e-01 -3.00e-01 -1.22e-01  1.70e-01  9.38e-02  7.60e-02
## 329  9.02e-03  6.24e-02  9.47e-03 -9.97e-03 -8.10e-03  1.47e-03 -3.50e-03
## 330  2.73e-02  3.53e-02  4.87e-03  1.21e-02 -1.24e-02 -4.12e-04  1.81e-02
## 344 -6.81e-03  8.79e-04 -3.24e-04  6.94e-04  1.30e-03  3.09e-03  3.91e-03
## 345 -6.46e-01  1.16e-01 -2.88e-02  1.82e-01 -1.38e-02 -4.71e-02 -1.76e-01
## 346 -4.54e-01  7.10e-02 -1.68e-02  1.31e-01 -7.94e-03 -1.71e-02 -1.91e-02
## 347  1.61e-02 -5.29e-03 -1.14e-03  2.21e-02 -6.06e-03 -9.54e-03 -1.49e-02
## 348  1.29e-02 -4.39e-03  1.35e-03 -3.35e-02  7.60e-04 -3.10e-03  2.90e-04
## 349  2.99e-03  1.34e-03 -4.21e-03 -9.52e-05 -2.80e-03  6.67e-03  3.42e-04
## 350  1.71e-02  4.15e-02 -3.44e-02  7.16e-03 -4.29e-02  5.41e-03  1.60e-03
## 356 -1.87e-02  8.16e-02 -7.95e-02 -2.30e-01  1.41e-02  2.17e-01  3.86e-03
## 357 -8.09e-03  5.58e-02 -4.69e-02 -1.00e-01 -2.18e-02  7.05e-02  6.41e-03
## 358 -1.97e-02  6.52e-02 -7.22e-02 -1.33e-01 -7.81e-03  1.47e-01 -1.47e-03
## 359 -1.18e-02  9.21e-02 -6.40e-02 -2.24e-01 -2.99e-03  1.84e-01 -5.07e-03
## 360 -5.32e-02  9.13e-02 -6.99e-02  2.14e-01 -4.27e-02  1.76e-01  1.03e-02
## 361 -9.32e-03  8.63e-02 -4.15e-02 -3.08e-01  1.92e-03  1.95e-01 -1.38e-02
## 362  8.27e-02  5.01e-02 -3.72e-02  1.72e-01 -3.26e-02  1.51e-01  1.92e-02
## 363  1.30e-01  1.18e-01  4.17e-03  2.70e-01 -5.47e-02  1.10e-01  3.44e-02
## 398 -1.59e-02 -5.57e-04  6.18e-03 -4.74e-03  2.45e-03 -1.64e-02  1.92e-03
## 399 -1.08e-02  1.98e-03  5.24e-03 -5.44e-03  2.85e-03 -1.54e-02 -1.53e-03
## 400  8.98e-03 -5.18e-03 -3.77e-03  5.07e-03 -2.47e-03  7.91e-03  1.38e-03
## 401  2.84e-02 -1.95e-02 -6.78e-03  1.78e-02 -1.41e-02  2.04e-02  3.84e-03
## 402  2.96e-02 -3.86e-02 -2.65e-01  5.04e-02  8.54e-02  6.57e-02 -7.31e-03
## 403  7.00e-02 -1.67e-01 -2.65e-01  1.79e-01 -3.52e-01  7.85e-02 -3.13e-03
## 414  4.75e-02  3.94e-02  2.55e-02  7.69e-03 -1.44e-03 -2.69e-02 -4.48e-02
## 415 -8.79e-03 -1.18e-03  8.81e-05 -3.71e-03  1.97e-03  2.74e-03  7.66e-03
## 416 -1.53e-02 -1.17e-03 -1.23e-03 -6.15e-03  3.34e-03  3.68e-03  2.30e-03
## 417 -1.42e-02 -3.51e-03 -8.43e-04 -6.43e-03  2.75e-03  3.28e-03  6.25e-03
## 418 -4.62e-03 -2.72e-03 -1.05e-04 -4.63e-03  7.40e-04  2.00e-03  6.55e-03
## 419 -1.10e-02  1.75e-03 -3.39e-04 -6.04e-03  1.99e-03  2.17e-03  4.75e-03
## 420 -1.88e-02  8.03e-03 -1.46e-03 -3.75e-03  2.44e-03  4.03e-04  2.78e-03
## 421  9.37e-02 -3.54e-02  4.00e-04  3.66e-02 -2.17e-02 -3.45e-02 -7.62e-02
## 422  6.07e-02 -2.53e-02  1.51e-03 -1.45e-03 -4.52e-03 -1.26e-02 -3.15e-02
## 423 -1.52e-01  1.80e-02 -1.15e-02  2.19e-02  1.28e-03 -4.80e-03 -4.69e-02
## 424 -8.43e-03  3.93e-03  1.97e-04 -2.36e-03  1.17e-03  2.00e-03  3.11e-03
## 425  2.18e-03 -1.52e-02 -6.96e-03 -2.11e-02  4.59e-05 -1.85e-02  4.74e-03
## 426  2.58e-03  2.39e-03  1.69e-03 -1.11e-02 -5.35e-03 -5.86e-02  3.30e-03
## 427 -5.52e-03  1.16e-02  1.38e-02  3.18e-02  6.19e-02  9.35e-02 -6.56e-03
## 428  1.89e-03  1.90e-03  4.06e-03 -2.85e-03 -3.56e-03 -6.43e-02  1.61e-03
## 429  1.53e-03  1.21e-02  6.81e-04  5.13e-03 -3.12e-03  7.11e-02  2.96e-03
## 430  1.39e-04 -4.52e-04  4.80e-03  1.54e-03 -3.43e-03 -9.33e-02 -2.19e-03
## 431 -6.72e-04  6.94e-04  4.18e-03  6.59e-03 -4.07e-03 -7.96e-02 -5.98e-03
## 432  1.15e-03  3.78e-03 -5.98e-04  4.80e-03 -2.94e-02 -6.71e-02  3.09e-03
## 433  3.96e-03  3.13e-02  3.09e-03 -1.90e-02 -1.42e-03  1.84e-01  9.13e-03
## 434  9.82e-04  2.23e-02  2.13e-03 -1.79e-02 -3.90e-03  1.73e-01  8.88e-03
## 435 -2.66e-03  1.77e-02  2.38e-03 -1.34e-02 -1.19e-03  1.64e-01  1.40e-02
## 437  1.85e-03  3.32e-03  2.20e-03  1.32e-02  3.04e-03 -2.43e-03 -6.50e-03
## 438  4.95e-04  1.01e-03  6.70e-04  4.05e-03  9.18e-04 -7.55e-04 -1.98e-03
## 439 -7.22e-03 -7.74e-03 -1.05e-02 -3.16e-02 -1.85e-02  3.89e-03  3.69e-02
## 440 -6.77e-03 -7.35e-03 -1.22e-02 -3.18e-02 -2.52e-02  5.74e-03  4.26e-02
## 470  3.60e-02  5.73e-02  2.90e-02 -6.56e-02  5.49e-03 -6.65e-03  4.37e-03
## 471  1.71e-02  1.59e-02  1.51e-02 -3.19e-02  5.78e-03  1.24e-02  7.95e-04
## 472  5.22e-02  2.13e-02  3.87e-02 -6.36e-02  1.62e-02  3.59e-02  9.32e-03
## 473  1.05e-01  1.55e-01  7.88e-02 -7.60e-02 -2.94e-03 -8.97e-03  2.16e-02
## 474  9.61e-02  7.26e-02  3.48e-02 -1.20e-01  1.67e-02  7.49e-02  1.53e-02
## 491 -1.26e-02  1.13e-03  6.98e-02 -1.08e-02 -8.28e-02 -1.91e-02 -1.02e-02
## 492  2.36e-02 -3.19e-02 -1.97e-02 -1.71e-02  2.10e-03  8.00e-03  8.07e-03
## 498 -2.46e-03  2.57e-03 -2.77e-03  1.11e-03 -8.33e-04  2.28e-03  1.12e-04
## 499 -7.22e-03  1.06e-02 -1.16e-02  5.22e-03 -2.18e-02  1.01e-02  2.25e-03
## 500  2.62e-03 -2.41e-03 -5.10e-04  1.50e-05 -5.32e-04 -1.01e-03  1.83e-04
## 501 -3.25e-03  4.01e-04 -1.38e-03  3.29e-03  5.25e-04  5.04e-04  5.06e-05
## 502 -3.66e-02  3.06e-02  7.58e-03  7.46e-02 -2.26e-02 -1.01e-01  4.78e-03
## 503 -2.12e-02  3.02e-02 -7.05e-02  1.56e-02  1.58e-01 -7.23e-02 -1.21e-03
## 504  8.60e-03 -6.69e-04  2.31e-04  3.67e-03 -4.76e-03  1.07e-02  2.94e-03
## 505  1.23e-02  4.97e-03 -2.88e-03  1.55e-02 -1.42e-02  3.07e-02  5.46e-03
## 506  5.82e-03  2.09e-02 -2.33e-01  3.09e-02  1.65e-01  1.04e-01  1.23e-03
## 507  6.82e-03 -6.00e-03  4.12e-02  1.17e-02 -4.95e-03 -2.92e-01  4.58e-03
## 508  6.36e-04  2.39e-02 -2.07e-03 -2.74e-03 -4.21e-03  7.52e-02  1.86e-03
## 509  1.42e-02  8.98e-02  7.93e-03  2.48e-02 -5.24e-03  1.89e-01  1.06e-02
##      dfb.Pplt  dfb.t..1  dfb.t.5.  dfb.I...  dfb.Schl     dffit cov.r   cook.d
## 1   -1.23e-01 -5.11e-02 -5.43e-02 -2.01e-02 -9.85e-02  7.46e-01 0.854 2.88e-02
## 2    4.19e-02 -3.83e-02 -1.02e-02  5.99e-02 -9.82e-02 -3.45e-01 1.037 6.25e-03
## 3    7.99e-02 -7.03e-02 -8.90e-03  9.79e-02 -9.58e-02 -3.97e-01 0.831 8.19e-03
## 4    8.59e-02 -7.11e-02 -1.80e-02  9.48e-02 -9.42e-02 -3.88e-01 0.780 7.81e-03
## 5   -3.98e-02 -5.78e-02 -1.20e-02  2.08e-02  2.53e-02 -2.92e-01 0.894 4.47e-03
## 6   -5.30e-02 -5.32e-02 -1.86e-02 -4.78e-02  4.66e-02 -3.56e-01 0.878 6.61e-03
## 7   -1.20e-02 -4.34e-02 -8.13e-03 -3.34e-02  3.01e-02 -3.30e-01 1.045 5.73e-03
## 8    7.66e-02 -6.17e-02 -2.14e-02 -6.49e-02  9.96e-02 -2.92e-01 0.873 4.46e-03
## 9    7.08e-02 -5.65e-02 -3.13e-02 -7.95e-02  1.16e-01 -3.03e-01 0.874 4.78e-03
## 10   4.84e-02 -3.80e-02 -9.49e-03 -6.24e-02  6.09e-02 -2.04e-01 1.027 2.18e-03
## 11  -2.17e-02  4.56e-01 -4.26e-01 -6.36e-02  7.50e-02 -5.20e-01 1.077 1.42e-02
## 12  -2.45e-02  5.09e-02  6.08e-02 -7.45e-02  6.75e-02 -3.79e-01 1.042 7.53e-03
## 13   4.12e-02  4.84e-02  5.64e-02 -9.45e-02  8.98e-02 -3.73e-01 1.053 7.31e-03
## 14  -3.63e-02  8.04e-02  6.75e-02 -1.81e-01  2.07e-01 -4.27e-01 0.887 9.51e-03
## 15  -3.61e-02  8.38e-02  4.57e-02 -2.28e-01  2.86e-01 -5.35e-01 0.712 1.48e-02
```

```
## 16   5.39e-02  7.05e-02  3.69e-02 -1.99e-01  2.04e-01 -5.84e-01 0.849 1.77e-02
## 17   2.14e-03 -1.65e-03  2.98e-03  8.22e-02 -7.40e-02 -3.42e-01 1.314 6.16e-03
## 18   3.18e-02 -3.69e-03 -6.19e-03  1.20e-01 -1.55e-01 -2.99e-01 1.042 4.71e-03
## 19  -4.29e-02 -1.25e-03 -1.53e-03  1.23e-01 -1.52e-01 -3.16e-01 1.052 5.24e-03
## 20  -4.24e-02 -1.25e-03 -1.03e-03  1.21e-01 -1.47e-01 -3.17e-01 1.043 5.29e-03
## 21   3.83e-02 -2.07e-03 -7.58e-04  1.02e-01 -1.25e-01 -2.85e-01 1.041 4.27e-03
## 22   3.75e-02 -5.87e-03  4.69e-03  7.70e-02 -9.88e-02 -2.14e-01 1.034 2.41e-03
## 23   3.67e-02 -5.65e-03  6.36e-03  5.35e-02 -7.28e-02 -1.69e-01 1.033 1.50e-03
## 24   3.95e-02 -6.12e-03  6.52e-03  7.22e-02 -9.05e-02 -2.14e-01 1.020 2.42e-03
## 25   2.96e-02 -1.93e-03  7.73e-03  3.00e-02 -6.68e-02 -1.47e-01 1.054 1.14e-03
## 26   3.60e-02 -1.82e-03  4.82e-03  1.11e-01 -1.61e-01 -2.28e-01 1.021 2.74e-03
## 27   3.10e-02  2.96e-04  7.04e-03  8.05e-02 -1.39e-01 -2.06e-01 1.054 2.23e-03
## 28  -1.14e-02 -2.17e-02 -3.42e-03 -4.60e-02  2.53e-01  4.48e-01 1.070 1.05e-02
## 29  -3.03e-03 -7.44e-03  1.05e-03 -1.79e-02  7.38e-02  1.26e-01 1.178 8.34e-04
## 30   2.05e-03 -3.13e-04 -1.27e-04 -6.70e-04  2.92e-03 -1.69e-02 1.231 1.51e-05
## 31   1.17e-02 -4.06e-03 -2.43e-03 -1.67e-02  3.66e-02 -1.11e-01 1.087 6.56e-04
## 32   4.43e-03 -9.42e-04 -1.76e-05 -1.43e-02  1.46e-02 -4.61e-02 1.112 1.12e-04
## 33  -2.48e-02  8.85e-03  7.98e-03  3.35e-02 -7.31e-02  2.34e-01 0.993 2.87e-03
## 34  -9.47e-03 -2.49e-03  1.50e-02 -1.11e-02 -1.47e-02  3.44e-01 0.963 6.20e-03
## 35  -2.52e-02  2.11e-03  1.25e-03  1.91e-02 -3.70e-02  1.11e-01 1.085 6.56e-04
## 36  -2.82e-03  4.56e-04  5.45e-04  6.52e-03 -1.02e-02  3.30e-02 1.110 5.74e-05
## 37  -4.03e-03  1.50e-05  3.62e-03 -1.04e-03 -1.46e-02  1.73e-01 1.091 1.58e-03
## 38   1.24e-03 -2.42e-04 -1.44e-03  2.64e-03  2.23e-03 -4.70e-02 1.130 1.17e-04
## 39  -9.87e-04 -8.54e-04  4.08e-03  1.86e-03 -8.11e-03 -1.33e-01 1.100 9.28e-04
## 40  -4.33e-02  5.02e-03 -7.08e-03 -3.37e-02 -4.09e-03  2.95e-01 1.018 4.58e-03
## 41   2.99e-03  4.21e-03 -1.18e-02 -5.88e-04  4.03e-03  2.15e-01 1.056 2.43e-03
## 42   5.29e-04 -3.71e-06 -5.23e-04  9.13e-04  6.07e-04  1.89e-02 1.125 1.89e-05
## 43  -5.52e-04  4.09e-05 -4.91e-05  2.12e-04  1.45e-04  4.97e-03 1.127 1.30e-06
## 44   2.00e-02 -5.96e-02 -5.83e-03 -4.57e-02  2.87e-02 -2.04e-01 0.986 2.18e-03
## 45   1.50e-02  5.08e-01 -4.76e-01 -2.19e-02  1.68e-02 -5.71e-01 1.015 1.71e-02
## 46   7.03e-03  6.62e-02  1.28e-01 -5.25e-02  4.97e-02 -4.92e-01 0.817 1.26e-02
## 47  -1.32e-02  9.46e-02  1.26e-01  5.94e-03  8.59e-03 -7.67e-01 0.839 3.05e-02
## 48   1.13e-02 -4.95e-02  8.77e-03 -4.31e-02  1.98e-02 -2.13e-01 1.033 2.39e-03
## 49  -4.40e-04 -6.50e-03 -1.60e-04 -1.39e-02  1.51e-03 -4.06e-02 1.137 8.69e-05
## 50   1.76e-03 -7.18e-03  1.46e-04 -7.25e-03  2.82e-03 -2.92e-02 1.126 4.51e-05
## 51  -1.65e-02  1.73e-01 -1.73e-01 -2.60e-02  6.06e-02 -2.28e-01 1.257 2.76e-03
## 52   1.53e-02 -8.73e-01  7.59e-01 -5.56e-01  2.15e-01  1.20e+00 0.895 7.45e-02
## 53   1.51e-02 -8.91e-02 -7.91e-02 -3.20e-01  9.46e-02  5.44e-01 1.025 1.55e-02
## 54   6.72e-02 -7.68e-02 -6.78e-02 -2.64e-01  7.58e-02  4.67e-01 1.073 1.14e-02
## 55   1.42e-02  5.69e-01 -6.40e-01 -3.02e-01  8.29e-02  8.44e-01 1.062 3.72e-02
## 56   8.04e-03  5.83e-02  3.00e-02 -3.86e-01  1.62e-01  8.23e-01 0.621 3.46e-02
## 57   1.09e-02  1.00e-02  6.25e-03 -5.20e-02  1.34e-02  1.50e-01 1.099 1.18e-03
## 58   2.85e-04  1.39e-02  6.85e-03 -1.31e-02 -6.38e-02  2.04e-01 1.072 2.19e-03
## 59   9.73e-04  1.15e-02  4.62e-03 -1.33e-02 -5.88e-02  1.67e-01 1.074 1.47e-03
## 60   3.79e-03  1.28e-02  1.88e-03 -1.22e-02 -5.57e-02  1.44e-01 1.067 1.09e-03
## 61   3.72e-03  1.33e-02  8.05e-04 -4.19e-03 -6.25e-02  1.43e-01 1.075 1.08e-03
## 62   3.53e-03  1.32e-02  1.18e-03  9.92e-04 -6.69e-02  1.42e-01 1.080 1.07e-03
## 63   2.70e-03  1.38e-02  1.38e-03 -3.92e-03 -6.09e-02  1.41e-01 1.081 1.04e-03
## 80   2.67e-03  2.20e-04 -1.14e-04 -2.00e-03  1.31e-03  3.56e-02 1.169 6.68e-05
## 81   2.14e-02 -4.21e-03  4.63e-04 -3.02e-03  2.40e-02 -7.37e-02 1.061 2.86e-04
## 82  -1.15e-02 -5.32e-03  2.83e-03 -1.33e-02  3.29e-02 -6.78e-02 1.070 2.43e-04
## 83  -1.18e-02 -3.70e-03  2.14e-04 -1.24e-02  2.84e-02 -6.59e-02 1.066 2.29e-04
## 84   2.30e-02 -1.19e-02 -1.10e-02 -4.98e-03  6.30e-03 -1.78e-01 1.145 1.67e-03
## 85   1.55e-02 -3.60e-03 -2.08e-03 -2.03e-02  2.90e-02 -6.82e-02 1.058 2.46e-04
## 86  -1.13e-02 -4.56e-03 -2.00e-03 -2.03e-02  3.07e-02 -6.79e-02 1.056 2.43e-04
## 87   3.25e-02 -1.99e-02 -2.96e-02 -1.63e-02  2.45e-02 -1.77e-01 0.977 1.64e-03
## 88  -1.40e-02 -1.43e-02 -2.60e-02 -7.83e-02  1.00e-01 -1.94e-01 1.009 1.97e-03
## 89  -1.05e-03 -1.99e-04 -2.70e-04 -5.09e-03  4.21e-03 -7.99e-03 1.103 3.38e-06
## 90  -7.48e-03  1.56e-02  1.14e-02 -2.91e-02  1.53e-02  1.44e-01 1.033 1.10e-03
## 91   6.05e-03  1.19e-02  1.00e-02 -3.68e-04  1.58e-02  1.58e-01 1.073 1.31e-03
## 92  -5.53e-03  2.79e-02  1.49e-02  2.02e-04  8.53e-03  1.99e-01 0.990 2.09e-03
## 93   8.32e-03  8.67e-03  8.29e-03  1.44e-02 -1.58e-03  9.63e-02 1.071 4.90e-04
## 94   8.14e-03  1.43e-02  6.59e-03  1.33e-02 -2.87e-03  1.17e-01 1.061 7.26e-04
## 95  -4.01e-03  1.02e-02  5.74e-03  1.04e-03 -6.61e-03  7.57e-02 1.082 3.02e-04
## 96   1.75e-03  9.18e-03  2.60e-03  1.79e-03 -7.24e-03  5.71e-02 1.088 1.72e-04
## 97  -1.86e-03  5.73e-03  2.93e-03  2.31e-03 -6.24e-03  4.20e-02 1.092 9.31e-05
## 98   3.00e-03 -1.60e-02 -1.61e-02  7.93e-03  3.94e-03 -1.02e-01 1.099 5.46e-04
## 99  -1.44e-03  6.98e-03  3.09e-03  4.40e-03 -1.07e-02  4.91e-02 1.090 1.27e-04
## 100 -2.69e-03  1.04e-02  4.22e-03  8.52e-03 -1.73e-02  6.95e-02 1.083 2.55e-04
## 101 -1.71e-02  4.87e-02  2.45e-02  3.75e-02  2.56e-02 -2.40e-01 1.020 3.03e-03
## 102 -2.18e-03  3.57e-02  2.49e-02  2.72e-02  2.85e-02 -2.07e-01 1.049 2.26e-03
## 103  4.84e-04  8.94e-03  7.97e-03  5.93e-03  3.03e-03 -7.33e-02 1.156 2.84e-04
## 104 -9.51e-03  2.56e-02  1.79e-02  1.01e-02  2.66e-02 -1.54e-01 1.082 1.24e-03
## 105 -6.32e-03  8.11e-03  9.07e-03  1.95e-02 -4.71e-03  7.45e-02 1.083 2.93e-04
## 106  1.60e-02  9.44e-03  8.42e-03  2.02e-02  2.22e-03  9.20e-02 1.088 4.47e-04
## 107  1.15e-02  6.38e-03  7.76e-03  1.28e-02  1.95e-03  6.81e-02 1.093 2.45e-04
## 108 -5.80e-03  1.08e-02  1.83e-02  1.92e-02  1.87e-02  2.01e-01 1.104 2.12e-03
## 109  2.21e-02  1.20e-02  1.28e-02  3.97e-02 -4.92e-03  1.70e-01 1.084 1.53e-03
## 110 -2.11e-03  9.43e-03  1.20e-02  2.11e-02 -1.79e-03  9.45e-02 1.088 4.72e-04
## 111  2.57e-02  1.52e-02  1.78e-02  3.97e-02  7.04e-05  2.16e-01 1.070 2.46e-03
## 112 -8.77e-05  1.35e-03  7.11e-04 -3.69e-05  1.94e-04 -5.28e-03 1.130 1.47e-06
## 113 -8.77e-07  9.75e-06  6.24e-06 -2.64e-06  2.50e-06 -5.09e-05 1.158 1.37e-10
## 114 -1.31e-03  3.22e-02  1.10e-02  6.45e-03 -2.78e-04 -1.63e-01 1.079 1.39e-03
## 115  6.93e-04  3.06e-02  1.12e-02 -6.03e-03  1.04e-02 -1.59e-01 1.082 1.33e-03
## 116  4.38e-05  2.60e-02  9.72e-03 -9.86e-04  1.16e-02 -1.36e-01 1.088 9.77e-04
## 117 -2.15e-03  5.13e-03  5.83e-03  8.80e-03 -6.63e-03  3.42e-02 1.142 6.18e-05
## 118  2.59e-04 -7.77e-04 -9.00e-04 -1.69e-03  1.33e-03 -5.28e-03 1.150 1.47e-06
## 119  7.56e-02  4.73e-02  9.34e-02 -4.96e-01  3.89e-01  8.35e-01 0.828 3.61e-02
## 126 -1.60e-02 -3.22e-02  1.33e-02  4.25e-01 -1.19e-01  7.19e-01 0.744 2.67e-02
## 127 -3.33e-02 -2.34e-03  2.09e-02  2.14e-01 -1.04e-01  4.53e-01 0.980 1.07e-02
## 128 -8.07e-03  4.08e-05 -1.10e-03  2.12e-02 -2.43e-02  4.22e-02 1.103 9.40e-05
## 151 -1.65e-01 -3.63e-03  9.25e-03  7.72e-03  2.06e-02 -3.43e-01 1.183 6.20e-03
## 152 -6.00e-02  7.82e-03 -9.59e-03  5.65e-02 -3.67e-02  2.50e-01 0.970 3.28e-03
## 153 -2.52e-02  3.33e-03 -4.40e-03  2.80e-02 -1.90e-02  1.10e-01 1.080 6.43e-04
## 154  2.79e-02 -2.09e-02 -1.46e-03  1.09e-01  6.16e-02  4.62e-01 1.006 1.12e-02
## 155  2.31e-02 -1.81e-02 -1.83e-03  9.42e-02  4.80e-02  3.91e-01 1.052 8.04e-03
## 156  1.29e-02 -4.79e-03  4.19e-03 -1.70e-02  2.45e-02 -1.44e-01 1.055 1.09e-03
```

```
## 185  2.40e-02 -3.76e-04  1.22e-02  2.79e-02 -4.90e-02 -1.51e-01 1.046 1.20e-03
## 186  1.83e-02  7.00e-04  1.08e-02  3.18e-02 -5.90e-02 -1.42e-01 1.046 1.06e-03
## 187  1.69e-02  1.25e-03  1.01e-02  3.30e-02 -6.03e-02 -1.36e-01 1.052 9.69e-04
## 188 -3.75e-03 -1.41e-02 -6.73e-03 -6.67e-03  7.84e-02  2.48e-01 1.097 3.24e-03
## 189  1.25e-02 -1.02e-03  3.34e-03  2.62e-02 -2.22e-02 -6.90e-02 1.094 2.51e-04
## 190 -1.67e-02 -1.79e-03 -2.89e-03 -2.21e-02  1.54e-02  8.62e-02 1.124 3.92e-04
## 191 -9.64e-03 -5.57e-05 -1.55e-03  1.17e-02 -3.31e-03  4.79e-02 1.097 1.21e-04
## 192 -7.30e-03  5.29e-04 -5.34e-04  2.82e-03 -2.43e-03  2.68e-02 1.093 3.80e-05
## 193 -4.19e-03 -8.02e-04 -4.40e-04  6.40e-03  3.54e-04  3.82e-02 1.095 7.72e-05
## 194 -2.92e-02  5.87e-04 -5.39e-06  9.05e-04 -1.79e-03 -4.06e-02 1.113 8.72e-05
## 195 -2.03e-02  4.56e-06  4.70e-04 -7.14e-04  3.91e-05 -2.95e-02 1.119 4.60e-05
## 196 -1.90e-02  3.69e-05  3.92e-04  3.24e-05 -9.86e-04 -2.69e-02 1.118 3.82e-05
## 197  3.06e-03 -1.33e-02  6.18e-04  6.54e-02  1.36e-02  2.14e-01 1.085 2.41e-03
## 198  2.29e-04 -5.73e-06 -1.68e-05  2.87e-05  6.93e-06  3.34e-04 1.122 5.88e-09
## 199  1.39e-03 -9.56e-06  3.56e-04 -2.44e-04  6.74e-04 -8.44e-03 1.091 3.76e-06
## 200 -1.98e-04  5.47e-06  1.63e-05 -2.07e-05  3.34e-06 -2.80e-04 1.118 4.14e-09
## 201  2.40e-01 -4.73e-03 -1.76e-02 -1.80e-04 -1.75e-02  3.13e-01 0.896 5.12e-03
## 202  2.78e-01 -7.84e-03 -2.19e-02  9.09e-03 -3.35e-02  3.61e-01 0.831 6.79e-03
## 219 -1.52e-02  2.21e-02  2.26e-03  2.54e-02  2.71e-02  2.53e-01 1.082 3.38e-03
## 220 -1.31e-02  1.58e-02  4.20e-03  3.00e-02 -7.01e-03  8.93e-02 1.061 4.21e-04
## 221 -1.76e-02  1.72e-02  6.39e-03  4.85e-02 -2.91e-02  1.09e-01 1.048 6.21e-04
## 222 -2.03e-02  1.46e-02  4.94e-03  3.53e-02 -2.15e-02  9.54e-02 1.070 4.81e-04
## 223  8.14e-02  3.86e-02  1.19e-03  1.03e-01 -2.91e-02  4.64e-01 1.001 1.13e-02
## 224 -2.30e-02  2.62e-02 -3.29e-03  1.01e-01 -4.75e-02  3.22e-01 1.071 5.47e-03
## 225 -2.43e-03 -3.81e-03  1.22e-02  3.61e-03 -1.90e-02 -1.78e-01 1.151 1.68e-03
## 226 -1.16e-02 -3.87e-03  1.04e-02  1.36e-02 -5.25e-02 -2.42e-01 1.170 3.09e-03
## 227 -1.86e-03 -6.55e-03  1.06e-02 -2.06e-03 -2.80e-02 -2.27e-01 1.173 2.72e-03
## 228 -2.68e-03 -4.48e-03  2.43e-03 -2.10e-02 -2.14e-02 -1.55e-01 1.105 1.26e-03
## 229  3.10e-03 -3.08e-02 -2.22e-02  1.56e-02 -6.90e-02 -3.54e-01 0.983 6.58e-03
## 230  1.58e-04 -1.59e-02  7.25e-03  4.49e-02 -5.62e-02 -1.84e-01 1.050 1.77e-03
## 231  7.68e-03 -1.50e-02  1.06e-02  1.53e-02 -1.70e-02 -1.17e-01 1.058 7.18e-04
## 232  1.75e-03 -3.80e-03  3.68e-03  3.43e-03 -3.67e-03 -2.57e-02 1.096 3.50e-05
## 233 -1.70e-03 -2.73e-03  3.23e-03  8.47e-03 -9.32e-03 -8.01e-02 1.145 3.39e-04
## 234  9.07e-06 -9.36e-05  8.85e-05  8.55e-05 -1.17e-04 -7.07e-04 1.105 2.64e-08
## 235  7.29e-05 -1.67e-03  1.28e-03  1.36e-03 -2.08e-03 -1.15e-02 1.106 6.95e-06
## 236 -4.34e-03  1.83e-02 -6.12e-03 -2.27e-02  6.73e-02  3.44e-01 1.139 6.25e-03
## 237  2.76e-03 -3.05e-02 -4.40e-02 -2.64e-02  4.83e-02  2.19e-01 1.188 2.54e-03
## 238 -2.10e-03  2.62e-02  3.70e-02  1.88e-02 -1.08e-02 -1.39e-01 1.096 1.03e-03
## 239 -3.08e-03  2.54e-02  1.71e-03  2.27e-03  1.19e-02  1.04e-01 1.064 5.75e-04
## 240 -5.02e-03  3.55e-02  1.04e-02  2.16e-02 -1.16e-02  1.38e-01 1.038 9.98e-04
## 245  1.73e-03 -4.14e-04  6.15e-04 -4.50e-03  5.45e-03 -8.56e-03 1.123 3.87e-06
## 246 -9.04e-03 -2.07e-04 -5.28e-04  3.28e-02 -3.74e-02  1.35e-01 1.313 9.63e-04
## 247 -7.74e-03 -1.28e-03  2.77e-04  2.86e-02 -3.12e-02  1.09e-01 1.294 6.25e-04
## 248 -8.25e-03 -3.36e-03 -1.72e-03  6.67e-02 -4.49e-02  1.16e-01 1.150 7.12e-04
## 249 -5.81e-02  1.32e-02 -4.45e-03  5.78e-02 -1.72e-01  4.83e-01 1.158 1.23e-02
## 250 -4.64e-02  6.27e-03 -1.34e-02  1.14e-01 -1.51e-01  2.11e-01 1.021 2.34e-03
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## 259  1.70e-03 -6.45e-04  5.21e-03  1.08e-02 -1.80e-02 -5.94e-02 1.102 1.86e-04
## 260 -9.02e-03 -4.26e-05  4.78e-03  1.57e-02 -2.50e-02 -5.38e-02 1.104 1.53e-04
## 261  7.17e-03 -1.75e-02 -1.71e-02  9.19e-02 -1.48e-01 -3.02e-01 1.001 4.79e-03
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## 263 -1.63e-02 -2.77e-03  1.01e-02  2.11e-02 -5.90e-02 -1.31e-01 1.076 9.06e-04
## 264 -3.83e-03  1.12e-02  1.70e-02  2.84e-02 -2.84e-02  1.48e-01 1.146 1.15e-03
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## 269  5.28e-03 -2.65e-01  2.52e-01 -7.47e-02  7.45e-02 -3.45e-01 1.218 6.27e-03
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## 273 -1.37e-02  2.18e-03 -4.23e-03  2.08e-02 -2.86e-02  6.83e-02 1.102 2.47e-04
## 274 -6.30e-02  8.27e-03 -1.18e-02  5.21e-02 -8.09e-02  2.91e-01 0.864 4.41e-03
## 275 -4.43e-02  3.13e-03 -1.52e-02  3.53e-02 -3.84e-02  2.06e-01 0.992 2.23e-03
## 276 -3.99e-02  4.30e-03 -1.50e-02  4.24e-02 -4.05e-02  1.95e-01 1.011 2.01e-03
## 279 -2.16e-03 -7.60e-06 -4.84e-04 -8.06e-03  5.32e-03  1.89e-02 1.132 1.89e-05
## 280 -1.12e-02 -2.79e-03 -2.31e-03 -3.50e-02  3.64e-02  1.06e-01 1.121 5.93e-04
## 281 -1.16e-02 -3.89e-03 -4.12e-03 -4.72e-02  4.70e-02  1.44e-01 1.113 1.09e-03
## 282 -9.33e-03 -3.70e-03 -2.60e-03 -4.23e-02  4.16e-02  1.23e-01 1.121 8.01e-04
## 283  1.09e-02 -2.21e-03 -2.56e-03 -3.18e-02  2.01e-02  7.04e-02 1.124 2.61e-04
## 284  3.39e-02 -1.31e-02 -3.04e-02 -6.16e-02  2.68e-02  1.74e-01 1.036 1.60e-03
## 285  2.97e-02 -1.32e-02 -3.71e-02 -5.94e-02  1.07e-02  1.96e-01 1.029 2.02e-03
## 286 -7.38e-02 -2.45e-02 -7.00e-02 -6.28e-02 -5.33e-02  3.86e-01 0.857 7.75e-03
## 287  1.76e-02 -1.44e-02 -4.33e-02 -1.92e-02 -5.85e-02  2.69e-01 1.047 3.80e-03
## 288  1.25e-02 -1.33e-02 -3.24e-02 -3.30e-02 -4.38e-02  1.97e-01 1.050 2.04e-03
## 289  4.81e-03 -2.70e-03 -4.22e-03 -2.05e-02 -7.79e-03  8.82e-02 1.155 4.11e-04
## 290 -6.31e-02  3.66e-03 -2.29e-02 -5.05e-02 -2.75e-02  4.08e-01 1.096 8.75e-03
## 293  2.61e-03 -2.30e-03  8.15e-04  7.88e-03 -9.56e-03 -1.02e-01 1.218 5.46e-04
## 294 -1.75e-02  2.69e-03  7.15e-03  1.81e-03  3.35e-02  2.03e-01 1.329 2.17e-03
## 295  4.03e-02 -3.94e-03 -2.05e-03  1.45e-02 -6.43e-03 -2.52e-01 1.198 3.34e-03
## 296  3.13e-03 -3.59e-03  1.54e-03  5.67e-03  8.11e-03  9.26e-02 1.383 4.53e-04
## 297  6.39e-03  4.14e-03 -3.43e-03  8.72e-03 -3.27e-02 -1.97e-01 1.185 2.05e-03
## 298  3.98e-02 -2.60e-03 -1.35e-03 -1.01e-02  6.07e-02  3.34e-01 1.007 5.86e-03
## 299 -1.48e-02 -1.55e-03 -4.51e-04  1.30e-03  3.63e-02  2.30e-01 1.081 2.79e-03
## 300 -8.22e-03 -7.96e-04 -1.82e-04 -4.59e-04  3.80e-04 -9.08e-02 1.139 4.35e-04
## 301 -1.09e-02  6.58e-04 -1.73e-03 -2.89e-03  2.34e-03 -1.13e-01 1.117 6.79e-04
## 317  2.00e-01  2.05e-02 -1.14e-02 -1.21e-02 -5.82e-04  3.01e-01 1.323 4.78e-03
## 318 -4.00e-01 -5.63e-01  5.30e-01  5.83e-02  4.07e-02  1.01e+00 1.290 5.30e-02
## 319  8.13e-02  1.45e-02  2.95e-02 -1.38e-02  2.85e-02 -1.85e-01 1.297 1.80e-03
## 320 -1.65e-01  2.62e-02  4.03e-02  1.81e-02 -2.34e-03 -2.74e-01 1.325 3.98e-03
```

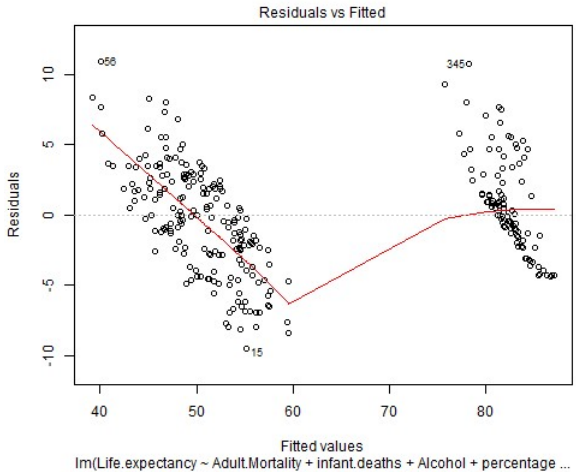
```
## 321  3.09e-02 -5.03e-02  5.51e-02 -5.62e-03  7.34e-03 -8.16e-02 1.431 3.51e-04
## 322  4.34e-02  5.61e-03 -1.31e-03  2.93e-03 -2.19e-03  7.48e-02 1.277 2.96e-04
## 323 -3.52e-02  6.34e-03  9.62e-04  1.06e-02 -7.38e-03  7.26e-02 1.277 2.78e-04
## 324 -8.21e-02  9.39e-03  6.11e-03  3.66e-02 -8.10e-03  1.90e-01 1.344 1.91e-03
## 325 -3.66e-01 -4.35e-02 -4.60e-02 -4.02e-01  2.85e-01 -9.38e-01 0.983 4.58e-02
## 326 -2.55e-01 -3.68e-02 -3.95e-02 -1.76e-01  8.38e-02 -6.53e-01 1.129 2.23e-02
## 327  2.05e-01 -1.46e-02  1.70e-02 -1.74e-01  1.34e-01  5.80e-01 1.220 1.77e-02
## 328 -4.76e-01 -7.64e-03  6.86e-02 -5.41e-01  5.40e-01  1.34e+00 0.986 9.36e-02
## 329  1.12e-01 -9.34e-03  1.06e-02 -6.01e-02  5.70e-02  3.96e-01 1.382 8.28e-03
## 330 -1.91e-01 -1.12e-02  1.88e-02  1.53e-02 -6.50e-03  5.25e-01 1.782 1.45e-02
## 344  5.10e-03 -5.82e-04  2.66e-03  3.91e-03 -3.25e-03 -2.31e-02 1.101 2.81e-05
## 345 -3.67e-02 -3.65e-02 -3.96e-02  1.21e-01  1.53e-01  7.94e-01 0.631 3.23e-02
## 346 -2.45e-02 -2.48e-02 -2.83e-02  8.14e-02  7.01e-02  5.25e-01 0.823 1.43e-02
## 347 -1.51e-02  1.53e-03 -9.75e-03 -1.27e-02  4.02e-03  7.78e-02 1.093 3.19e-04
## 348 -6.24e-03  3.44e-04 -3.86e-03 -1.49e-02  9.92e-03  4.53e-02 1.121 1.09e-04
## 349 -1.56e-03  1.27e-04 -3.30e-04  5.74e-03  1.36e-03 -2.11e-02 1.098 2.34e-05
## 350  1.66e-02 -6.76e-03 -2.27e-02  4.81e-02  2.04e-02 -2.00e-01 1.044 2.11e-03
## 356  3.38e-02 -3.87e-02 -1.60e-02  9.50e-03 -1.65e-02 -4.08e-01 0.912 8.70e-03
## 357  1.83e-02 -3.19e-02 -3.00e-02  2.85e-02 -2.15e-02 -2.46e-01 1.074 3.20e-03
## 358  2.40e-02 -3.21e-02 -1.65e-02  2.01e-02 -1.05e-02 -2.83e-01 1.017 4.21e-03
## 359  1.26e-02 -4.28e-02 -9.76e-03  4.96e-02  1.58e-02 -3.53e-01 0.927 6.52e-03
## 360  1.75e-02 -3.84e-02 -1.64e-02  1.08e-01 -6.79e-02 -3.38e-01 0.928 5.99e-03
## 361  5.18e-02 -4.88e-02 -1.12e-02  4.28e-02  3.24e-02 -4.19e-01 0.905 9.18e-03
## 362 -2.10e-02 -2.22e-02 -2.26e-02  6.45e-02 -7.30e-02 -2.97e-01 0.958 4.62e-03
## 363  4.55e-03 -5.01e-02 -7.77e-02  1.49e-01 -1.67e-01 -5.09e-01 0.823 1.35e-02
## 398 -3.68e-02  7.92e-03 -2.64e-02  2.62e-03 -2.17e-03 -7.80e-02 1.107 3.21e-04
## 399  1.22e-02  1.17e-01 -1.17e-01  8.16e-03 -4.18e-03 -1.34e-01 1.286 9.43e-04
## 400 -9.77e-03 -2.20e-03  1.53e-02  9.19e-04  1.50e-04  3.77e-02 1.125 7.49e-05
## 401 -3.10e-02 -3.88e-03  5.43e-02  1.01e-02  3.75e-03  1.23e-01 1.112 8.03e-04
## 402  9.10e-02 -9.77e-03  1.16e-01  1.53e-02  3.42e-02  3.86e-01 1.140 7.83e-03
## 403  1.43e-01  1.07e-02  2.34e-01  3.95e-02  9.76e-02  8.35e-01 0.983 3.64e-02
## 414 -5.90e-03  1.06e-03  5.45e-03  2.66e-02  5.50e-02  2.36e-01 1.125 2.94e-03
## 415  6.03e-03 -5.37e-04  1.31e-03  3.65e-03 -7.30e-03 -2.87e-02 1.101 4.34e-05
## 416  6.63e-03 -8.30e-04  2.51e-03  6.23e-03 -6.45e-03 -3.57e-02 1.086 6.74e-05
## 417 -3.41e-02 -5.19e-04  4.21e-03  7.01e-03 -4.44e-03 -5.45e-02 1.095 1.57e-04
## 418 -1.34e-02 -7.09e-05  2.06e-03 -1.45e-04 -9.63e-05 -2.39e-02 1.110 3.02e-05
## 419 -2.45e-02 -7.54e-04  3.63e-03  4.74e-03  4.88e-04 -4.01e-02 1.098 8.49e-05
## 420  8.84e-03 -2.00e-03  3.20e-03  5.95e-03  2.79e-03 -4.50e-02 1.085 1.07e-04
## 421 -5.19e-02  5.11e-03 -3.40e-02 -7.25e-03 -1.95e-02  3.10e-01 0.835 5.00e-03
## 422  1.35e-01  2.92e-03 -2.74e-02 -4.13e-02 -1.55e-02  2.41e-01 0.952 3.04e-03
## 423  7.88e-02 -1.07e-02 -1.22e-02  3.19e-02  9.84e-03  1.98e-01 1.135 2.07e-03
## 424 -1.89e-02 -2.83e-04  4.40e-03  5.28e-03  3.81e-03 -3.56e-02 1.100 6.68e-05
## 425  5.09e-03  2.46e-03  5.94e-03 -5.80e-03  6.78e-03 -6.00e-02 1.072 1.90e-04
## 426  4.88e-03 -4.01e-03  1.64e-03  2.53e-04  4.10e-03 -7.81e-02 1.115 3.22e-04
## 427 -5.83e-04 -7.71e-03 -1.21e-02  1.10e-02 -1.92e-02  1.97e-01 1.124 2.04e-03
## 428  3.39e-03 -3.97e-03  1.51e-03 -9.91e-04  6.39e-03 -7.91e-02 1.138 3.30e-04
## 429 -5.36e-03  1.63e-03 -1.31e-02  2.07e-02 -2.78e-02  9.21e-02 1.110 4.48e-04
## 430  4.97e-03 -6.64e-03  2.87e-03 -1.09e-02  1.84e-02 -1.09e-01 1.169 6.25e-04
## 431  4.66e-03 -6.34e-03  2.46e-03 -9.97e-03  1.85e-02 -9.33e-02 1.179 4.60e-04
## 432  1.59e-03 -4.26e-03 -1.71e-03 -7.62e-03  1.54e-02 -1.01e-01 1.247 5.42e-04
## 433 -1.17e-02  1.49e-02 -2.48e-02  7.57e-02 -8.65e-02  2.33e-01 1.076 2.86e-03
## 434 -1.31e-02  1.79e-02 -2.18e-02  6.64e-02 -8.31e-02  2.25e-01 1.079 2.67e-03
## 435 -1.55e-02  2.24e-02 -1.69e-02  6.80e-02 -8.55e-02  2.22e-01 1.072 2.58e-03
## 437 -3.82e-03  1.44e-03 -3.65e-04  1.09e-02 -7.10e-03  2.42e-02 1.119 3.10e-05
## 438 -1.25e-03  2.88e-04 -1.42e-07  3.28e-03 -2.12e-03  7.35e-03 1.120 2.86e-06
## 439 -6.78e-04 -3.11e-03 -2.40e-03 -2.37e-02  2.07e-02 -1.13e-01 1.150 6.68e-04
## 440 -1.67e-03 -2.53e-03 -3.33e-03 -2.04e-02  1.66e-02 -1.31e-01 1.163 9.01e-04
## 470  3.26e-02 -6.13e-03 -7.81e-04  6.22e-02 -3.62e-02 -1.63e-01 1.103 1.40e-03
## 471  1.60e-02  4.67e-04  6.05e-03  3.06e-02 -2.09e-02 -7.98e-02 1.126 3.36e-04
## 472 -2.51e-02  4.50e-03  1.62e-02  9.61e-02 -8.39e-02 -2.04e-01 1.082 2.20e-03
## 473  8.74e-02 -2.58e-03 -4.44e-03  1.93e-01 -1.59e-01 -4.38e-01 0.926 1.00e-02
## 474  7.61e-02  2.34e-02  3.29e-02  7.38e-02 -5.09e-02 -4.62e-01 0.999 1.12e-02
## 491  1.09e-02  8.99e-04 -1.83e-04 -9.43e-03  3.96e-02  1.30e-01 1.164 8.91e-04
## 492  6.32e-03 -4.73e-03  6.76e-03 -4.55e-03 -2.06e-02 -9.68e-02 1.061 4.95e-04
## 498 -1.55e-03 -1.26e-03  1.22e-03  4.06e-03 -6.74e-04 -1.12e-02 1.093 6.65e-06
## 499  2.42e-03 -7.58e-04  1.88e-03  1.25e-02 -4.50e-03 -6.04e-02 1.146 1.93e-04
## 500 -1.26e-03  9.52e-04 -1.39e-03 -3.62e-03  2.19e-03  9.48e-03 1.092 4.75e-06
## 501 -2.22e-03 -9.26e-04  1.43e-03  3.04e-03 -2.32e-03 -1.28e-02 1.094 8.67e-06
## 502  1.54e-02 -2.95e-02 -1.54e-02  7.15e-02 -5.61e-02 -2.30e-01 1.005 2.78e-03
## 503 -8.17e-03 -2.08e-02 -6.66e-03  4.27e-02 -4.38e-02 -2.16e-01 1.156 2.45e-03
## 504 -4.86e-03  3.99e-03 -5.55e-03 -2.65e-03 -1.49e-04  4.09e-02 1.097 8.86e-05
## 505  8.69e-03  8.69e-03 -1.16e-02  2.88e-04 -4.97e-03  8.31e-02 1.089 3.64e-04
## 506  3.20e-02  7.99e-03 -1.81e-02 -4.26e-03  2.02e-02  3.51e-01 1.122 6.50e-03
## 507  1.03e-02  4.82e-02  5.39e-02  7.91e-02 -3.98e-02 -3.53e-01 1.036 6.55e-03
## 508  1.59e-02 -2.25e-02 -3.11e-02 -2.85e-03  1.37e-03  1.25e-01 1.140 8.28e-04
## 509  3.58e-02  3.80e-02 -7.13e-03  6.68e-02 -1.70e-02  3.20e-01 0.951 5.36e-03
##       hat inf
## 1   0.1042
## 2   0.0718
## 3   0.0367
## 4   0.0296   *
## 5   0.0279
## 6   0.0364
## 7   0.0713
## 8   0.0254
## 9   0.0272
## 10  0.0353
## 11  0.1268
## 12  0.0816
## 13  0.0844
## 14  0.0508
## 15  0.0427   *
## 16  0.0723
## 17  0.2081   *
## 18  0.0630
## 19  0.0705
## 20  0.0677
```

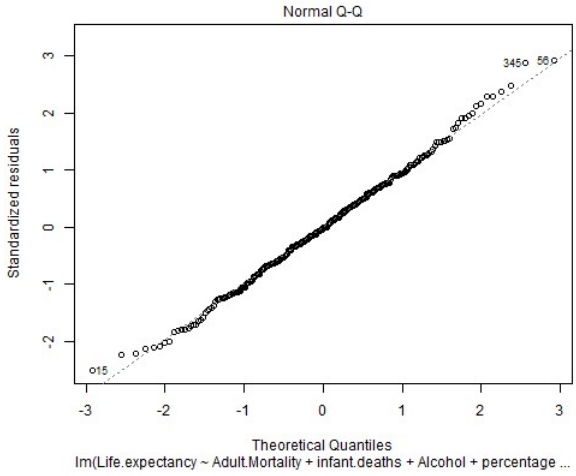
```
## 21  0.0591
## 22  0.0399
## 23  0.0290
## 24  0.0360
## 25  0.0303
## 26  0.0394
## 27  0.0449
## 28  0.1083
## 29  0.0975
## 30  0.1274   *
## 31  0.0352
## 32  0.0376
## 33  0.0335
## 34  0.0500
## 35  0.0344
## 36  0.0348
## 37  0.0528
## 38  0.0517
## 39  0.0476
## 40  0.0540
## 41  0.0478
## 42  0.0453
## 43  0.0472
## 44  0.0259
## 45  0.1149
## 46  0.0502
## 47  0.1046
## 48  0.0394
## 49  0.0571
## 50  0.0469
## 51  0.1617   *
## 52  0.2008   *
## 53  0.1127
## 54  0.1134
## 55  0.1878   *
## 56  0.0713   *
## 57  0.0514
## 58  0.0514
## 59  0.0434
## 60  0.0343
## 61  0.0375
## 62  0.0397
## 63  0.0398
## 80  0.0823
## 81  0.0144
## 82  0.0161
## 83  0.0139
## 84  0.0845
## 85  0.0120
## 86  0.0115
## 87  0.0192
## 88  0.0284
## 89  0.0266
## 90  0.0234
## 91  0.0406
## 92  0.0257
## 93  0.0241
## 94  0.0254
## 95  0.0239
## 96  0.0226
## 97  0.0216
## 98  0.0401
## 99  0.0220
## 100 0.0226
## 101 0.0418
## 102 0.0431
## 103 0.0752
## 104 0.0436
## 105 0.0238
## 106 0.0312
## 107 0.0286
## 108 0.0659
## 109 0.0484
## 110 0.0318
## 111 0.0536
## 112 0.0492
## 113 0.0727
## 114 0.0441
## 115 0.0448
## 116 0.0420
## 117 0.0606
## 118 0.0656
## 119 0.1149   *
## 126 0.0759   *
## 127 0.0781
## 128 0.0299
## 151 0.1382
## 152 0.0321
## 153 0.0314
## 154 0.0879
## 155 0.0883
## 156 0.0297
## 185 0.0285
## 186 0.0265
## 187 0.0266
## 188 0.0734
## 189 0.0294
```

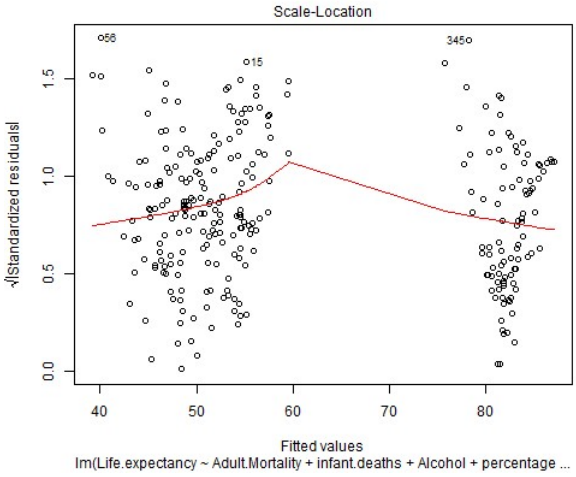
```
## 190 0.0531
## 191 0.0264
## 192 0.0195
## 193 0.0235
## 194 0.0379
## 195 0.0412
## 196 0.0403
## 197 0.0599
## 198 0.0428
## 199 0.0158
## 200 0.0389
## 201 0.0317
## 202 0.0311
## 219 0.0681
## 220 0.0182
## 221 0.0189
## 222 0.0233
## 223 0.0869
## 224 0.0796
## 225 0.0883
## 226 0.1118
## 227 0.1111
## 228 0.0557
## 229 0.0572
## 230 0.0379
## 231 0.0241
## 232 0.0224
## 233 0.0677
## 234 0.0281
## 235 0.0289
## 236 0.1162
## 237 0.1186
## 238 0.0470
## 239 0.0232
## 240 0.0230
## 245 0.0438
## 246 0.1863   *
## 247 0.1730   *
## 248 0.0764
## 249 0.1536
## 250 0.0355
## 251 0.0402
## 252 0.0406
## 253 0.2603   *
## 254 0.0442
## 255 0.0417
## 256 0.0270
## 257 0.0361
## 258 0.0485
## 259 0.0328
## 260 0.0326
## 261 0.0506
## 262 0.1174   *
## 263 0.0348
## 264 0.0792
## 265 0.0638
## 266 0.0964
## 267 0.0608
## 268 0.0580
## 269 0.1575   *
## 270 0.0597
## 271 0.0936
## 272 0.0343
## 273 0.0342
## 274 0.0243
## 275 0.0274
## 276 0.0293
## 279 0.0514
## 280 0.0551
## 281 0.0581
## 282 0.0583
## 283 0.0510
## 284 0.0311
## 285 0.0341
## 286 0.0384
## 287 0.0576
## 288 0.0411
## 289 0.0760
## 290 0.1102
## 293 0.1230   *
## 294 0.2011   *
## 295 0.1304
## 296 0.2249   *
## 297 0.1128
## 298 0.0595
## 299 0.0621
## 300 0.0646
## 301 0.0540
## 317 0.2080   *
## 318 0.2977   *
## 319 0.1810   *
## 320 0.2062   *
## 321 0.2503   *
## 322 0.1605   *
## 323 0.1606   *
## 324 0.2088   *
## 325 0.1795   *
```

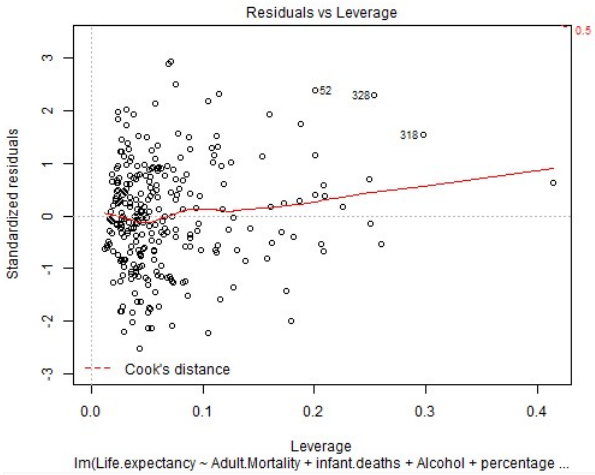
```
## 326 0.1752
## 327 0.2003   *
## 328 0.2536   *
## 329 0.2489   *
## 330 0.4139   *
## 344 0.0260
## 345 0.0687   *
## 346 0.0569
## 347 0.0307
## 348 0.0447
## 349 0.0227
## 350 0.0397
## 356 0.0518
## 357 0.0626
## 358 0.0509
## 359 0.0442
## 360 0.0414
## 361 0.0527
## 362 0.0392
## 363 0.0541
## 398 0.0398
## 399 0.1699   *
## 400 0.0474
## 401 0.0526
## 402 0.1252
## 403 0.1593   *
## 414 0.0852
## 415 0.0266
## 416 0.0165
## 417 0.0265
## 418 0.0332
## 419 0.0260
## 420 0.0180
## 421 0.0242
## 422 0.0271
## 423 0.0824
## 424 0.0268
## 425 0.0148
## 426 0.0457
## 427 0.0760
## 428 0.0624
## 429 0.0446
## 430 0.0887
## 431 0.0944
## 432 0.1422   *
## 433 0.0604
## 434 0.0597
## 435 0.0556
## 437 0.0409
## 438 0.0406
## 439 0.0759
## 440 0.0880
## 470 0.0565
## 471 0.0539
## 472 0.0559
## 473 0.0608
## 474 0.0858
## 491 0.0887
## 492 0.0200
## 498 0.0178
## 499 0.0659
## 500 0.0169
## 501 0.0183
## 502 0.0354
## 503 0.0984
## 504 0.0252
## 505 0.0296
## 506 0.1091
## 507 0.0735
## 508 0.0716
## 509 0.0424
```

```
#View(temp)
#diagnostic plots
plot(g)
```


Residuals vs Fitted
Residuals
Fitted values
lm(Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol + percentage ...


Normal Q-Q
Standardized residuals
Theoretical Quantiles
lm(Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol + percentage ...


Scale-Location
√|Standardized residuals|
Fitted values
lm(Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol + percentage ...

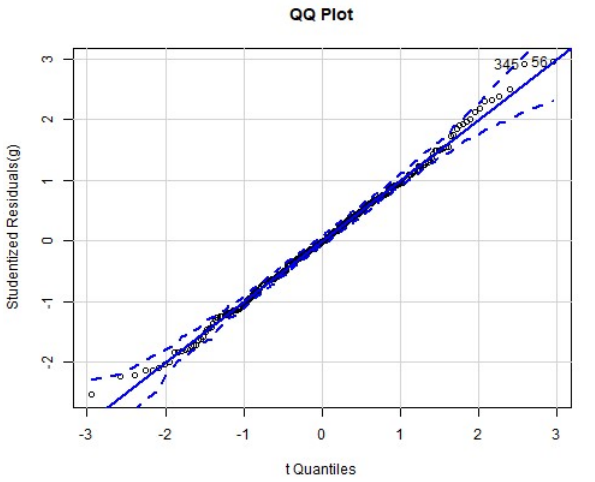



```
# Here in the graph Normal Q-Q we can see the plot of standardized residulas aganist all the variables.
#The graph of standardized residulas and Leverage is shown in which the country numbered (52,328,318) seen to be outliers.
#The scale-Location gives the plot between sqrt of residuals and fitted values in which we can see two different groups #fromed which are for develope
# Plot of residulas and the leverage is also observed here.

# Assessing Outliers
outlierTest(g)
```

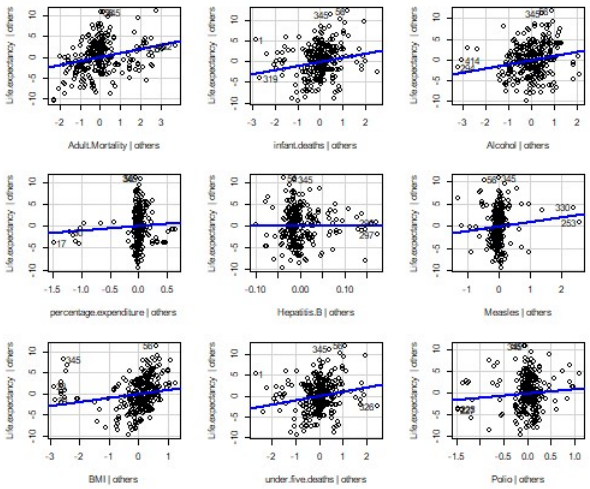
```
## No Studentized residuals with Bonferroni p < 0.05
## Largest |rstudent|:
##    rstudent unadjusted p-value Bonferroni p
## 56 2.969296          0.0032582      0.92859
```

```
qqPlot(g, main="QQ Plot")# it says that they have two sd diff
```

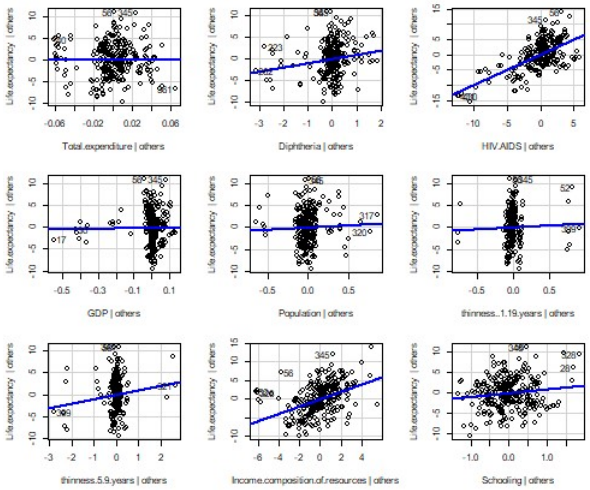



```
##  56 345
##  56 221
```

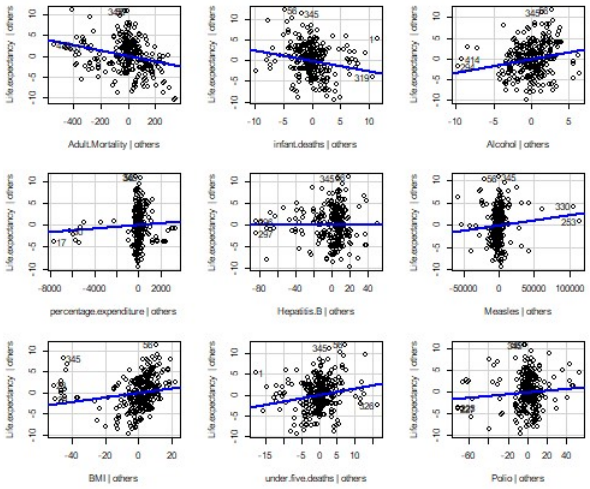
```
#As we can see in the QQplot that residuals are closer to the reference line and do not form a independent class.
#As all the points falls approximately inside the referenece life we can assume normality.
leveragePlots(g) # leverage plots
```

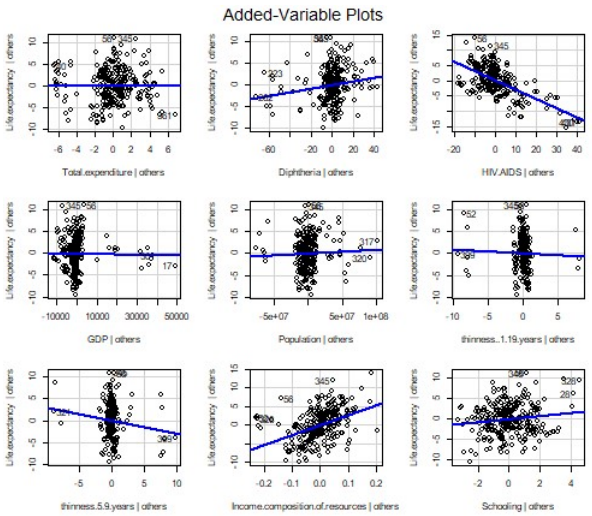


Leverage Plots



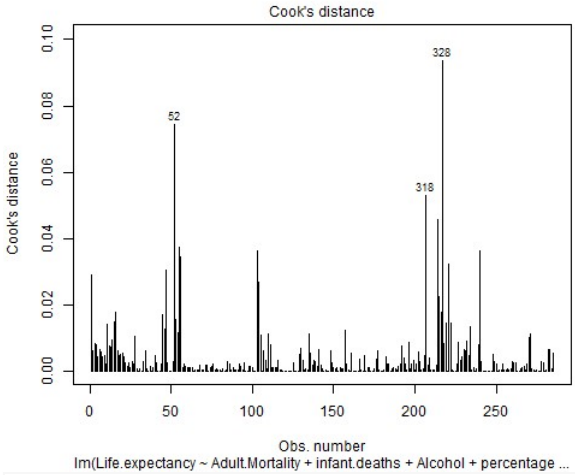

```
# Influential Observations
# added variable plots
avPlots(g)
```






```
# shows for which quantity which are outliers

# Cook's D plot
#Cook's D plot  Data points with larger outliers and/or high leverage may distort the outcome and accuracy of a regression
# identify D values > 4/(n-k-1)
cutoff <- 4/((nrow(new.life)-length(g$coefficients)-2))
plot(g, which=4, cook.levels=cutoff)
```




```
# Influence Plot
influencePlot(g, id.method="identify", main="Influence Plot", sub="Circle size is proportial to Cook's Distance" )
```

```
## Warning in plot.window(...): "id.method" is not a graphical parameter
```

```
## Warning in plot.xy(xy, type, ...): "id.method" is not a graphical parameter
```

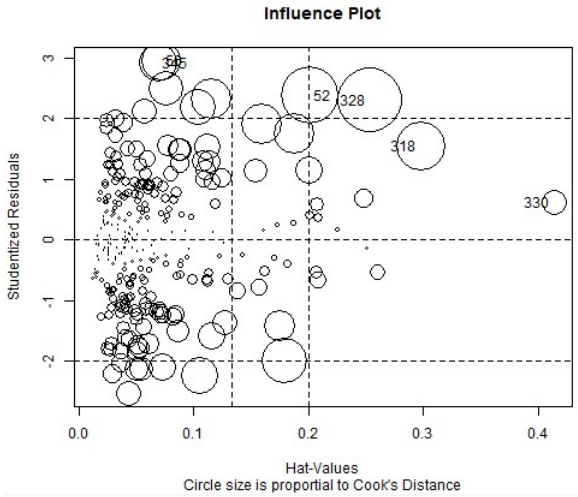
```
## Warning in axis(side = side, at = at, labels = labels, ...): "id.method" is not
## a graphical parameter

## Warning in axis(side = side, at = at, labels = labels, ...): "id.method" is not
## a graphical parameter
```

```
## Warning in box(...): "id.method" is not a graphical parameter
```

```
## Warning in title(...): "id.method" is not a graphical parameter
```

```
## Warning in plot.xy(xy.coords(x, y), type = type, ...): "id.method" is not a
## graphical parameter
```



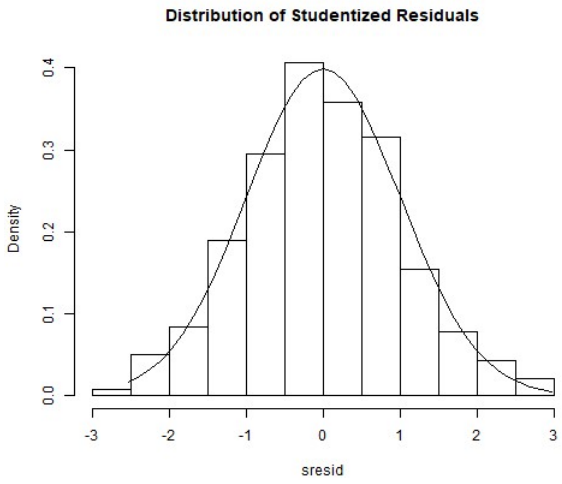

```
##       StudRes        Hat      CookD
## 52  2.3946982 0.20084826 0.07452890
## 56  2.9692956 0.07129332 0.03460551
## 318 1.5448744 0.29767286 0.05296323
## 328 2.3065975 0.25360043 0.09362061
## 330 0.6247611 0.41386476 0.01453890
## 345 2.9231727 0.06874829 0.03228517
```

```
#Here we can observe that the country numbered 318 and 330 have high leverage but is not an outlier.
#while 52 and 328 are #outliers with high leverage.
#56 and 345 are outliers with acceptable leverage.


# Normality of Residuals
# distribution of studentized residuals

sresid <- studres(g)
#We can say that most ideal values should fall between -1 and 1

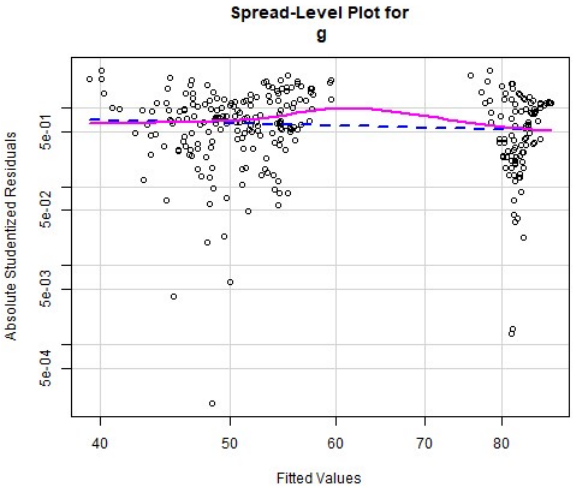
hist(sresid, freq=FALSE,
     main="Distribution of Studentized Residuals")
xfit<-seq(min(sresid),max(sresid),length=40)
yfit<-dnorm(xfit)
lines(xfit, yfit)
```




```
#Non-constant Error Variance
# Evaluate homoscedasticity
# non-constant error variance test
ncvTest(g)
```

```
## Non-constant Variance Score Test
## Variance formula: ~ fitted.values
## Chisquare = 1.184771, Df = 1, p = 0.27639
```

```
# plot studentized residuals vs. fitted values
spreadLevelPlot(g)
```




```
##
## Suggested power transformation:  1.394282
```

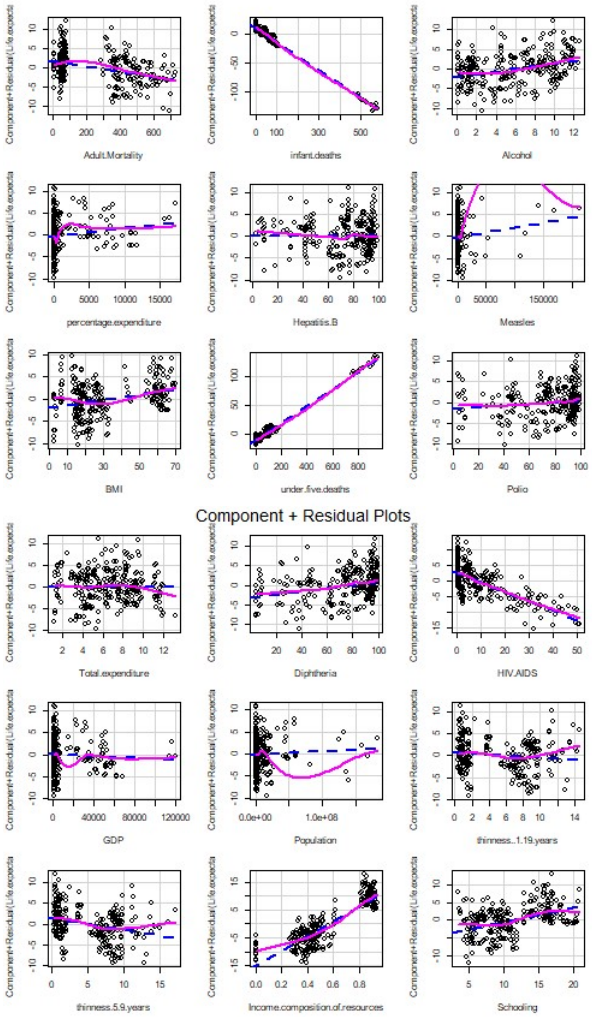
```
#Multi-collinearity
# Evaluate Collinearityssss
vif(g) # variance inflation factors
```

```
##                  Adult.Mortality                      infant.deaths
##                         2.113581                         1537.683221
##                          Alcohol            percentage.expenditure
##                         3.002014                          7.212717
##                     Hepatitis.B                            Measles
##                         1.708879                          2.175613
##                              BMI                 under.five.deaths
##                         2.653872                       1581.496364
##                             Polio                Total.expenditure
##                         2.625266                          1.371317
##                       Diphtheria                           HIV.AIDS
##                         3.180693                          1.764380
##                              GDP                        Population
##                         7.982114                          1.683772
##             thinness..1.19.years                 thinness.5.9.years
##                         6.988954                          6.926893
## Income.composition.of.resources                         Schooling
##                        14.500298                         10.967010
```

```
sqrt(vif(g)) > 2 # problem? # anytg more than 2 is a prob
```

```
##                  Adult.Mortality                      infant.deaths
##                            FALSE                               TRUE
##                          Alcohol            percentage.expenditure
##                            FALSE                               TRUE
##                      Hepatitis.B                            Measles
##                            FALSE                              FALSE
##                              BMI                 under.five.deaths
##                            FALSE                               TRUE
##                            Polio                Total.expenditure
##                            FALSE                              FALSE
##                        Diphtheria                           HIV.AIDS
##                            FALSE                              FALSE
##                              GDP                        Population
##                             TRUE                              FALSE
##             thinness..1.19.years                 thinness.5.9.years
##                             TRUE                               TRUE
## Income.composition.of.resources                         Schooling
##                             TRUE                               TRUE
```

```
#Nonlinearity
# component + residual plot
crPlots(g)
```




```
# Ceres plots
#ceresPlots(g)
# compare models
f1<-g

#After reviewing the anaova(g) we need to remove population and total expenditure one by one and
#then see the comparied analysis

# Removing population
l1<-lm(Life.expectancy~Adult.Mortality + infant.deaths + Alcohol+percentage.expenditure+Hepatitis.B+
         Measles+BMI+under.five.deaths+Polio+Total.expenditure+Diphtheria+HIV.AIDS+GDP+
         thinness..1.19.years+thinness.5.9.years+Income.composition.of.resources+Schooling, data=new.life)
anova(l1)
```

```
## Analysis of Variance Table
##
## Response: Life.expectancy
##                                   Df  Sum Sq Mean Sq   F value    Pr(>F)
## Adult.Mortality                    1 29908.5 29908.5 1996.4707 < 2.2e-16 ***
## infant.deaths                      1  5747.3  5747.3  383.6479 < 2.2e-16 ***
## Alcohol                            1 18169.8 18169.8 1212.8819 < 2.2e-16 ***
## percentage.expenditure             1  1138.8  1138.8   76.0207 3.048e-16 ***
## Hepatitis.B                        1   472.7   472.7   31.5529 4.869e-08 ***
## Measles                            1   159.0   159.0   10.6164 0.0012661 **
## BMI                                1  4012.2  4012.2  267.8257 < 2.2e-16 ***
## under.five.deaths                  1   166.8   166.8   11.1335 0.0009683 ***
## Polio                              1   341.6   341.6   22.8028 2.963e-06 ***
## Total.expenditure                  1     4.8     4.8    0.3190 0.5726979
## Diphtheria                         1   389.1   389.1   25.9756 6.552e-07 ***
## HIV.AIDS                           1  3885.6  3885.6  259.3747 < 2.2e-16 ***
## GDP                                1   158.6   158.6   10.5856 0.0012865 **
## thinness..1.19.years               1   749.5   749.5   50.0279 1.330e-11 ***
## thinness.5.9.years                 1   140.2   140.2    9.3573 0.0024469 **
## Income.composition.of.resources    1  3179.0  3179.0  212.2066 < 2.2e-16 ***
## Schooling                          1    80.7    80.7    5.3888 0.0210200 *
## Residuals                        267  3999.8    15.0
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
#Removing Total Expenditure
l2<-lm(Life.expectancy~Adult.Mortality + infant.deaths + Alcohol+percentage.expenditure+Hepatitis.B+
         Measles+BMI+under.five.deaths+Polio+Diphtheria+HIV.AIDS+GDP+
         thinness..1.19.years+thinness.5.9.years+Income.composition.of.resources+Schooling, data=new.life)
anova(l2)
```

```
## Analysis of Variance Table
##
## Response: Life.expectancy
##                                  Df  Sum Sq Mean Sq   F value    Pr(>F)
## Adult.Mortality                   1 29908.5 29908.5 2003.8047 < 2.2e-16 ***
## infant.deaths                     1  5747.3  5747.3  385.0573 < 2.2e-16 ***
## Alcohol                           1 18169.8 18169.8 1217.3374 < 2.2e-16 ***
## percentage.expenditure            1  1138.8  1138.8   76.2999 2.690e-16 ***
## Hepatitis.B                       1   472.7   472.7   31.6688 4.601e-08 ***
## Measles                           1   159.0   159.0   10.6554 0.0012401 **
## BMI                               1  4012.2  4012.2  268.8095 < 2.2e-16 ***
## under.five.deaths                 1   166.8   166.8   11.1744 0.0009475 ***
## Polio                             1   341.6   341.6   22.8866 2.841e-06 ***
## Diphtheria                        1   393.9   393.9   26.3911 5.374e-07 ***
## HIV.AIDS                          1  3880.2  3880.2  259.9642 < 2.2e-16 ***
## GDP                               1   157.1   157.1   10.5278 0.0013252 **
## thinness..1.19.years              1   749.1   749.1   50.1881 1.232e-11 ***
## thinness.5.9.years                1   139.7   139.7    9.3570 0.0024464 **
## Income.composition.of.resources   1  3181.4  3181.4  213.1443 < 2.2e-16 ***
## Schooling                         1    85.8    85.8    5.7494 0.0171785 *
## Residuals                       268  4000.1    14.9
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

```r
anova(f1, l2)
```

```
## Analysis of Variance Table
##
## Model 1: Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Hepatitis.B + Measles + BMI + under.five.deaths +
##     Polio + Total.expenditure + Diphtheria + HIV.AIDS + GDP +
##     Population + thinness..1.19.years + thinness.5.9.years +
##     Income.composition.of.resources + Schooling
## Model 2: Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Hepatitis.B + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + GDP + thinness..1.19.years +
##     thinness.5.9.years + Income.composition.of.resources + Schooling
##   Res.Df    RSS Df Sum of Sq      F Pr(>F)
## 1    266 3991.9
## 2    268 4000.1 -2   -8.2438 0.2747   0.76
```

```r
step <- stepAIC(g, direction="both")# step1 take corelation. step2 take highest corellation
```

```
## Start:  AIC=790.27
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Hepatitis.B + Measles + BMI + under.five.deaths +
##     Polio + Total.expenditure + Diphtheria + HIV.AIDS + GDP +
##     Population + thinness..1.19.years + thinness.5.9.years +
##     Income.composition.of.resources + Schooling
##
##                                  Df Sum of Sq    RSS    AIC
## - Total.expenditure               1      0.14 3992.0 788.28
## - Hepatitis.B                     1      0.45 3992.3 788.30
## - GDP                             1      1.84 3993.7 788.40
## - thinness..1.19.years            1      6.38 3998.3 788.72
## - Population                      1      7.96 3999.8 788.83
## - percentage.expenditure          1     13.40 4005.3 789.22
## <none>                                      3991.9 790.27
## - Measles                         1     29.49 4021.4 790.36
## - Polio                           1     32.18 4024.1 790.55
## - thinness.5.9.years              1     60.72 4052.6 792.57
## - Schooling                       1     82.49 4074.4 794.10
## - Diphtheria                      1    120.67 4112.6 796.75
## - under.five.deaths               1    137.80 4129.7 797.94
## - BMI                             1    144.76 4136.6 798.42
## - infant.deaths                   1    151.42 4143.3 798.88
## - Alcohol                         1    157.34 4149.2 799.28
## - Adult.Mortality                 1    301.86 4293.7 809.04
## - Income.composition.of.resources 1    904.95 4896.8 846.50
## - HIV.AIDS                        1   2270.92 6262.8 916.62
##
## Step:  AIC=788.28
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Hepatitis.B + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + GDP + Population + thinness..1.19.years +
##     thinness.5.9.years + Income.composition.of.resources + Schooling
##
##                                  Df Sum of Sq    RSS    AIC
## - Hepatitis.B                     1      0.43 3992.5 786.31
## - GDP                             1      1.88 3993.9 786.41
## - thinness..1.19.years            1      6.41 3998.4 786.73
## - Population                      1      8.10 4000.1 786.85
## - percentage.expenditure          1     13.76 4005.8 787.26
## <none>                                      3992.0 788.28
## - Measles                         1     29.35 4021.4 788.36
## - Polio                           1     32.43 4024.5 788.58
```

```
## + Total.expenditure               1      0.14 3991.9 790.27
## - thinness.5.9.years              1     60.66 4052.7 790.57
## - Schooling                       1     87.16 4079.2 792.43
## - Diphtheria                      1    122.50 4114.5 794.89
## - under.five.deaths               1    137.72 4129.7 795.94
## - BMI                             1    146.81 4138.8 796.57
## - infant.deaths                   1    151.36 4143.4 796.88
## - Alcohol                         1    157.45 4149.5 797.30
## - Adult.Mortality                 1    305.00 4297.0 807.26
## - Income.composition.of.resources  1    920.51 4912.5 845.41
## - HIV.AIDS                        1   2270.79 6262.8 914.62
##
## Step:  AIC=786.31
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + GDP + Population + thinness..1.19.years +
##     thinness.5.9.years + Income.composition.of.resources + Schooling
##
##                                  Df Sum of Sq    RSS    AIC
## - GDP                             1      1.80 3994.3 784.44
## - thinness..1.19.years            1      6.28 3998.7 784.75
## - Population                      1      7.98 4000.4 784.88
## - percentage.expenditure          1     13.62 4006.1 785.28
## <none>                                      3992.5 786.31
## - Measles                         1     29.62 4022.1 786.41
## - Polio                           1     32.07 4024.5 786.59
## + Hepatitis.B                     1      0.43 3992.0 788.28
## + Total.expenditure               1      0.13 3992.3 788.30
## - thinness.5.9.years              1     61.09 4053.6 788.64
## - Schooling                       1     86.74 4079.2 790.43
## - Diphtheria                      1    135.54 4128.0 793.82
## - under.five.deaths               1    138.48 4130.9 794.03
## - BMI                             1    147.11 4139.6 794.62
## - infant.deaths                   1    152.08 4144.5 794.96
## - Alcohol                         1    157.07 4149.5 795.30
## - Adult.Mortality                 1    304.66 4297.1 805.27
## - Income.composition.of.resources  1    927.67 4920.1 843.85
## - HIV.AIDS                        1   2280.19 6272.6 913.07
##
## Step:  AIC=784.44
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + Population + thinness..1.19.years +
##     thinness.5.9.years + Income.composition.of.resources + Schooling
##
##                                  Df Sum of Sq    RSS    AIC
## - thinness..1.19.years            1      6.25 4000.5 782.88
## - Population                      1      7.46 4001.7 782.97
## <none>                                      3994.3 784.44
## - percentage.expenditure          1     29.01 4023.3 784.50
## - Measles                         1     29.50 4023.8 784.53
## - Polio                           1     32.07 4026.3 784.72
## + GDP                             1      1.80 3992.5 786.31
## + Hepatitis.B                     1      0.35 3993.9 786.41
## + Total.expenditure               1      0.17 3994.1 786.42
## - thinness.5.9.years              1     60.99 4055.3 786.75
## - Schooling                       1     85.63 4079.9 788.48
## - Diphtheria                      1    135.29 4129.6 791.93
## - under.five.deaths               1    137.14 4131.4 792.06
## - infant.deaths                   1    150.67 4144.9 792.99
## - BMI                             1    151.16 4145.4 793.02
## - Alcohol                         1    158.37 4152.6 793.52
## - Adult.Mortality                 1    303.66 4297.9 803.32
## - Income.composition.of.resources  1    927.83 4922.1 841.97
## - HIV.AIDS                        1   2278.68 6272.9 911.08
##
## Step:  AIC=782.88
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + Population + thinness.5.9.years +
##     Income.composition.of.resources + Schooling
##
##                                  Df Sum of Sq    RSS    AIC
## - Population                      1      7.32 4007.8 781.40
## <none>                                      4000.5 782.88
## - Measles                         1     29.21 4029.7 782.95
## - percentage.expenditure          1     29.28 4029.8 782.96
## - Polio                           1     32.43 4032.9 783.18
## + thinness..1.19.years            1      6.25 3994.3 784.44
## + GDP                             1      1.77 3998.7 784.75
## + Hepatitis.B                     1      0.24 4000.3 784.86
## + Total.expenditure               1      0.20 4000.3 784.87
## - Schooling                       1     84.45 4085.0 786.83
## - under.five.deaths               1    133.50 4134.0 790.24
## - Diphtheria                      1    135.50 4136.0 790.37
## - infant.deaths                   1    146.95 4147.5 791.16
## - BMI                             1    155.62 4156.1 791.76
## - Alcohol                         1    158.93 4159.4 791.98
## - thinness.5.9.years              1    283.92 4284.4 800.42
## - Adult.Mortality                 1    310.34 4310.9 802.17
## - Income.composition.of.resources  1    941.41 4941.9 841.11
## - HIV.AIDS                        1   2284.95 6285.5 909.65
##
## Step:  AIC=781.4
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + thinness.5.9.years + Income.composition.of.resources +
```

```
##     Schooling
##
##                                  Df Sum of Sq    RSS    AIC
## <none>                                        4007.8 781.40
## - percentage.expenditure          1     29.04 4036.9 781.46
## - Measles                         1     30.16 4038.0 781.54
## - Polio                           1     33.15 4041.0 781.75
## + Population                      1      7.32 4000.5 782.88
## + thinness..1.19.years            1      6.11 4001.7 782.97
## + GDP                             1      1.26 4006.6 783.31
## + Total.expenditure               1      0.34 4007.5 783.38
## + Hepatitis.B                     1      0.17 4007.7 783.39
## - Schooling                       1     83.48 4091.3 785.28
## - under.five.deaths               1    129.17 4137.0 788.44
## - Diphtheria                      1    134.11 4141.9 788.78
## - infant.deaths                   1    141.68 4149.5 789.30
## - BMI                             1    162.99 4170.8 790.76
## - Alcohol                         1    163.80 4171.6 790.82
## - thinness.5.9.years              1    280.07 4287.9 798.65
## - Adult.Mortality                 1    311.80 4319.6 800.75
## - Income.composition.of.resources 1    950.89 4958.7 840.08
## - HIV.AIDS                        1   2289.58 6297.4 908.19
```

```
step$anova # display results
```

```
## Stepwise Model Path
## Analysis of Deviance Table
##
## Initial Model:
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Hepatitis.B + Measles + BMI + under.five.deaths +
##     Polio + Total.expenditure + Diphtheria + HIV.AIDS + GDP +
##     Population + thinness..1.19.years + thinness.5.9.years +
##     Income.composition.of.resources + Schooling
##
## Final Model:
## Life.expectancy ~ Adult.Mortality + infant.deaths + Alcohol +
##     percentage.expenditure + Measles + BMI + under.five.deaths +
##     Polio + Diphtheria + HIV.AIDS + thinness.5.9.years + Income.composition.of.resources +
##     Schooling
##
##
##                     Step Df  Deviance Resid. Df Resid. Dev      AIC
## 1                                          266   3991.885 790.2660
## 2    - Total.expenditure  1 0.1438365       267   3992.029 788.2763
## 3          - Hepatitis.B  1 0.4328875       268   3992.462 786.3072
## 4                  - GDP  1 1.8040420       269   3994.266 784.4359
## 5 - thinness..1.19.years  1 6.2455791       270   4000.512 782.8812
## 6           - Population  1 7.3176359       271   4007.829 781.4020
```

```
#The step wise regression provides us with the final suitable model for multiple regression which include
#Adult.Mortality, infant.deaths,Alcohol,percentage.expenditure, Measles ,BMI ,under.five.deaths ,
#Polio , Diphtheria , HIV.AIDS , thinness.5.9.years,Income.composition.of.resources, Schooling

predict.lm(g, data.frame(Adult.Mortality=66, infant.deaths=1 ,Alcohol=10.62,percentage.expenditure=7172.275229,Hepatitis.B=94,
                         Measles=104,BMI=63.4,under.five.deaths=      1,Polio=92,Total.expenditure=9.5,Diphtheria=92,HIV.AIDS=0.1,GDP=42742.99898,Po
                         thinness..1.19.years=0.7,thinness.5.9.years=0.6,Income.composition.of.resources=0.925,Schooling=19.1) )
```

```
##        1
## 85.42839
```

```
predict.lm(g3, data.frame(Adult.Mortality=66, infant.deaths=1 ,Alcohol=10.62,percentage.expenditure=7172.275229,Hepatitis.B=94,
                         Measles=104,BMI=63.4,under.five.deaths=      1,Polio=92,Total.expenditure=9.5,Diphtheria=92,HIV.AIDS=0.1,GDP=42742.99898,Po
                         thinness..1.19.years=0.7,thinness.5.9.years=0.6,Income.composition.of.resources=0.925,Schooling=19.1) )
```

```
##        1
## 85.25312
```

```
#Now finally we try to predict the output of the model using the predict functionn to see how well the model is.
```