R code:

```
library(sparklyr)
> sc <- spark_connect(master="local")
> myremotedata <- copy_to(sc, covid19_clean_data)

> confirmedmodel <- ml_linear_regression(x=myremotedata, formula=deaths~confirmed)
> summary(confirmedmodel)

> urbpoppropmod <- ml_linear_regression(x=myremotedata,
formula=deaths~URBAN_POP_PROP)
> summary(urbpoppropmod)

> bedurbpropmod <- ml_linear_regression(x=myremotedata,
formula=deaths~Hospital_beds_per_10_000_population+ URBAN_POP_PROP)
> summary(bedurbpropmod)

> myremotedata <- myremotedata %>% mutate(Confirmed_Bed_Prop=
confirmed/Hospital_beds_per_10_000_population)
> confbedmodel <- ml_linear_regression(x=myremotedata,
formula=deaths~Confirmed_Bed_Prop)
> summary(confbedmodel)

> totlpopmod <- ml_linear_regression(x=myremotedata, formula=deaths~POP_TOTL)
> summary(totlpopmod)

> myremotedata <- myremotedata %>% mutate(Confirmed_TotlPop= confirmed/POP_TOTL)
> conftotlpropmod <- ml_linear_regression(x=myremotedata,
formula=deaths~Confirmed_TotlPop)
> summary(conftotlpropmod)

> myremotedata <- myremotedata %>%
mutate(BedConfirmedProp=Hospital_beds_per_10_000_population/confirmed)
> temp <- myremotedata %>% na.omit()
> bedconfpropmod <- ml_linear_regression(x=temp, formula=deaths~BedConfirmedProp)
> summary(bedconfpropmod)

# I had to change Beds/Confirmed from project 1 to Confirmed/Beds because I didn't realize
that # there were N/A's with Beds/Confirmed
```

```
> summary(confirmedmodel)
Deviance Residuals:
        Min    1Q  Median    3Q      Max
-232222  -1297  -1215  -1146  171906

Coefficients:
 (Intercept)    confirmed
1.215213e+03 2.006521e-02

R-Squared: 0.7861
Root Mean Squared Error: 10570

> summary(urbpoppropmod)
Deviance Residuals:
   Min   1Q Median    3Q     Max
-12538  -7377  -4085   -810 433777

Coefficients:
   (Intercept) URBAN_POP_PROP
       -3072.795      15610.718

R-Squared: 0.02353
Root Mean Squared Error: 22580

> summary(bedurbpropmod)
Deviance Residuals:
        Min    1Q  Median    3Q      Max
-13578.4  -7122.3  -4105.1   -471.6 433101.7

Coefficients:
             (Intercept) Hospital_beds_per_10_000_population
             -2767.52855                        -40.69877
             URBAN_POP_PROP
             17034.39732

R-Squared: 0.02504
Root Mean Squared Error: 22570

> summary(confbedmodel)
Deviance Residuals:
        Min    1Q Median    3Q     Max
-198951  -4446  -4386  -3137  364425

Coefficients:
```

```
        (Intercept) Confirmed_Bed_Prop
       4446.4642300          0.0989141


R-Squared: 0.3346
Root Mean Squared Error: 18640

> summary(totlpopmod)
Deviance Residuals:
   Min  1Q Median   3Q    Max
-61968  -4757  -4371  -3348 431154

Coefficients:
 (Intercept)     POP_TOTL
4.345211e+03 4.203558e-05

R-Squared: 0.0786
Root Mean Squared Error: 21940

> summary(conftotlpropmod)
Deviance Residuals:
   Min   1Q Median    3Q     Max
-52354  -3406  -2755  -2656 416372

Coefficients:
       (Intercept) Confirmed_TotlPop
        2747.576       321290.719

R-Squared: 0.08072
Root Mean Squared Error: 21910

> summary(bedconfpropmod)
Deviance Residuals:
   Min   1Q Median    3Q     Max
 -6838  -6769  -6479  -3959 437255

Coefficients:
       (Intercept) BedConfirmedProp
        6839.1236     -242.2563

R-Squared: 0.001328
Root Mean Squared Error: 23880
```

> spark_web(sc)