Shiny Appliation - mtcars

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Reproducible Pitch for mtcars

- This project consits of two parts. First, we need to create a Shiny application and deploy it on Rstudio's servers. Second, we should use the Rstudio Presenter to prepare a reproducible pitch presentation about the application.
- Please find datasets, source code, and outputs from the following link. URL: https://github.com/jianleisun/data-science/tree/master/Shiny_Application_and_Reprodu
- This presentation includes a brief introduction to the data input and source code.

Dataset Information - mtcars

Motor Trend Car Road Tests

The data was extracted from the 1974 Motor Trend US magazine, and comprises fuel consumption and 10 aspects of automobile design and performance for 32 automobiles (1973–74 models).

Reference

Henderson and Velleman (1981), Building multiple regression models interactively. Biometrics, 37, 391–411.

```
##                mpg cyl disp  hp drat    wt  qsec vs am ge
## Mazda RX4     21.0   6  160 110 3.90 2.620 16.46  0  1
## Mazda RX4 Wag 21.0   6  160 110 3.90 2.875 17.02  0  1
## Datsun 710    22.8   4  108  93 3.85 2.320 18.61  1  1
```

Dataset Nomenclature

32 observations and 11 variables.

Index	Field	Detail
[, 1]	mpg	Miles/(US) gallon
[, 2]	cyl	Number of cylinders
[, 3]	disp	Displacement (cu.in.)
[, 4]	hp	Gross horsepower
[, 5]	drat	Rear axle ratio
[, 6]	wt	Weight (lb/1000)
[, 7]	qsec	1/4 mile time
[, 8]	vs	V/S
[, 9]	am	Transmission (0 = automatic, 1 = manual)
[,10]	gear	Number of forward gears
[,11]	carb	Number of carburetors

Analysis - main code

```
shinyServer(function(input, output) {

    ...

    fit <- reactive({
        lm(as.formula(txt1()), data=data)
    })

    ...

    output$fit <- renderPrint({
        summary(fit())
    })

    output$mpgPlot <- renderPlot({
        with(data, {
            plot(as.formula(txt1()))
            abline(fit(), col=2)
        })
    })

})
```