rmagic-rpy2-test

April 28, 2015

```
In [1]: import numpy as np
        X = np.array([0,1,2,3,4])
        Y = np.array([3,5,4,6,7])

In [2]: %load_ext rpy2.ipython

In [3]: %Rpush X Y
        %R lm(Y~X)$coef

Out[3]: <FloatVector - Python:0x10e27d8c0 / R:0x7ffe04988e08>
        [3.200000, 0.900000]

In [4]: Xr = X - X.mean(); Yr = Y - Y.mean()
        slope = (Xr*Yr).sum() / (Xr**2).sum()
        intercept = Y.mean() - X.mean() * slope
        (intercept, slope)

Out[4]: (3.2000000000000002, 0.90000000000000002)

In [5]: %R resid(lm(Y~X)); coef(lm(X~Y))

Out[5]: <FloatVector - Python:0x10e27d710 / R:0x7ffe049e16d0>
        [-2.500000, 0.900000]

In [6]: b = %R a=resid(lm(Y~X))
        %Rpull a
        print a
        %R -o a

1    2    3    4    5
-0.2  0.9 -1.0  0.1  0.2

In [7]: v1 = %R plot(X,Y); print(summary(lm(Y~X))); vv=mean(X)*mean(Y)
        print 'v1 is:', v1
        v2 = %R mean(X)*mean(Y)
        print 'v2 is:', v2

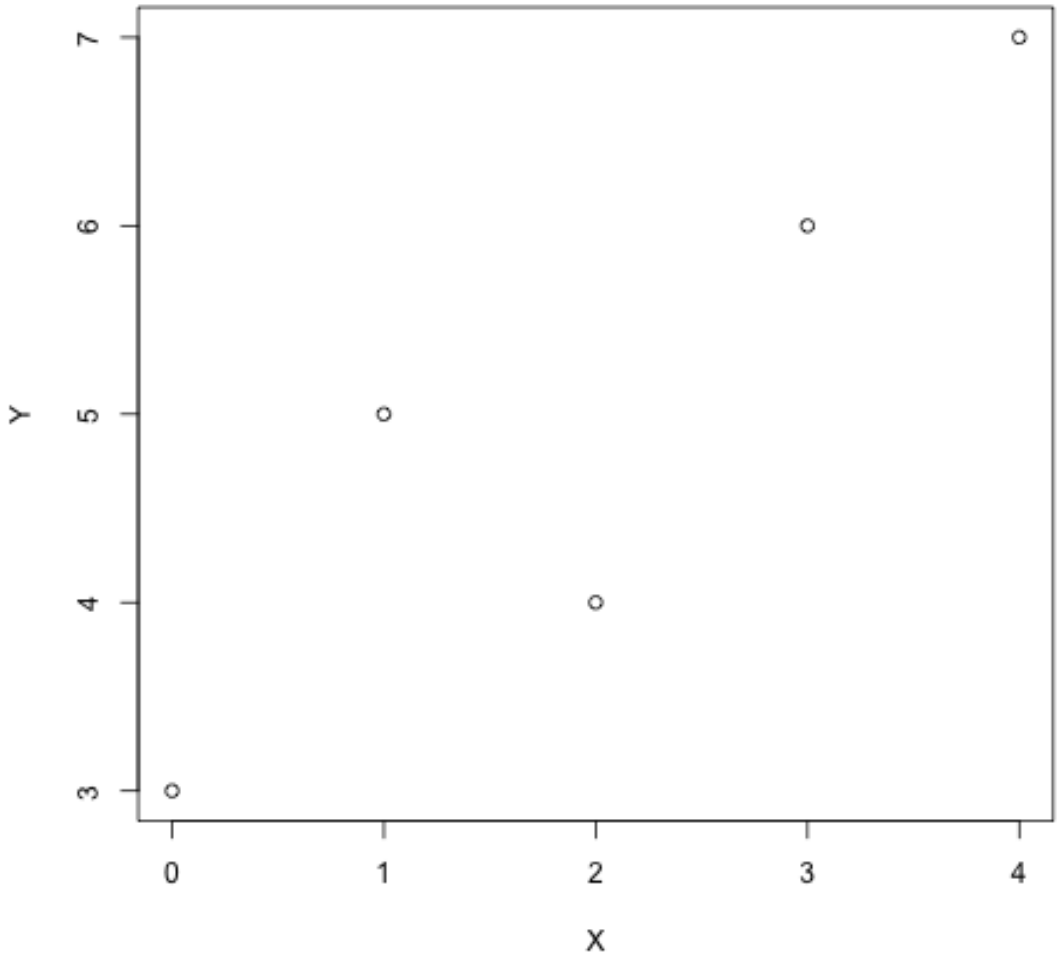

Call:
lm(formula = Y ~ X)

Residuals:
   1    2    3    4    5
-0.2  0.9 -1.0  0.1  0.2

Coefficients:
```

```
            Estimate Std. Error t value Pr(>|t|)
(Intercept)   3.2000     0.6164   5.191   0.0139 *
X             0.9000     0.2517   3.576   0.0374 *
---
Signif. codes:  0 ‘***’ 0.001 ‘**’ 0.01 ‘*’ 0.05 ‘.’ 0.1 ‘ ’ 1

Residual standard error: 0.7958 on 3 degrees of freedom
Multiple R-squared:   0.81,Adjusted R-squared:  0.7467
F-statistic: 12.79 on 1 and 3 DF,  p-value: 0.03739
```




```
v1 is: [1] 10

v2 is: [1] 10
```

```
In [8]: %%R -i X,Y -o XYcoef
        XYlm = lm(Y~X)
        XYcoef = coef(XYlm)
        print(summary(XYlm))
        par(mfrow=c(2,2))
        plot(XYlm)
```

```
Call:
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Residuals:
   1    2    3    4    5
-0.2  0.9 -1.0  0.1  0.2

Coefficients:
            Estimate Std. Error t value Pr(>|t|)
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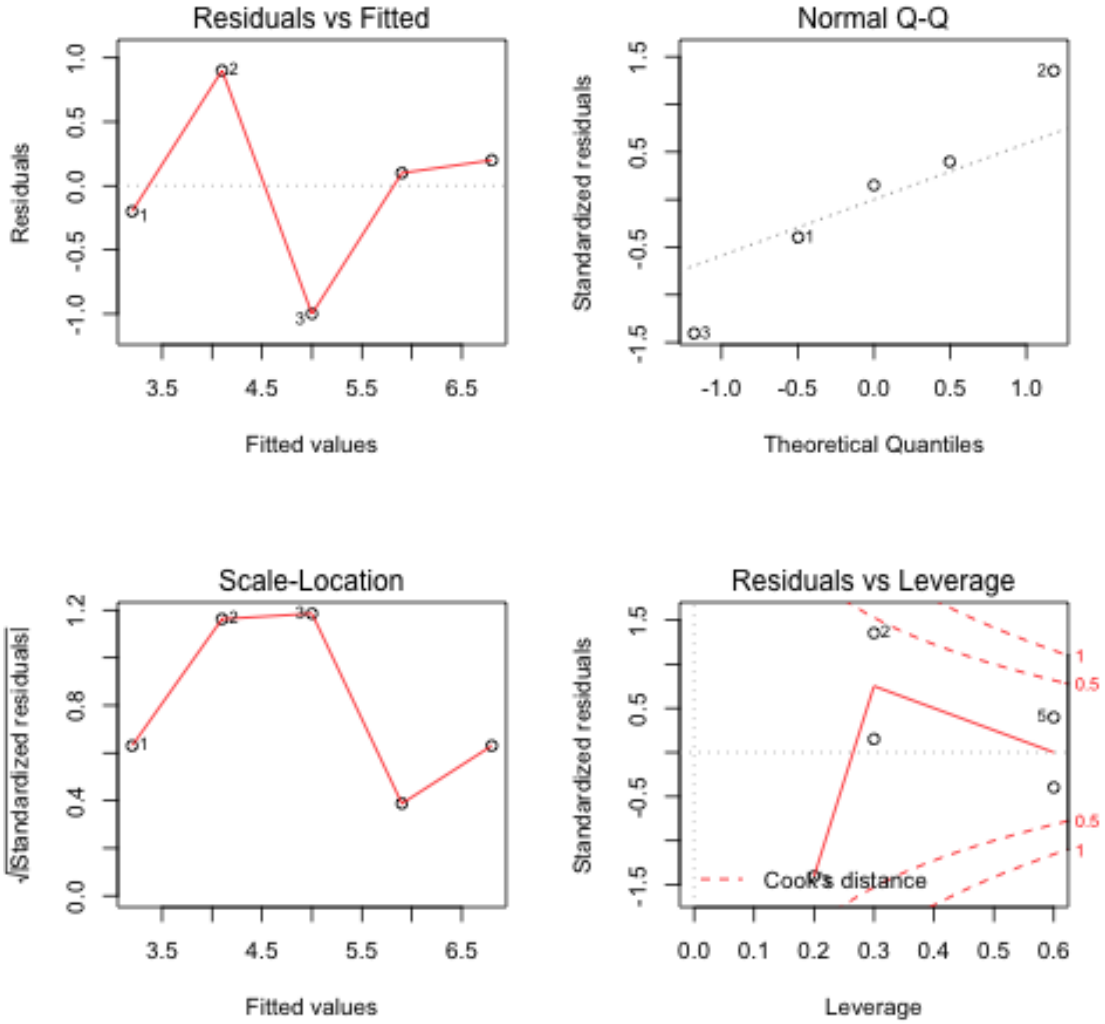
Residuals vs Fitted
Residuals
Fitted values
Normal Q-Q
Standardized residuals
Theoretical Quantiles
Scale-Location
√|Standardized residuals|
Fitted values
Residuals vs Leverage
Standardized residuals
Cook's distance
Leverage

In [ ]:

In [ ]: