

Practical 9

Task B

B. 20 books published in recent year were randomly selected in a bookshop. Number of pages were counted for each book and the age of the author was retrieved. The resulting data were as following:

author age	number of pages
57	568
41	302
23	102
56	574
85	600
57	162
74	128
85	405
61	201
35	129
38	204
62	305
45	450
41	275
43	320
75	401
56	230
51	222
31	188
48	196

Does the author age have an affect on thickness of books?
Perform a statistical analysis and illustrate it with a figure.

Codes for analysis

```
Books<-read.delim2("clipboard")  
summary(Books)
```

```
cor.test(Books$age,Books$pages)
```

```
summary(lm(Books$age~Books$pages))
```

```
ggplot(Books, aes(x=age, y=pages))+geom_point()+  
geom_smooth(method="lm", col=1)+theme_classic()
```

Correlation

```
Pearson's product-moment correlation
```

```
data: Books$age and Books$pages
```

```
t = 2.3625, df = 18, p-value = 0.02962
```

```
alternative hypothesis: true correlation is not equal to 0
```

```
95 percent confidence interval:
```

```
0.05605201 0.76444894
```

```
sample estimates:
```

```
cor
```

```
0.4865054
```

Correlation using Linear Regression

Residuals:

Min	1Q	Median	3Q	Max
-19.60	-11.57	-4.37	11.63	30.00

Coefficients:

	Estimate	Std. Error	t value	Pr(> t)	
(Intercept)	37.08523	7.63941	4.854	0.000127	***
Books\$pages	0.05406	0.02288	2.363	0.029615	*

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

Residual standard error: 15.38 on 18 degrees of freedom

Multiple R-squared: 0.2367, Adjusted R-squared: 0.1943

F-statistic: 5.581 on 1 and 18 DF, p-value: 0.02962

