Part3_Assignment.R

endur

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```
library(tidyverse)
```

```
## Warning: il pacchetto 'forcats' è stato creato con R versione 4.3.1
```

```
## ── Attaching core tidyverse packages ──────────────────────── tidyverse 2.0.0 ──
## ✓ dplyr     1.1.2     ✓ readr     2.1.4
## ✓ forcats   1.0.0     ✓ stringr   1.5.0
## ✓ ggplot2   3.4.2     ✓ tibble    3.2.1
## ✓ lubridate 1.9.2     ✓ tidyr     1.3.0
## ✓ purrr     1.0.1
## ── Conflicts ────────────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
## ℹ Use the conflicted package (<http://conflicted.r-lib.org/>) to force all conflicts to become errors
```

```
library(tidytext)
library(readxl)

returns = read_excel("First_Assignment_dataset_28oct23.xlsx")

columns = c("S1","S2","S3","S4","S5","S6","S7","S8","S9","S10")
means = sapply(returns[, columns], mean)
print(means)
```

```
##         S1         S2         S3         S4         S5         S6         S7
## 0.01665045 0.01625610 0.01444907 0.01370692 0.01298254 0.01335779 0.01249415
##         S8         S9        S10
## 0.01239133 0.01250476 0.01082208
```

```
mean_returns = read_excel("mean_returns.xlsx")

coeff = read_excel("slope_coeff_reg.xlsx")


cros_seq_reg1 = lm(mean_returns$means ~ coeff$rmrf+coeff$smb)
summary(cros_seq_reg1)
```

```
##
## Call:
## lm(formula = mean_returns$means ~ coeff$rmrf + coeff$smb)
##
## Residuals:
##        Min         1Q     Median         3Q        Max
## -0.0008294 -0.0007281 -0.0003654  0.0007349  0.0014250
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.021568   0.003266   6.604 0.000303 ***
## coeff$rmrf  -0.010260   0.003141  -3.266 0.013751 *
## coeff$smb    0.001228   0.001150   1.068 0.321153
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.001012 on 7 degrees of freedom
## Multiple R-squared:  0.754,  Adjusted R-squared:  0.6837
## F-statistic: 10.73 on 2 and 7 DF,  p-value: 0.007385
```

```
cros_seq_reg2 = lm(mean_returns$means ~ coeff$rmrf+coeff$hml)
summary(cros_seq_reg2)
```

```
##
## Call:
## lm(formula = mean_returns$means ~ coeff$rmrf + coeff$hml)
##
## Residuals:
##        Min         1Q     Median         3Q        Max
## -0.0017061 -0.0006390  0.0001040  0.0004652  0.0012594
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.022641   0.002910   7.781 0.000109 ***
## coeff$rmrf  -0.010540   0.003278  -3.215 0.014745 *
## coeff$hml    0.005706   0.006865   0.831 0.433336
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.001041 on 7 degrees of freedom
## Multiple R-squared:  0.7396, Adjusted R-squared:  0.6652
## F-statistic: 9.943 on 2 and 7 DF,  p-value: 0.009007
```

```
cros_seq_reg3 = lm(mean_returns$means ~ coeff$rmrf+coeff$umd)
summary(cros_seq_reg3)
```

```
##
## Call:
## lm(formula = mean_returns$means ~ coeff$rmrf + coeff$umd)
##
## Residuals:
##        Min         1Q     Median         3Q        Max
## -1.323e-03 -4.448e-04  5.210e-06  6.960e-04  1.136e-03
##
## Coefficients:
##              Estimate Std. Error t value Pr(>|t|)
## (Intercept)  0.025718   0.002424  10.608 1.45e-05 ***
## coeff$rmrf  -0.013675   0.002684  -5.095  0.00141 **
## coeff$umd   -0.010977   0.006963  -1.576  0.15894
## ---
## Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
##
## Residual standard error: 0.0009371 on 7 degrees of freedom
## Multiple R-squared:  0.7889, Adjusted R-squared:  0.7286
## F-statistic: 13.08 on 2 and 7 DF,  p-value: 0.004323
```