R Exercise Tasks

Seminar 4

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Make sure to clear memory before starting

```
> rm(list=ls())          # It will  clean up memory!
```

Task 1: Review - Functions

- Use the admission.csv file
- Write a function 'Summary_Data' which takes two arguments: X and Y, where X is a data frame and Y is the column number of X. The function should return the *mean*, *median*, *standard deviation*, *min.*, and *max.* of the Y-th column in the data.
- The statistics should be presented in a data frame format as follows:

```
> Summary_Data(admission, 1)
     MEAN MEDIAN          SD MIN MAX
1 0.3175      0 0.4660867   0   1
> Summary_Data(admission, 2)
    MEAN MEDIAN          SD MIN MAX
1 587.7    580 115.5165 220 800
> Summary_Data(admission, 3)
     MEAN MEDIAN          SD  MIN MAX
1 3.3899  3.395 0.3805668 2.26   4
> Summary_Data(admission, 4)
    MEAN MEDIAN          SD MIN MAX
1 2.485      2 0.9444602   1   4
>
```

Task 2: For Loops

Solve A = $\sum_{i=10}^{100}(i^3 + 4i^2)$

Solve B = $\sum_{i=1}^{20}\sum_{k=1}^{5}\frac{i^4}{(3+k)}$

by using For Loops

- Write down R code lines for A and B

Extra Credit Point

- Write a function ‘FN1’ which takes two arguments: A and B, where A and B are the non-zero numbers. The function should return

(1) A+B if A and B are both positive and even numbers,

(2) A*B if A and B are both negative and odd numbers,

(3) A/B if either A or B is a positive and odd number,

(4) A-B if either A or B is a negative and even number, and

(5) A^B in any different combinations.

Email the answer to the instructor and the TA

Output

A	B	Operator	Values	Output
PE	PE	+	(2,2)	4
PE	PO	/	(2,1)	2
PO	PE	/	(1,2)	0.5
PO	PO	/	(1,1)	1
NE	NE	-	(-2,-2)	0
NE	NO	-	(-2,-1)	-1
NO	NE	-	(-1,-2)	1
NO	NO	*	(-1,-1)	1