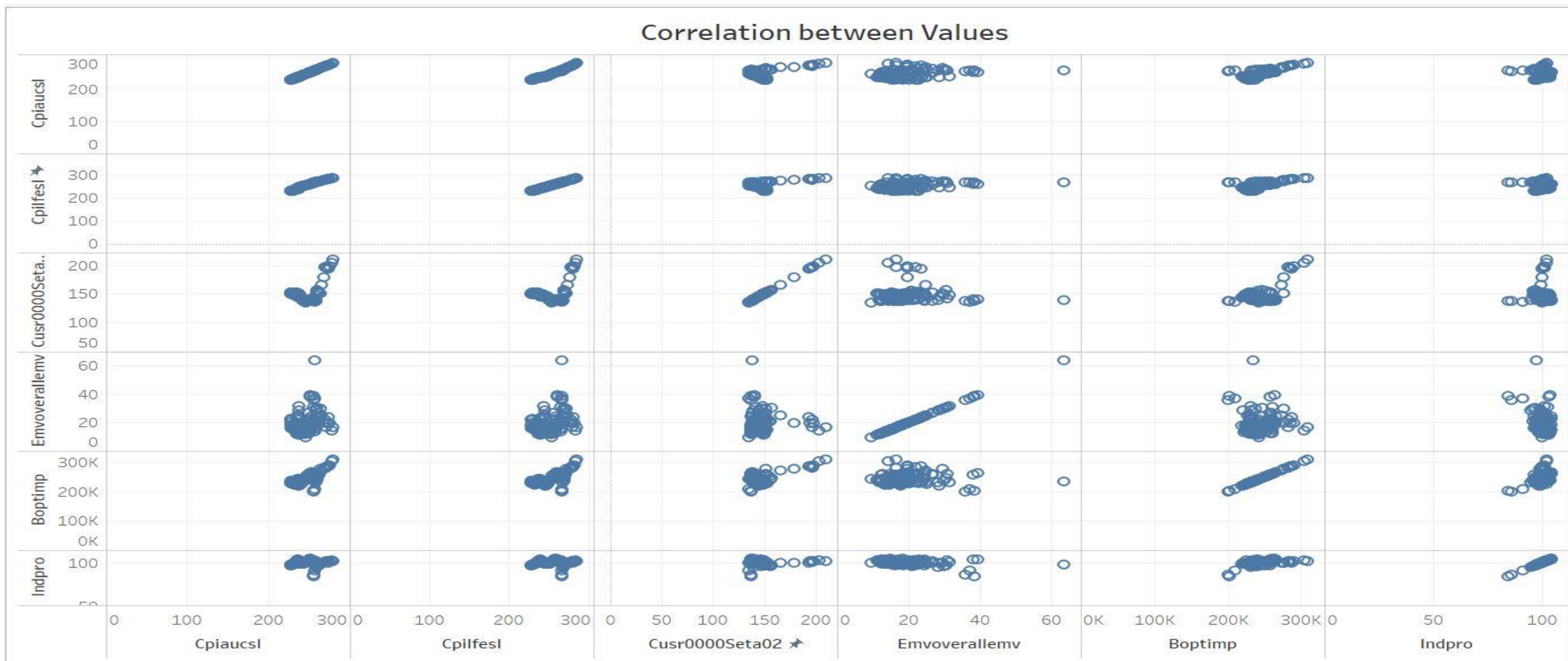


# Correlation in FRED data

Information Visualisation - HomeWork 3

-Robinson Tamilselvan

The task for this homework is to build visualization(s) that show which, if any, pairs of the following six data series have had a high degree of correlation in the last 10 years (month to month, going back from December 2021). Correlation can be positive or negative (or uncorrelated), and while there are statistical measures to test for those, your answer should be visual and allow a user to see the interactions between pairs of indicators.



➤ The above chart displays the correlation between the values (each column)

# Pearson Correlation using Python



JPG File

	CPILFESL	CPIAUCSL	CUSR0000SETA02	EMVOVERALLEMV	BOPTIMP	INDPRO
CPILFESL	1	0.9878799	0.332529495	0.353486145	0.700629962	0.034342009
CPIAUCSL		1	0.433295262	0.328781869	0.767494402	0.062163231
CUSR0000SETA02			1	-0.050557847	0.555175051	0.037768542
EMVOVERALLEMV				1	-0.001357894	-0.349630875
BOPTIMP					1	0.536660605
INDPRO						1

- Here we can see that **CPILFESL** and **CPIAUCSL** has *almost perfect positive* correlation
- **CUSR0000SETA02** and **EMVOVERALLEMV**, **EMVOVERALLEMV** and **BOPTIMP**, **EMVOVERALLEMV** and **INDPRO** have *negative* correlation.
- The values shaded in blue are greater than 0 but still *leaning towards* equal to 0 (no linear relationship).

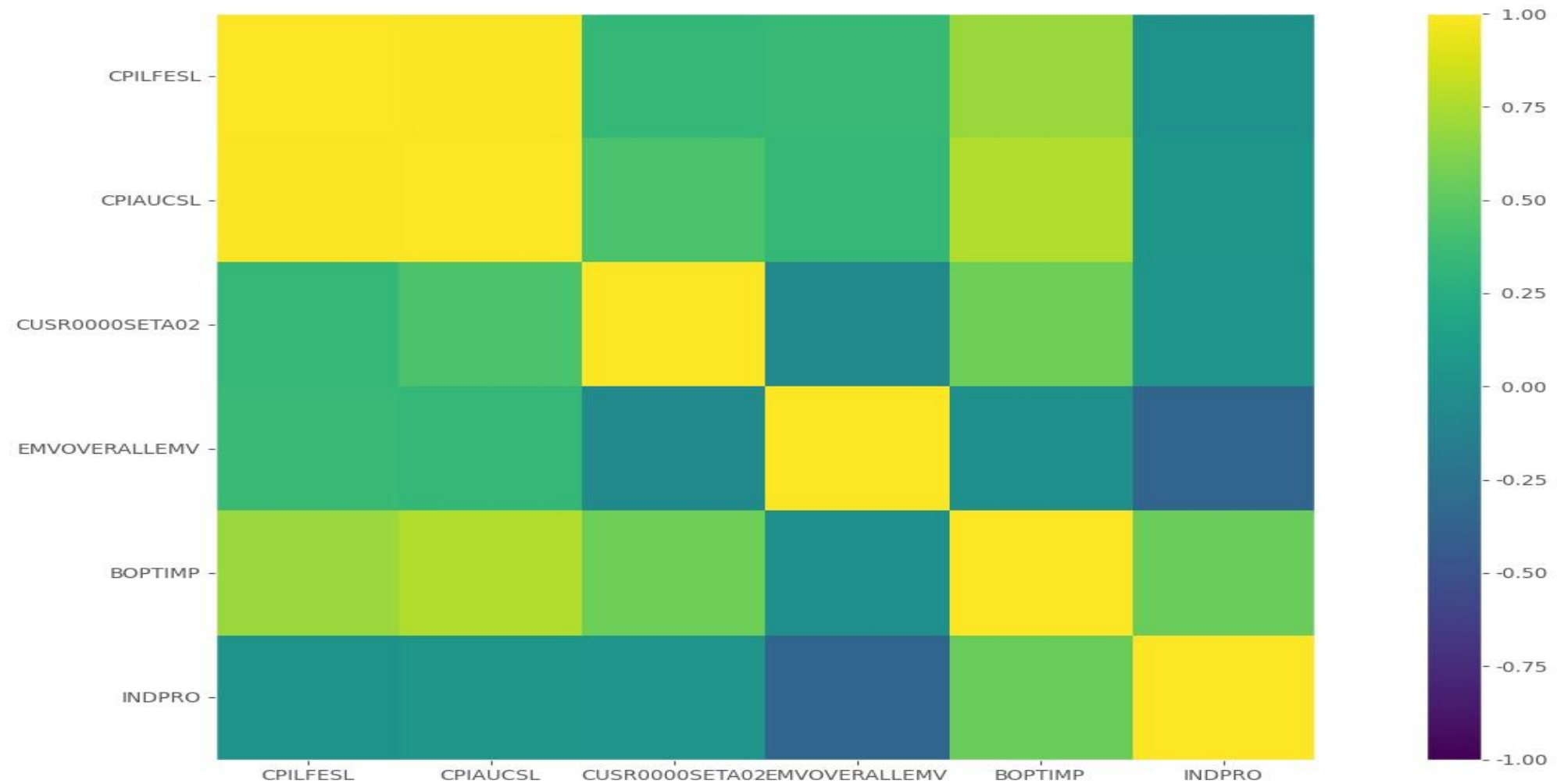
Pearson's r Value	Correlation Between x and y
equal to 1	perfect positive linear relationship
greater than 0	positive correlation
equal to 0	no linear relationship
less than 0	negative correlation

	CPILFESL	CPIAUCSL	CUSR0000SETA02	EMVOVERALLEMV	BOPTIMP	INDPRO
CPILFESL	1	0.9878799	0.332529495	0.353486145	0.700629962	0.034342009
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BOPTIMP					1	0.536660605
INDPRO						1

If we arrange the correlation values from higher to lower *which is the task (any pair have had high degree of correlation)* we will get the following results from high to low.

1	CPILFESL,CPIAUCSL	0.98788
2	CPIAUCSL,BOPTIMP	0.767494
3	CPILFESL,BOPTIMP	0.70063
4	CUSR0000SETA02,BOPTIMP	0.555175
.....	.....	.....
15	EMVOVERALLEMV,INDPRO	-0.34963

Visual representation for Correlation of pairs



- The yellow indicates the positive correlation.
- The Lighter the green indicates the values are higher but less than 1 (Yellow)
- Similarly refer the color indicator for the colors and the values.

Thank you!