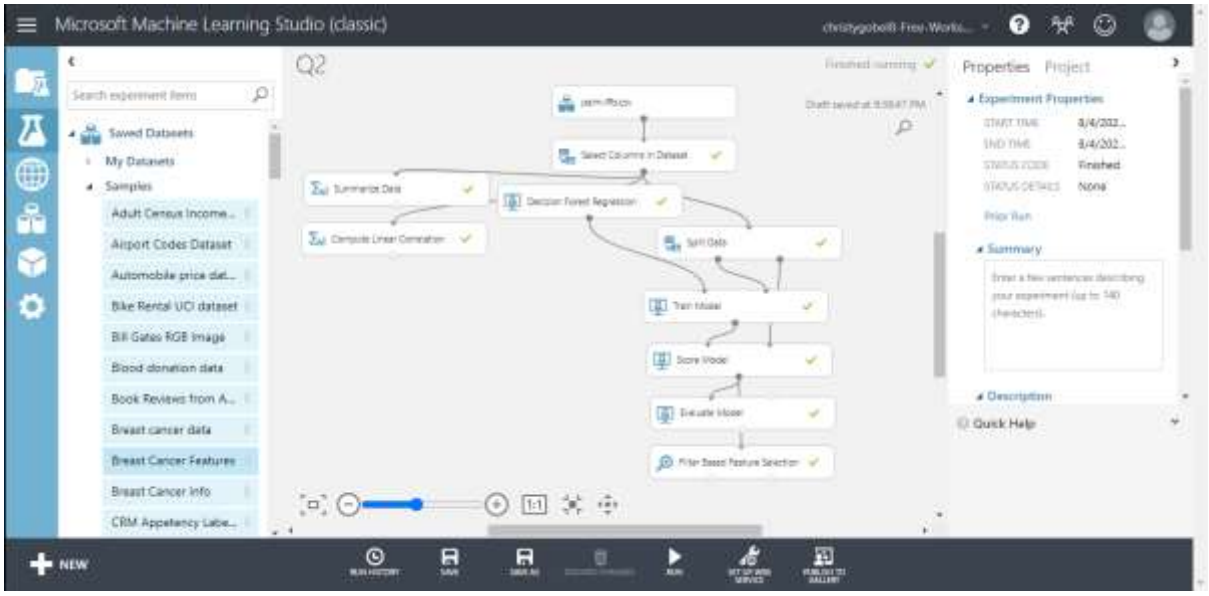
2. A team of plantation planners are concerned about the yield of oil palm trees, which seems to fluctuate. They have collected a set of data and needed help in analysing on how external factors influence fresh fruit bunch (FFB) yield. Some experts are of opinion that the flowering of oil palm tree determines the FFB yield, and are linked to the external factors. Perform the analysis, which requires some study on the background of oil palm tree physiology.

(refer attachment palm_ffb.csv)

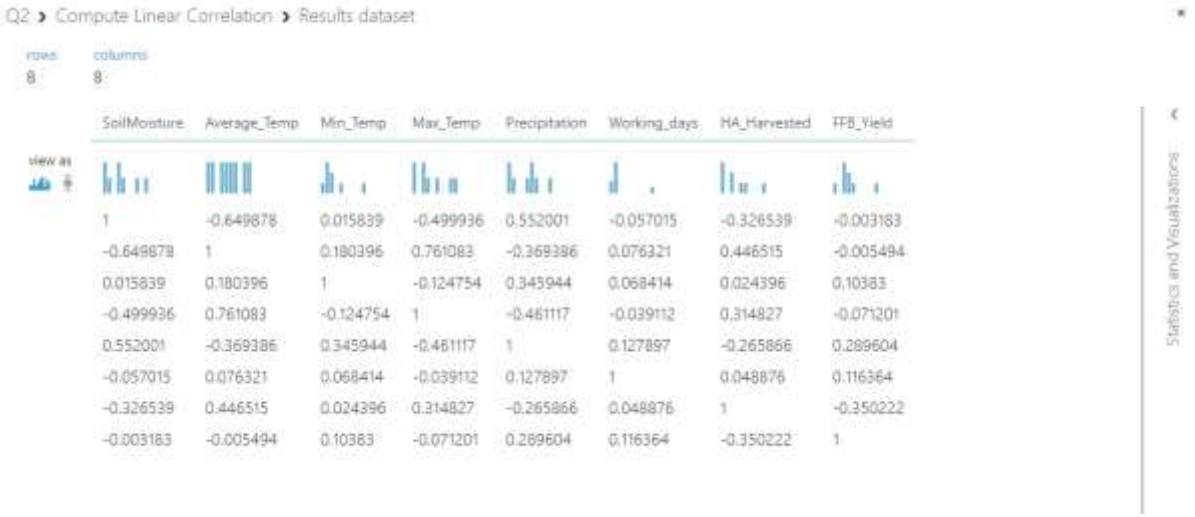


DESCRIPTIVE ANALYSIS

Summary statistics

Feature	Count	Min	Max	Mean	1st Quartile	Median	3rd Quartile	Sample Standard Deviation
SoilMoisture	130	380.7	647.3	527.6469	488.625	538.3	571.025	57.367844
Average_Temp	130	25.15807	28.58	26.84992	26.44229	26.93065	27.27073	0.651413
Min_Temp	130	18.9	22.6	21.37923	21	21.5	21.8	0.688971
Max_Temp	130	31.1	36	33.85154	33.1	33.9	34.6	1.079638
Precipitation	130	2	496.1	188.9808	140.3	182.15	226.1	80.23721
Working_days	130	21	27	24.75385	24	25	26	1.239289
HA_Harvested	130	683431.9	882254.2	793404.5	768966.9	790036.2	821989.2	34440.89385
FFB_Yield	130	1.08	2.27	1.602231	1.39	1.585	1.8075	0.281751

ALL FEATURES CORRELATION WITH FFB_YIELD



Q2 › Compute Linear Correlation › Results dataset

rows 8 columns 8

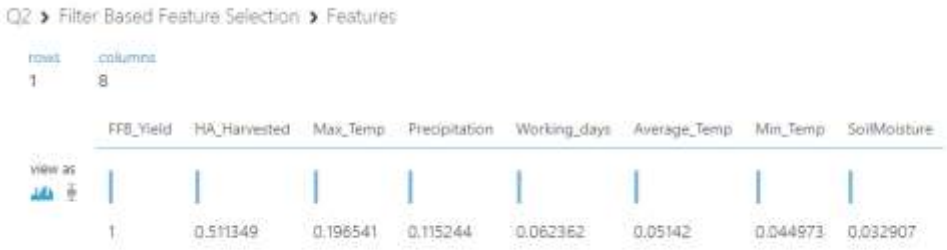
	SoilMoisture	Average_Temp	Min_Temp	Max_Temp	Precipitation	Working_days	HA_Harvested	FFB_Yield
SoilMoisture	1	-0.649878	0.015839	-0.499936	0.552001	-0.057015	-0.326539	-0.003183
Average_Temp	-0.649878	1	0.180396	0.761083	-0.369386	0.076321	0.446515	-0.005494
Min_Temp	0.015839	0.180396	1	-0.124754	0.345944	0.068414	0.024396	0.10383
Max_Temp	-0.499936	0.761083	-0.124754	1	-0.461117	-0.039112	0.314827	-0.071201
Precipitation	0.552001	-0.369386	0.345944	-0.461117	1	0.127897	-0.265866	0.289604
Working_days	-0.057015	0.076321	0.068414	-0.039112	0.127897	1	0.048876	0.116364
HA_Harvested	-0.326539	0.446515	0.024396	0.314827	-0.265866	0.048876	1	-0.350222
FFB_Yield	-0.003183	-0.005494	0.10383	-0.071201	0.289604	0.116364	-0.350222	1

Statistics and Visualizations

Summary:

- Min_Temp, Precipitation, and Working_days has strong positive correlation with FFB_Yield.
- SoilMoisture, Average_Temp, Max_Temp, HA_Harvested has negative corellation with FFB_Yield.

FEATURE SELECETION METHOD (DECISION FOREST REGRESSOR)



Q2 › Filter Based Feature Selection › Features

rows 1 columns 8

	FFB_Yield	HA_Harvested	Max_Temp	Precipitation	Working_days	Average_Temp	Min_Temp	SoilMoisture
	1	0.511349	0.196541	0.115244	0.062362	0.05142	0.044973	0.032907

Summary:

HA_Harvested, Max_Temp, and Precipitation contributes the most to affect FFB_Yield.