

SAS_STAT40840 - Assignment 1

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I have already imported the data using a PROC import statement

The CONTENTS Procedure

Data Set Name	S40840.WEATHER	Observations	3652
Member Type	DATA	Variables	27
Engine	V9	Indexes	0
Created	06/19/2022 16:39:35	Observation Length	208
Last Modified	06/19/2022 16:39:35	Deleted Observations	0
Protection		Compressed	NO
Data Set Type		Sorted	NO
Label			
Data Representation	SOLARIS_X86_64, LINUX_X86_64, ALPHA_TRU64, LINUX_IA64		
Encoding	utf-8 Unicode (UTF-8)		

Engine/Host Dependent Information	
Data Set Page Size	131072
Number of Data Set Pages	6
First Data Page	1
Max Obs per Page	629
Obs in First Data Page	604
Number of Data Set Repairs	0
Filename	/home/u61605414/sasuser.v94/weather.sas7bdat
Release Created	9.0401M6
Host Created	Linux
Inode Number	81003501
Access Permission	rw-r--r--
Owner Name	u61605414
File Size	896KB
File Size (bytes)	917504

The CONTENTS Procedure

Variables in Creation Order					
#	Variable	Type	Len	Format	Informat
1	date	Num	8	BEST12.	BEST32.
2	month	Char	5	\$5.	\$5.
3	year	Num	8	BEST12.	BEST32.
4	ind	Num	8	BEST12.	BEST32.
5	maxtp	Num	8	BEST12.	BEST32.
6	ind.1	Num	8	BEST12.	BEST32.
7	mintp	Num	8	BEST12.	BEST32.
8	igmin	Num	8	BEST12.	BEST32.
9	gmin	Num	8	BEST12.	BEST32.
10	ind.2	Num	8	BEST12.	BEST32.
11	rain	Num	8	BEST12.	BEST32.
12	cbl	Num	8	BEST12.	BEST32.
13	wdsp	Num	8	BEST12.	BEST32.
14	ind.3	Num	8	BEST12.	BEST32.
15	hm	Num	8	BEST12.	BEST32.
16	ind.4	Num	8	BEST12.	BEST32.
17	ddhm	Num	8	BEST12.	BEST32.
18	ind.5	Num	8	BEST12.	BEST32.
19	hg	Num	8	BEST12.	BEST32.
20	sun	Char	2	\$2.	\$2.
21	glorad	Char	2	\$2.	\$2.
22	soil	Num	8	BEST12.	BEST32.
23	pe	Num	8	BEST12.	BEST32.
24	evap	Num	8	BEST12.	BEST32.
25	smd_wd	Num	8	BEST12.	BEST32.
26	smd_md	Num	8	BEST12.	BEST32.
27	smd_pd	Num	8	BEST12.	BEST32.

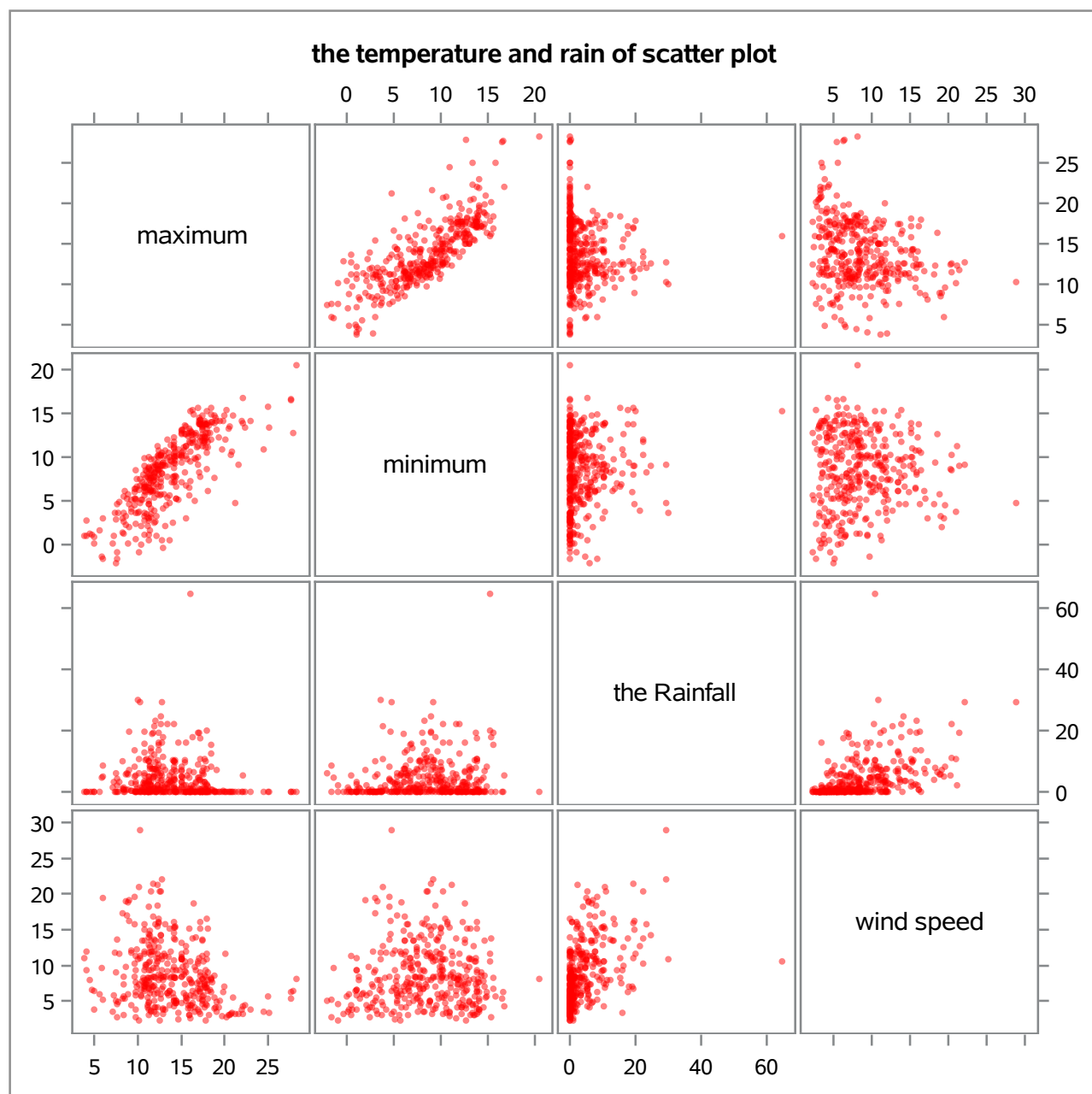
There are 27 variables and the year format is BEST12 and stored is NUMBER

Question 3

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Obs	date	month	year	maxtp	mintp	rain
1	1	jan	2012	10.9	4.1	5.7
2	2	jan	2012	12.1	3.3	19.1
3	3	jan	2012	12.8	4.8	5
4	4	jan	2012	10.9	7.6	3.6
5	5	jan	2012	11.2	6.9	2.5
6	6	jan	2012	11.5	8.2	3.4
7	7	jan	2012	10.9	9	0.2
8	8	jan	2012	12.2	10.2	0.2
9	9	jan	2012	11.3	8.4	3.8
10	10	jan	2012	11.4	9.8	6.1

The value of rain in row 8 is 0.2



The maximum temperature and minimum temperature show a positive linear correlation, and similarly rain and average wind speed show the same linear relationship. In other words, there is a very high dependence between them

Question 5

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Obs	date	month	year	MaxTemp	MinTemp	WindSpeed
1	1	jan	2012	10.9	4.1	17.2
2	2	jan	2012	12.1	3.3	18.6
3	3	jan	2012	12.8	4.8	25.7
4	4	jan	2012	10.9	7.6	22.1
5	5	jan	2012	11.2	6.9	15.8

Question 7

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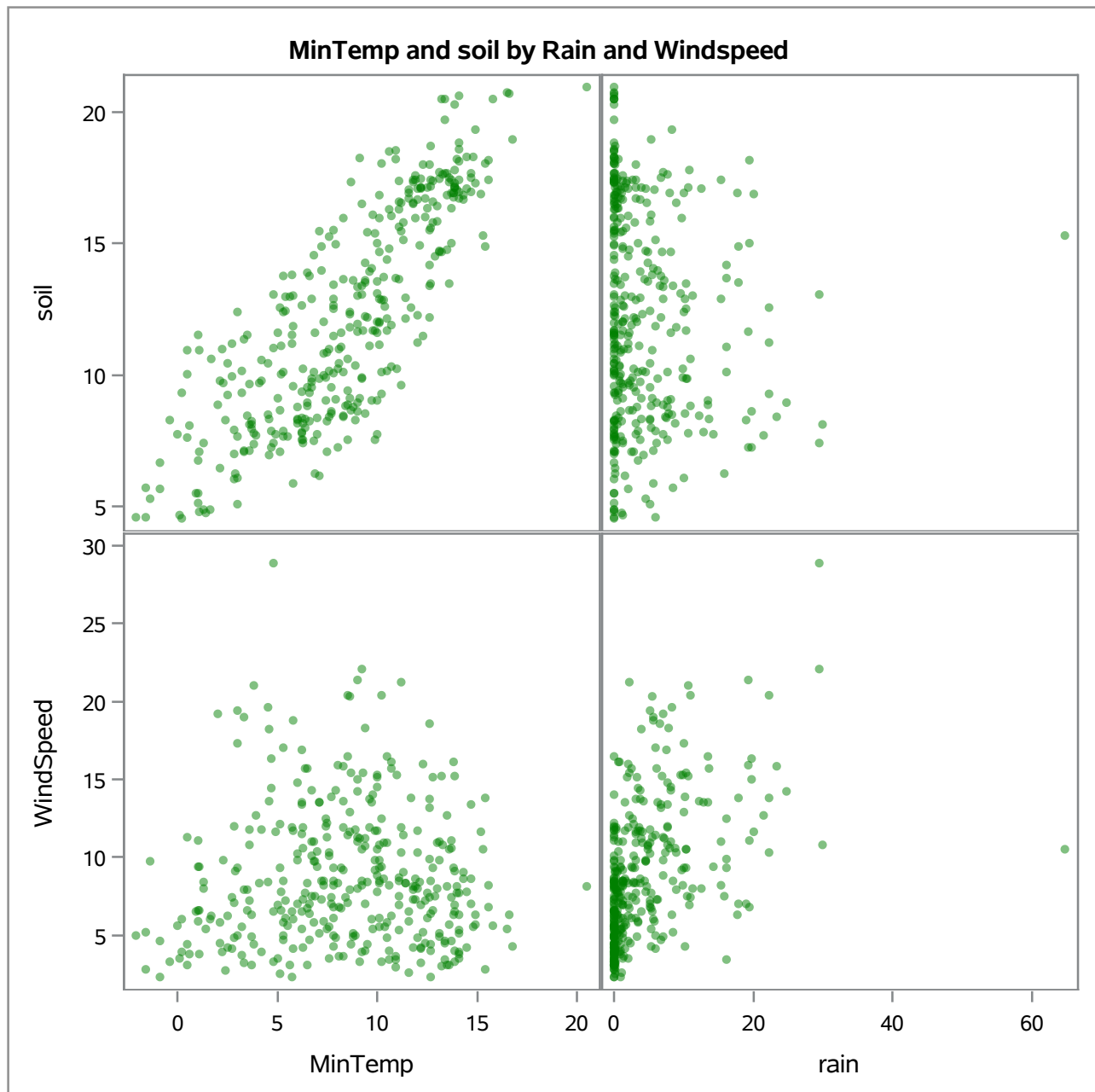
Obs	date	month	year	MaxTemp	MinTemp	rain	MeanTemp
2250	28	feb	2018	2	-3	0	-0.50
2251	1	mar	2018	0.7	-5	0.3	-2.15
2252	2	mar	2018	1.5	-1.2	8.4	0.15
2268	18	mar	2018	3.2	-1.3	0	0.95

There are Four days recording rain

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
MaxTemp	3652	13.6709474	3.6898882	0.7000000	28.4000000
MinTemp	3652	8.3817087	3.9369566	-5.0000000	20.5000000
rain	3650	4.5807945	6.9143831	0	105.5000000
WindSpeed	3649	9.5316251	4.5578581	1.4000000	30.8000000
MeanTemp	3652	11.0263280	3.6083420	-2.1500000	24.4000000

*The maximum wind speed is 30.8000000, the maximum average temperature is less
24.4000000*



This graph explores the effect of rainfall and wind speed on the average rainfall and soil. It is observed that as the rainfall increases, the wind speed becomes larger, but after the rainfall exceeds thirty, the wind speed gradually decreases to about 12, slightly above the average value of 9.53. As the wind speed and rainfall increase, its mean value also increases accordingly. At the same time, the effect of rainfall on soil basically varies in parallel with the magnitude of rainfall.