Statistical Analysis Step-by-Step Using Statistical Calculator for Descriptive Statistics

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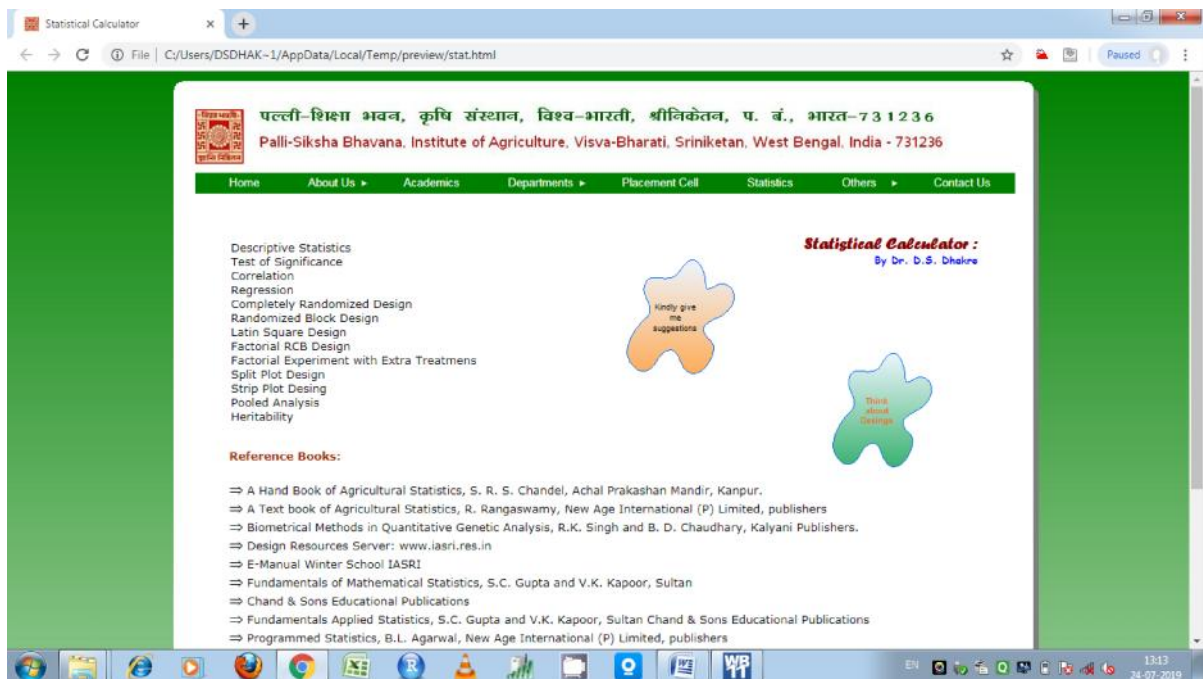West Bengal -731 236, India

Methodology

We follow the steps described below to get the data analyzed and finding its outputs:
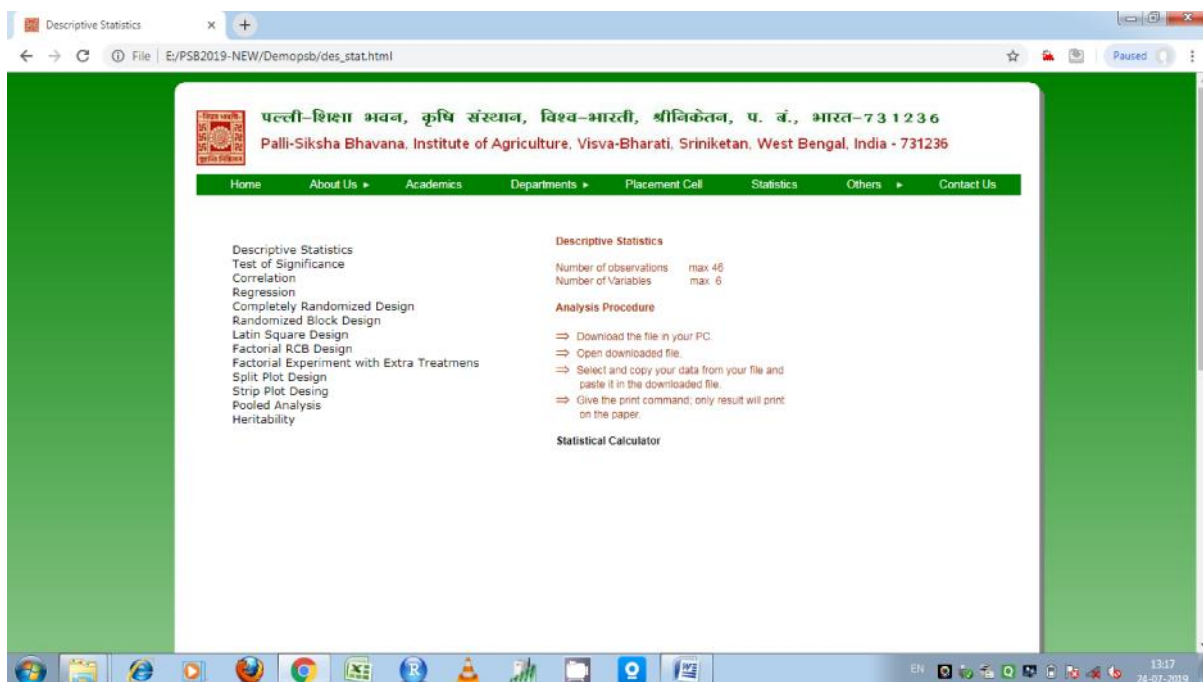
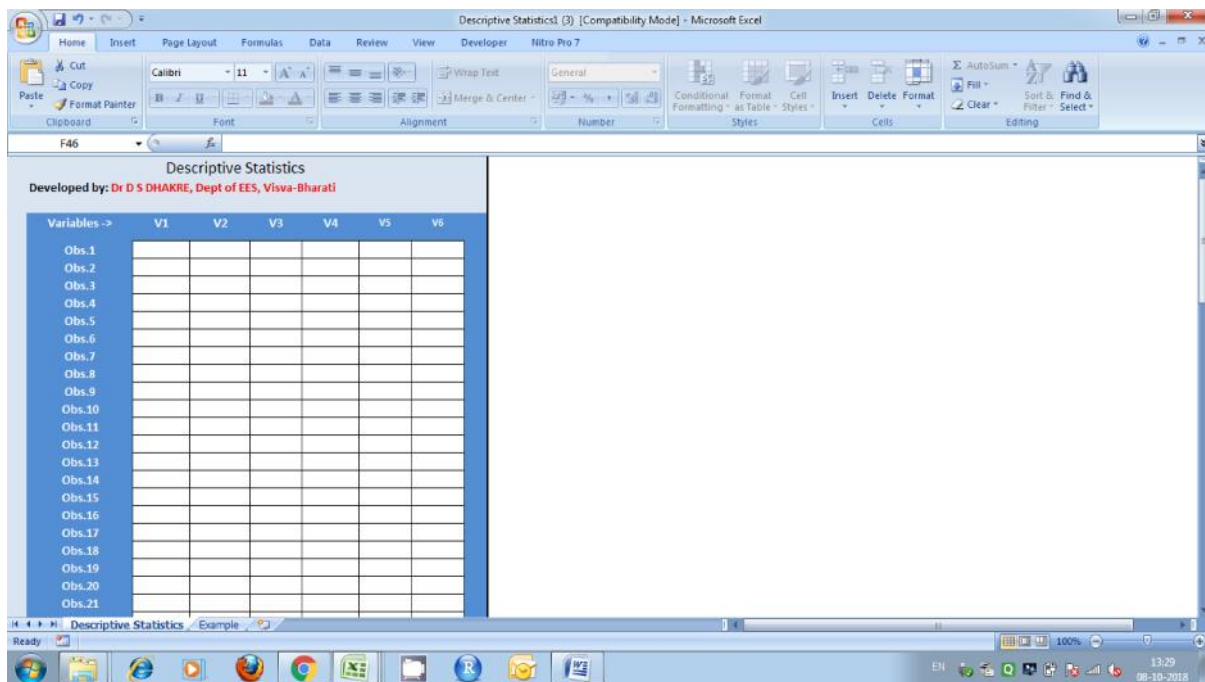**Step 1:** Type www.psbvb.in in any browser that will open the following web page:

Step 2: Then click on Statistical Analysis which will open the page given below:

Step 3: There are number of items on the statistical calculator. You can click on any one of them according to your need, for example, click on Descriptive Statistics.
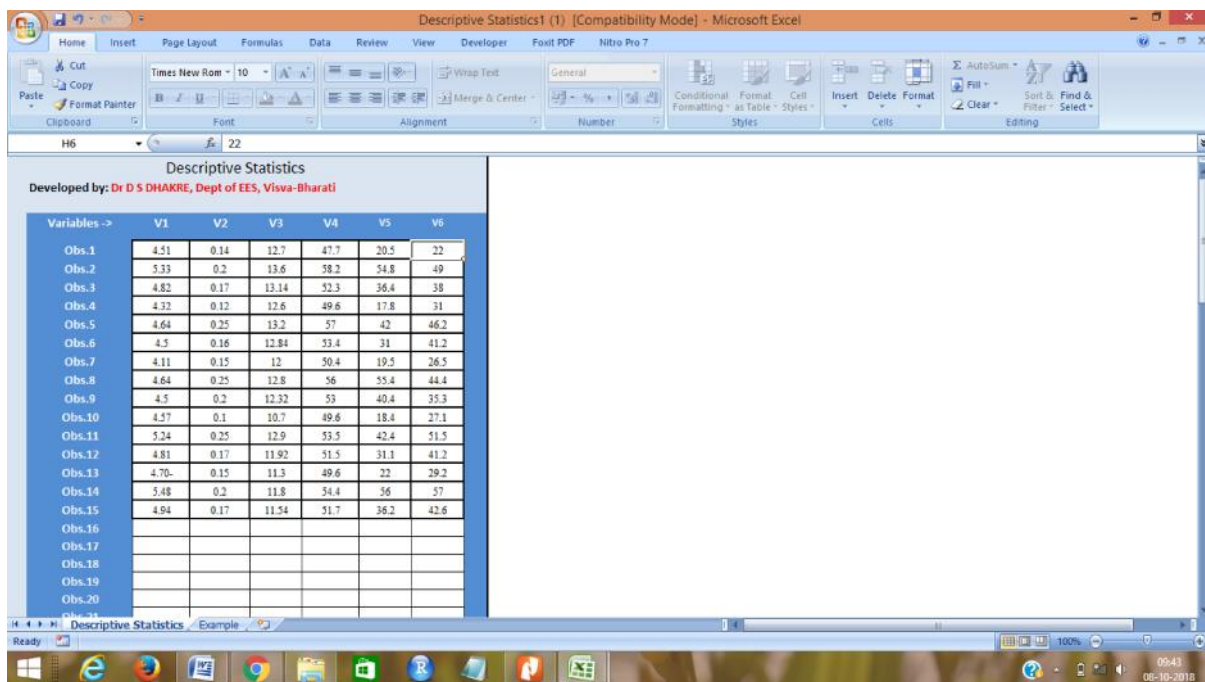
Step 4: Then click on Statistical Calculator, it will download the statistical calculator of Descriptive Statsitics within a second. You can keep it in your computer or laptop forever. Next, you click on the downloaded file, which is an excel file, then a data spreadsheet will open up. Here you can analyse upto 6 number of variables with 46 observations each. Now you can put your data directly in the given spreadsheet or copy from other sheet and paste it on the spreadsheet.
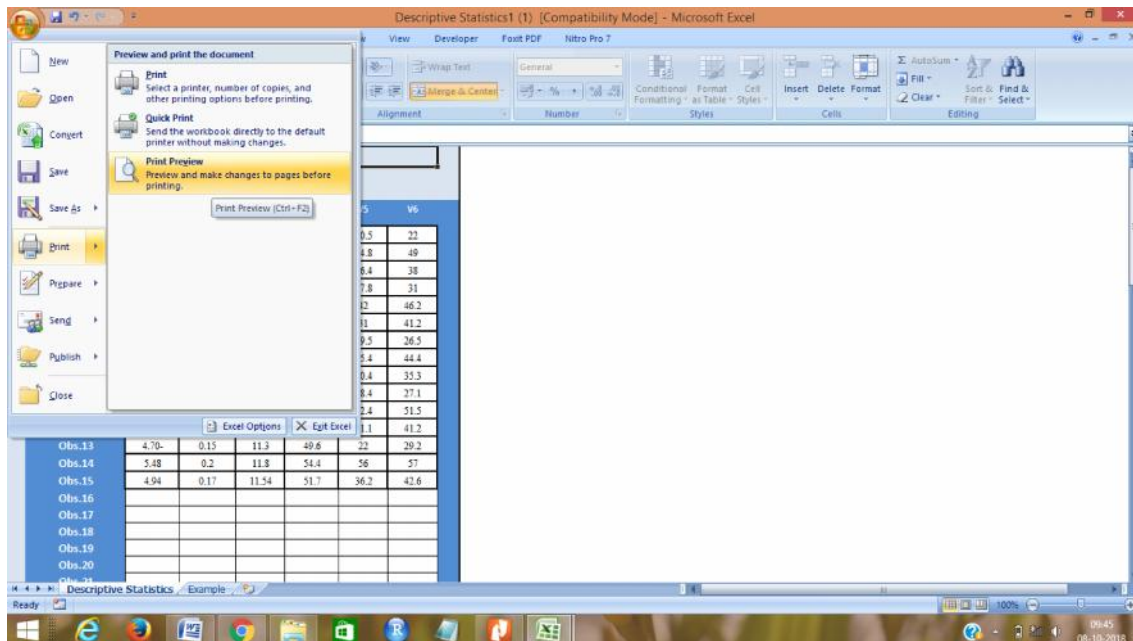

Example 2.1: Find the descriptive statistics for the following data:

V_1= pH	V_2 = EC	V_3=CEC	V_4=Porosity	V_5=Sand	V_6=Silt
4.51	0.14	12.7	47.7	20.5	22
5.33	0.2	13.6	58.2	54.8	49
4.82	0.17	13.14	52.3	36.4	38
4.32	0.12	12.6	49.6	17.8	31
4.64	0.25	13.2	57	42	46.2
4.5	0.16	12.84	53.4	31	41.2
4.11	0.15	12	50.4	19.5	26.5
4.64	0.25	12.8	56	55.4	44.4
4.5	0.2	12.32	53	40.4	35.3
4.57	0.1	10.7	49.6	18.4	27.1
5.24	0.25	12.9	53.5	42.4	51.5
4.81	0.17	11.92	51.5	31.1	41.2
4.70-	0.15	11.3	49.6	22	29.2
5.48	0.2	11.8	54.4	56	57
4.94	0.17	11.54	51.7	36.2	42.6

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After copy pasting the data it will look like the following page:

Step 5: Now you click on print command and then that command will start the analysis of data and produces results in a printable format. If a printer is attached to the computer, then you can take a print out of the results. Otherwise, you can see your results in a print preview mode and the following page will open up:

Output

Descriptive	Variable					
Statistics	V1	V2	V3	V4	V5	V6
Moments						
Mean	4.74	0.18	12.36	52.53	34.93	38.81
Mode	4.64	0.20	NA	49.60	NA	41.20
Median	4.64	0.17	12.60	52.30	36.20	41.20
Standard Deviation	0.39	0.05	0.80	2.99	13.65	10.16
Sample Variance	0.15	0.00	0.64	8.93	186.25	103.21
Kurtosis	-0.28	-0.60	-0.30	-0.49	-1.16	-0.84
Skewness	0.53	0.26	-0.51	0.38	0.27	0.01
Range	1.37	0.15	2.9	10.5	38.2	35
Sum	66.41	2.68	185.36	787.9	523.9	582.2
Count	14	15	15	15	15	15
CV	8.24	25.90	6.46	5.69	39.07	26.17
upper 95% mean	4.95	0.20	12.76	54.03	41.80	43.93
lower 95% mean	4.54	0.16	11.95	51.01	28.02	33.67
Quartiles						
Max	5.48	0.25	13.6	58.2	56	57
3nd quartile	4.91	0.20	12.87	53.95	42.20	45.30
2nd quartile	4.64	0.17	12.60	52.30	36.20	41.20
1st quartile	4.50	0.15	11.86	50.00	21.25	30.10
Min	4.11	0.1	10.7	47.7	17.8	22
Standard Errors						
S E of Mean	0.104	0.012	0.206	0.772	3.524	2.623
S E of Skewness	0.597	0.580	0.580	0.580	0.580	0.580
S E of Kurtosis	1.154	1.121	1.121	1.121	1.121	1.121
Z value of Skew	0.886	0.453	-0.885	0.657	0.461	0.019
Z value of Kurtosis	-0.246	-0.536	-0.266	-0.435	-1.033	-0.745
	ND	ND	ND	ND	ND	ND

ND - Normally Distributed;   NND - Not Normally Distributed

Same process will have to apply for all other statistical calculator like correlation coefficient, completely randomozed design, randomized block design, factorial experiement etc.

References

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3. Biometrical Methods in Quantitative Genetic Analysis, R.K. Singh and B. D. Chaudhary, Kalyani Publishers.

4. Statistics Theory and Practice, D. Bhattacharya and S. Roy Chowdhury, U. N. Dhur & Sons.