TOPIC: - STUDY ON STUDENT HEALTH AT LOVELY PROFESSIONAL UNIVERSITY

A

PROJECT REPORT

Submitted to

LOVELY PROFESSIONAL UNIVERSITY

In partial fulfilment for the award of degree of

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In

MATHEMATICS (HONOURS)

By

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December, 2017

Declaration of Authorship I, Ayush Negi, declare study on student health at lovely professional university and the work presented in it are my own. I confirmed that:

- This work was done wholly or mainly in candidature for a research degree at this university.
- Where any part of this project has previously been submitted for a degree or any other qualification at this university or any other institution, this has been clearly stated.
- Where I have consulted the published work of others, this is always clearly attributed.
- Where I have quoted from the work of others, the source is always given.

Signed:

_____

Author: Ayush Negi

Registration: 11601563

Date:

_____

Certificate

This is to certify that Ayush Negi has completed projected titled, “study on student health at lovely professional university” under my guidance and supervision. To the best of my knowledge, the present work is the result of his original investigation and study. No part of the project has ever been submitted for any other degree at any university.

The project is fits for the submission and fulfilled of the condition for award of the Masters in mathematics.

Signed:

_____

Supervisor: Dr. Geeta Arora

Date: December 2017

_____

Acknowledgement

I express my great gratitude to lovely professional university for providing me this wonderful project to work on “study on student health at lovely professional university”.

I sincerely thank Dr. Geeta Arora for this guidance in carrying out this project work. I also wish to express my gratitude to the Mathematical Department of the University.

I do thank my family and my friends for supporting me and always encourage me to do this project.

Ayush Negi

Abstract

Our dissertation comprises of three parts based on the work done in each semester as follows:

Part I:- Study on the basic knowledge about statistics and learning the basics of using SPSS software.

Part II:-Review of literature for similar existing study and preparation of questionnaire to get information (data) about student health in LPU.

Part III: -Data analysis to interpret the conclusion about study on student health at Lovely Professional University.

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Part I

1. Introduction

As in our day to day life style we came across some problems in which we have to use statistics. For example if I am a teacher and our school principal ask us about our class overall attendance, in household work, etc. Statistics have wide area in which we can use it and get benefit of.in ancient time statistics is only the affairs of state but now it's applicable in every field of study.

2. Statistics

It is defined as science of averages and its estimates.it is further defined in as in two ways firstly, defined in as 'statistical data' i.e., numerical statements of facts. Statistics was regarded as the science of statecraft and was a product of the administrative activity of state. statistics has been derived from the Latin word 'status ' or the Italian word 'statista' or the German word 'statistik' or the French word 'statistique' each of which means political state. In early time, it is used in matters such as:

a. Age and sex-wise population of the country.

b. Property and wealth of country. (Enabling the government to have an idea of the man power of the country).

3. Importance and scope of statistics

3.1. Statistics in planning:-

As we all know that proper planning in need when securing our future.Because without a proper plan, life is like a road without any destination. So planning is in need and it's been used for long time. Nowadays, it's applicable in business and countries matters. Like in business, a proper estimate of production, investment, consumption, income, etc. will lead profit of the company which is overviewed through statistics. And in country, as if scheme is introduced likewise five year plan which can be introduced by collecting statistical collection of all ages and sex of population. Statistics help us know how they get a benefit if the scheme is implemented.

3.2. Statistics in states (Government):-

As we discussed above, statistics use in state matter is important to make a growth of the country on large and small scale. Example: state collects death statistics according to age sex and find out about which disease is in action and how to counter them. Likewise, implementation of proper sanitary measure, medical benefits are the counter measures of the government to deal with health related problems.

3.3. Statistic in mathematics:-

At this instance of wide use of statistics in political, social, administrative issues got a new view of life through statistics. In mid seventeenth, with the use of statistics in the development of theory of probability got huge appreciation and statistics is considered as a new subject to make life easy. With increasing role in modern life, a new branch of study of statistics is introduced as 'mathematical statistics'.

3.4. Statistics in psychology and education:-

As we all heard about I.Q(intelligence quotient),a factor analysis the general term that determine the person's intelligence into numbers is one of great achievement in the field of psychology through statistic.

4. Data

For all that we need figures which tell about situation in numerical form called data. It is generally an input and output of a given phenomenon under study.

4.1. CLASSIFICATION OF DATA ON THE BASIS OF INTERVAL:-

It's divided into two categories on the basis of interval between them:-

4.1.1. Discrete data:-

When data set is in this form of integer. Example a batsman score in last 10 innings, number of male and female in a particular area, no. of eggs lay by hen etc.

4.1.2. Continuous data:-

When data is in the form of real numbers .example amount of rainfall in a particular date, average of students test marks, temperature of a place. Now as we know we find data but all data is not of same type or we can we say we cannot analyse in the same statistical way because numbers shown by entities are different.

4.2. CLASSIFICATION OF DATA ON THE BASIS OF SCALE:-

So, researcher had divided them in order to the level or scale of data so that it can be

4.2.1. Nominal scale

It is a qualitative data. When data are labels or names used to identify the attribute of an element, then nominal scale is used. Example when we prepare notes we assign statements as “1”,”2”,”3”, so on. They merely are serial number which represent the statement but not as a preference. We use this scale in day to day life in as employee identification number, PAN card, ADHAR card, etc.

4.2.2. Ordinal scale

It is a qualitative data. This scale is use to rank or order objects. Examples when a completion result is out then numbers represent the rank of person according to highest number got by a candidate.

4.2.3. Interval scale

It is a quantitative data. Measurements in which difference between two consecutive numbers are meaningful. Example let student is distributed their maths test copy where A got 30marks, B got 20, C got 10 marks. Here difference between the marks shows their performance in the maths test.

4.2.4. Ratio scale

They are quantitative data. It possesses all the property of interval scale with meaningful ratio of two values. The ratio scale must contain a zero value that indicates that nothing exists for the variable at zero point.

5. Statistics

There are many researchers who defined statistics as:-

“Statistics are numerical statement of facts in any department of enquiry placed in relation to each other.”-BOWLEY. “Statistics is the science of estimates and probabilities.”-BOWLEY A.L.

“Statistics is a method of decision making in the face of uncertainty on the basis of numerical data and calculated risks.”-PROF.YA-LUN-CHOU“

Statistics is defined as the science of collection, presentation, analysis and interpretation of numerical data."-CROXTON AND COWDEN.

From all I conclude that statistics is another tool in the life of human which makes their life easier and independent. Statistics is divided in as:

5.1. Descriptive statistics:-

Data that are in the form of tabular form, graphical or numerical form are referred as descriptive statistics. It is the process of describing data and tries to reach to conclusion based on it. It is a type of statistics which gives us a coefficient that summarizes the given data. It is divided as

5.1.1. Measure of central tendency:-

A measure of central tendency gives us a rough idea about where the data is cantered. It is divided into:-

5.1.1.1. Mean (average):-It is the sum of data values divided by the number of data values.

5.1.1.2. Median: - It is the middle value of data set when arranged in ascending order.

5.1.1.3. Mode:-It is value which has the highest frequency.

Note: - it is all depended upon the how the data is scattered. Then, we come across a term called variability.it is defined in as "measurement of distance from mean."

A	B
0	31
5	32
20	33
35	34
50	35
60	36
80	37

Example: -Let us consider two data as:-

Here we observe for data A, data is spread out but in case data B, data is clustered around mean.so measure of central tendency is not sufficient to give complete information about data A in comparison that of data B. We use the factor variability generally to describe scatter. We describe variability using a single number, which is called as "measure of dispersion."

5.1.2. Measure of dispersion: -The dispersion or scatter in data is measured on the basis of the observations and the type of central tendency. They are divided into four types with increasing preferences as:-

5.1.2.1. Range:-

Range is the difference between highest and lowest values in the series. It tells us about the rough idea about variability or scatter but does not tell about the dispersion of data from a measure of central tendency.

5.1.2.2. Quartile deviation:-

It is a slightly better approach than the range.it divides the data into four parts naming $1/4^{th}$ part as q1 and $3/4^{th}$ part as q3 and divide the difference of q1 and q3 by 2, will give us a quartile deviation. But quartile deviation does not satisfy some of data of good measure of deviation.

5.1.2.3. Mean deviation:-

If we take a fixed value b and x is the different observation. Then mean deviation is the division of sum of deviation about b from x and number of terms. An absolute measure of dispersion is the mean of these deviations. It is better than range and quartile deviation.

5.1.2.4. Standard deviation:-

It does not take absolute value but the square of sum of deviations which are non-negative. It is defined in as square root of variance. In standard deviation we comes through three cases arises:-

a. When sum is zero, this implies that there is no dispersion at all as all observation is equal to the mean.

b. When sum of the square of deviation is small, this shows it is close to mean so; there is a lower degree of dispersion.

c. When sum is large, there is the higher degree of dispersion of the observation.

5.1.2.5. Variance:-it is square root of division of sum of square of deviation to number of observations.

5.2. Inferential statistics:-

Scientific procedure to make inferences about population based on its sample, is termed in as inferential statistics.

Or

Data from sample can be used to make estimates and test hypothesis about characteristics of a population.

5.2.1. Population

It is the collection of all elements under statistical investigation about which we are trying to draw some conclusion.

5.2.2. Sample

It is the portion of population drawn through a valid statistical procedure so that it can be regarded as true representatives of the entire population.

6. Some useful terms:-

6.1. Probability distribution

A probability distribution is a statistical function that describes all the possible values and likelihoods that a random variable can take within a given range. This range will be between the minimum and maximum statistically possible values, but where the possible value is likely to be plotted on the probability distribution depends on a number of factors.

6.2. Normal distribution

The normal distribution, also known as the Gaussian or standard normal distribution, is the probability distribution that plots all of its values in a symmetrical fashion, and most of the results are situated around the probability's mean. Values are equally likely to plot either above or below the mean. Grouping takes place at values close to the mean and then tails off symmetrically away from the mean.

6.3. Skewness:-

Skewness is a term in statistics used to describe asymmetry from the normal distribution in a set of statistical data. Skewness can come in the form of negative Skewness or positive Skewness, depending on whether data points are skewed to the left and negative, or to the right and positive of the data average. A dataset that shows this characteristic differs from a normal bell curve.

6.4. Kurtosis:-

Kurtosis is a statistical measure that's used to describe the distribution, or skewness, of observed data around the mean, sometimes referred to as the volatility of volatility. Kurtosis is used generally in the statistical field to describe trends in charts. Kurtosis can be present in a chart with fat tails and a low, even distribution, as well as be present in a chart with skinny tails and a distribution concentrated toward the mean.

6.5. Excessive kurtosis:-

A statistical term describing that a probability, or return distribution, has a kurtosis coefficient that is larger than the coefficient associated with a normal distribution. This will signal that the probability of obtaining an extreme value in the future is higher than a lower level of kurtosis. Kurtosis is a measure of the likelihood that an event occurring is extreme in relation to a given distribution.

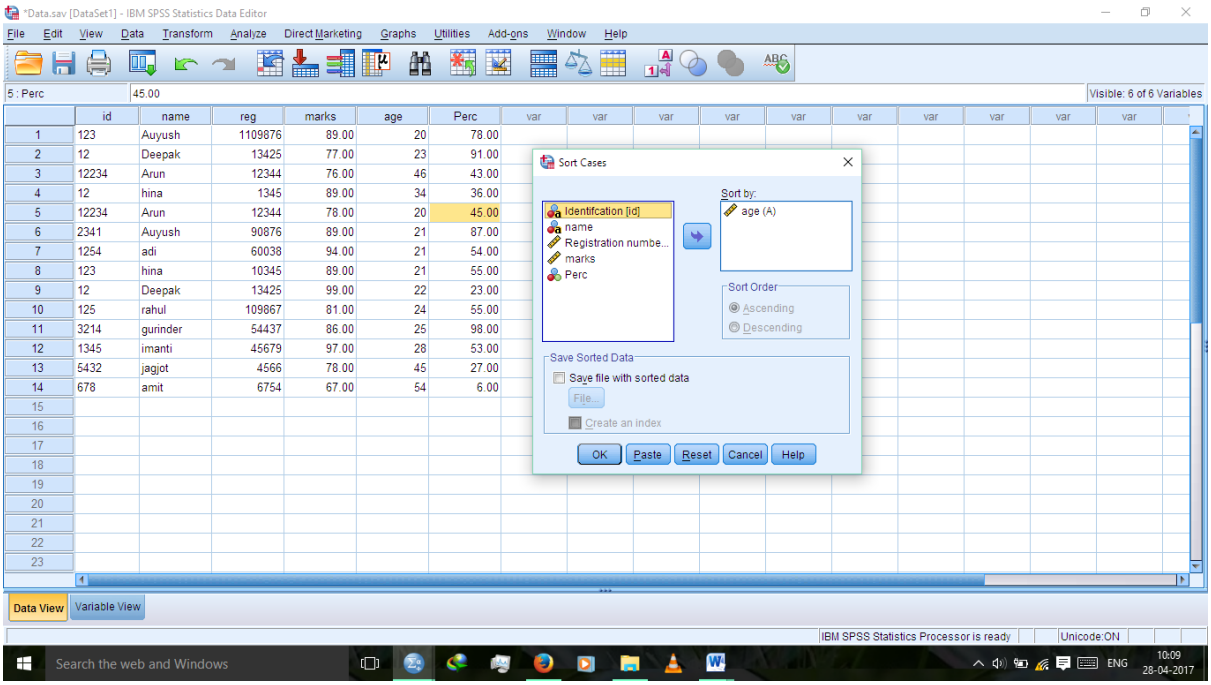
7. about SPSS:-

SPSS is a Windows based program that can be used to perform data entry and analysis and to create tables and graphs. SPSS is capable of handling large amounts of data and can perform all of the analyses covered in the text and much more. SPSS is commonly used in the Social Sciences and in the business world, so familiarity with this program should serve you well in the future.

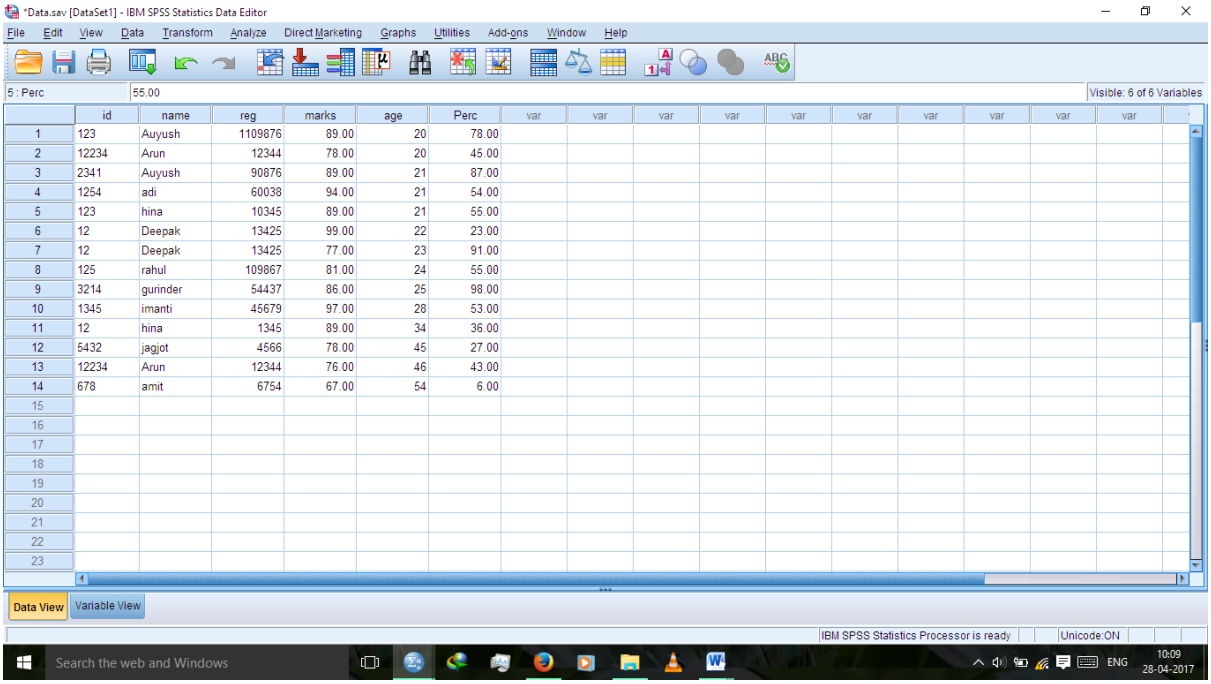
- **Sort data**

  In this example we have sorted data according their ages.

  Data->sort cases->age(shifted to another box)

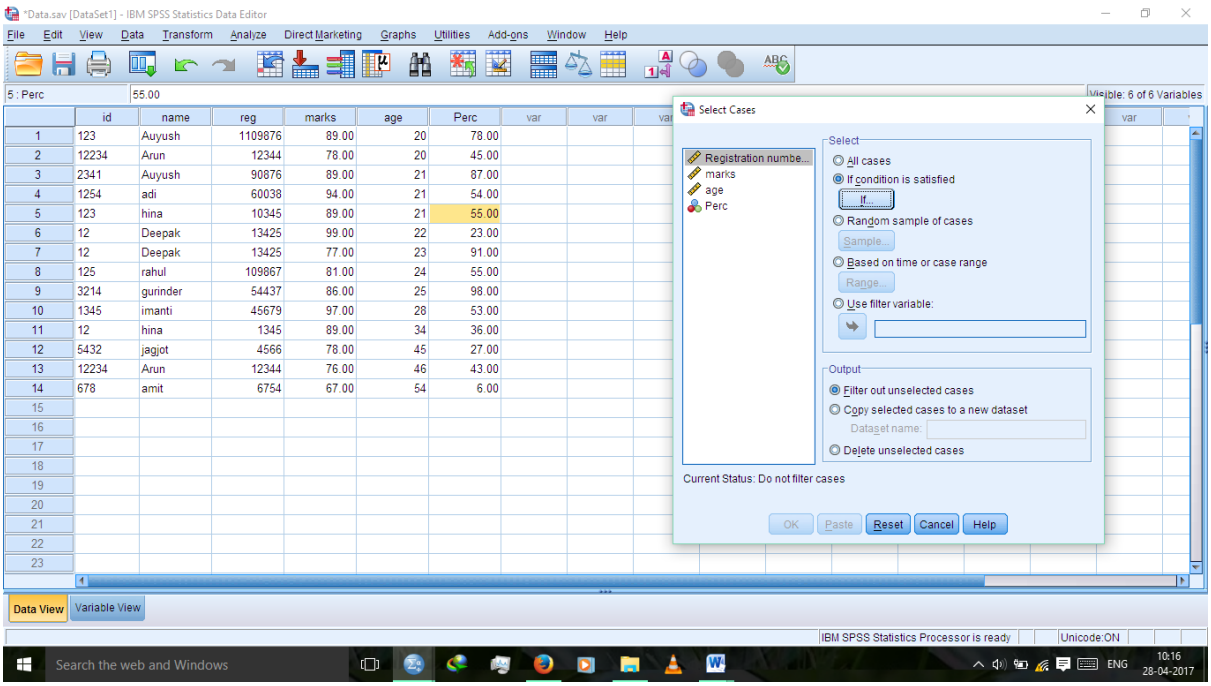


After sorting now data is arranged according to their age in ascending order.

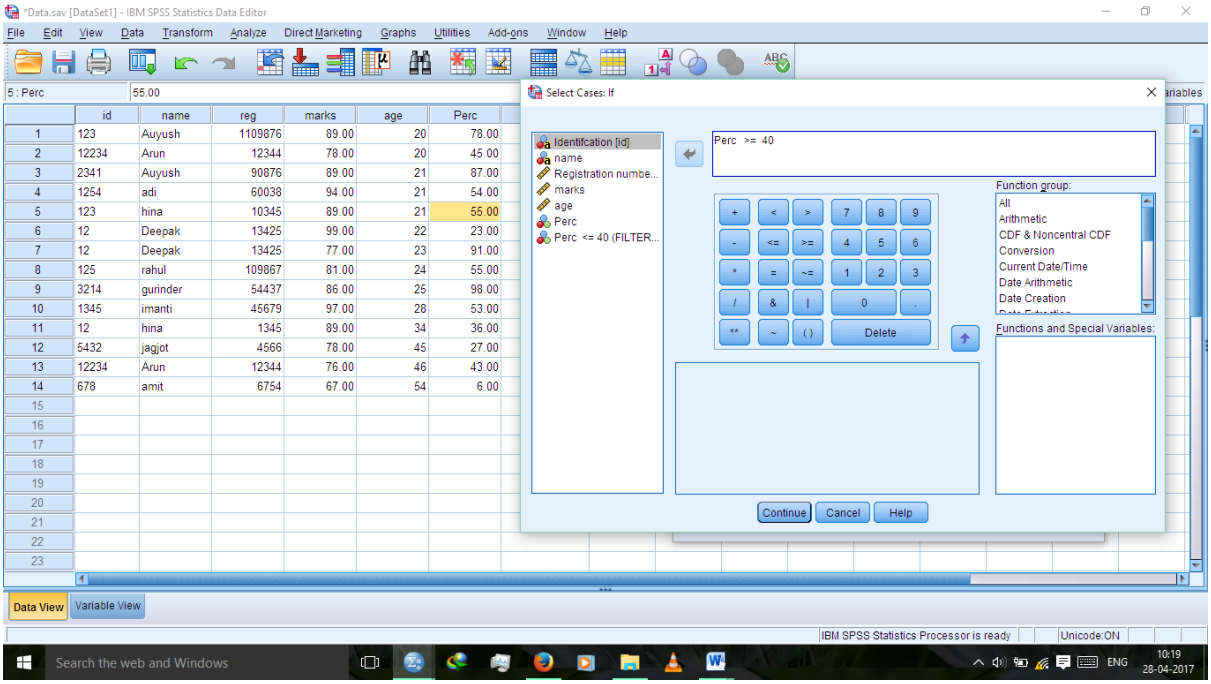


- **Select cases**

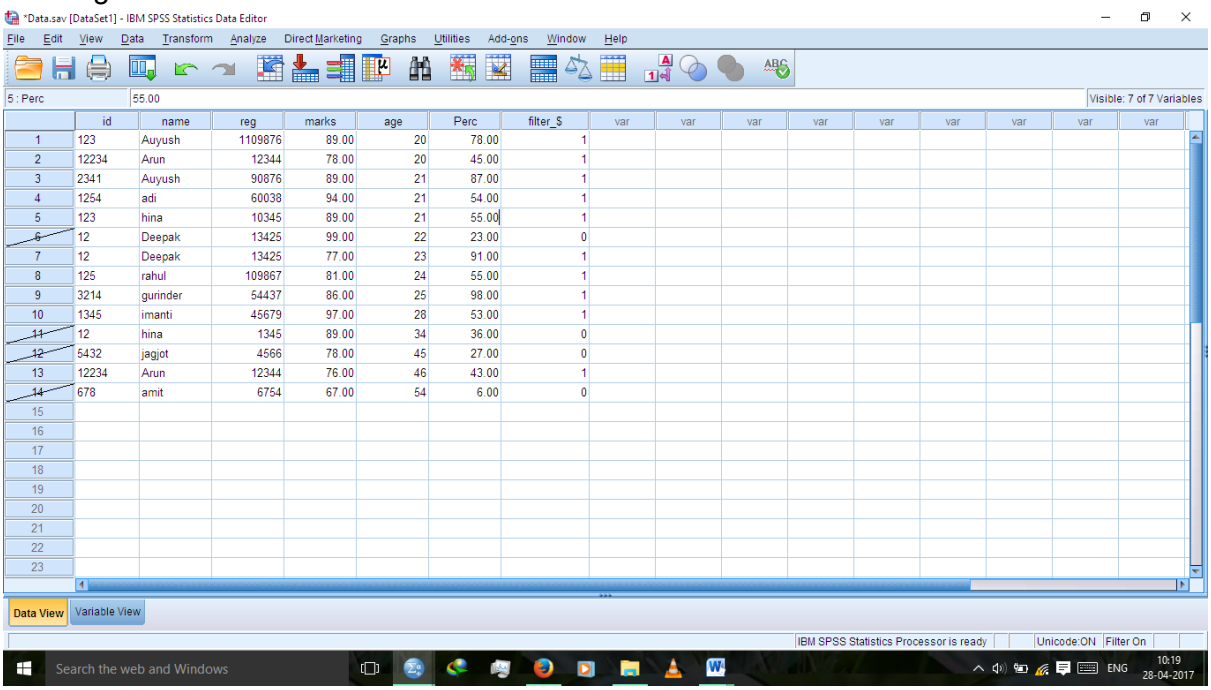
  Using select cases we can get the particular case in which the condition is satisfied.



Here we took a case of percentage>=40 case.



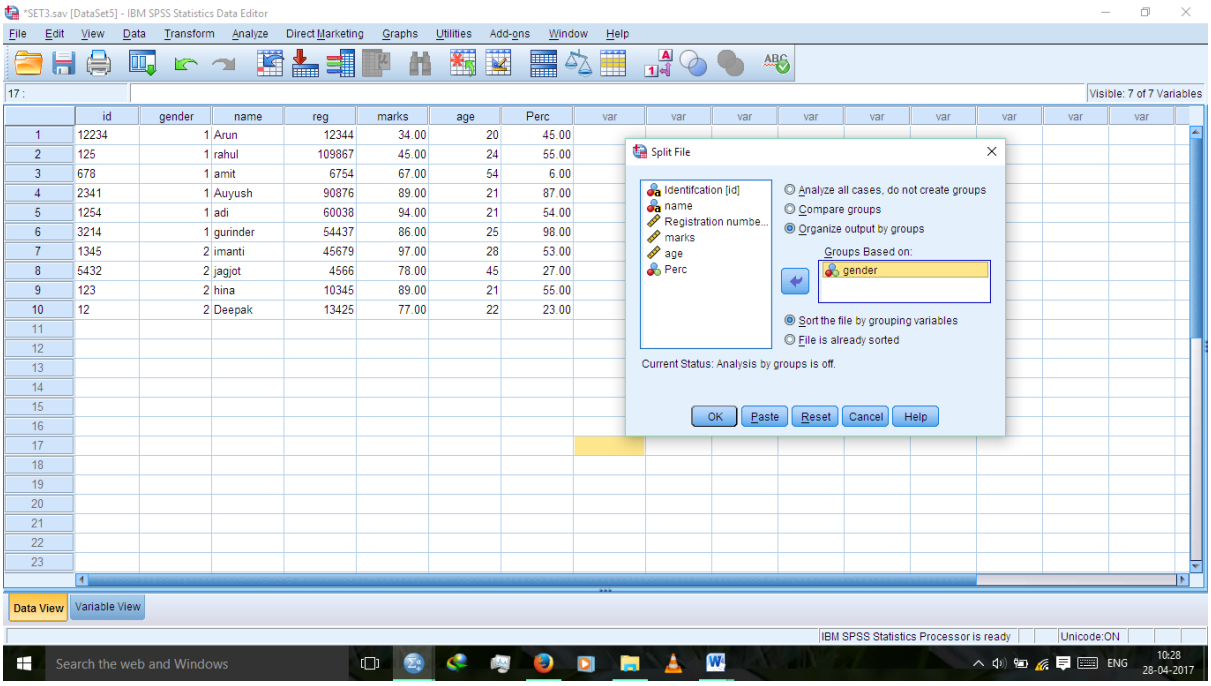
So we get an additional column “filter” which shows 1 for “true” and 0 for “false”.



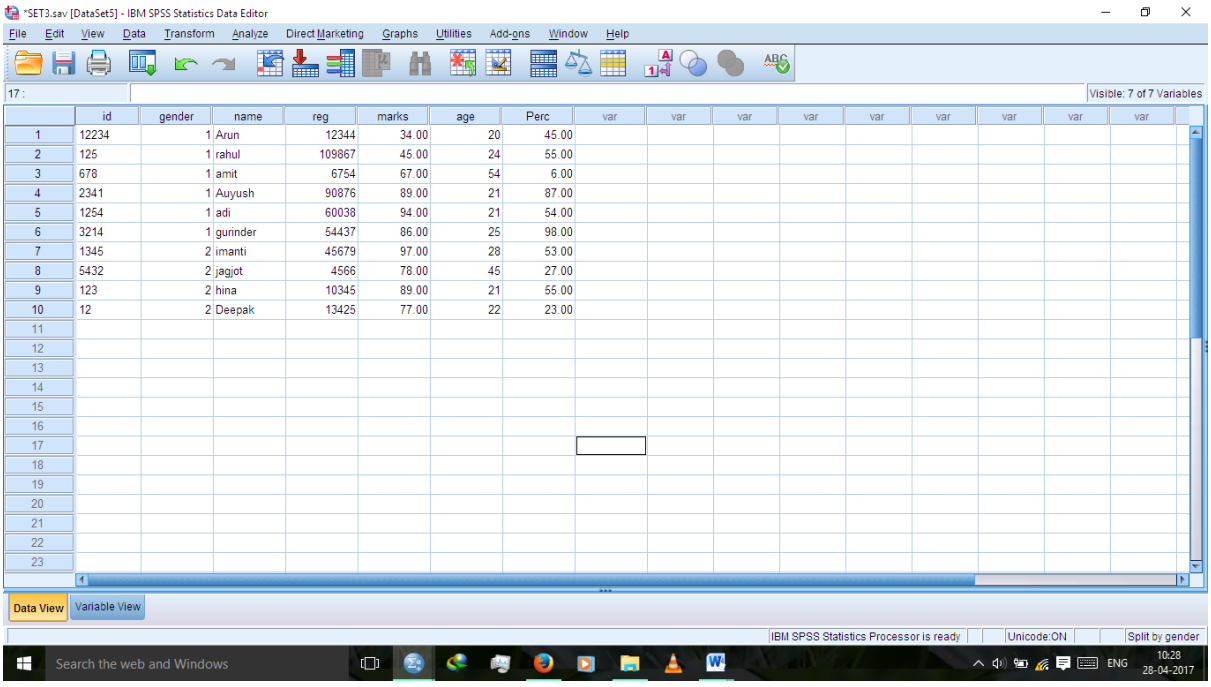
	id	name	reg	marks	age	Perc	filter_$
1	123	Auyush	1109876	89.00	20	78.00	1
2	12234	Arun	12344	78.00	20	45.00	1
3	2341	Auyush	90876	89.00	21	87.00	1
4	1254	adi	60038	94.00	21	54.00	1
5	123	hina	10345	89.00	21	55.00	1
6	12	Deepak	13425	99.00	22	23.00	0
7	12	Deepak	13425	77.00	23	91.00	1
8	125	rahul	109867	81.00	24	55.00	1
9	3214	gurinder	54437	86.00	25	98.00	1
10	1345	imanti	45679	97.00	28	53.00	1
11	12	hina	1345	89.00	34	36.00	0
12	5432	jagjot	4566	78.00	45	27.00	0
13	12234	Arun	12344	76.00	46	43.00	1
14	678	amit	6754	67.00	54	6.00	0
15							
16							
17							
18							
19							
20							
21							
22							
23							

- **Split file**

  In this case, we want the data according to data here we organize according to their gender.

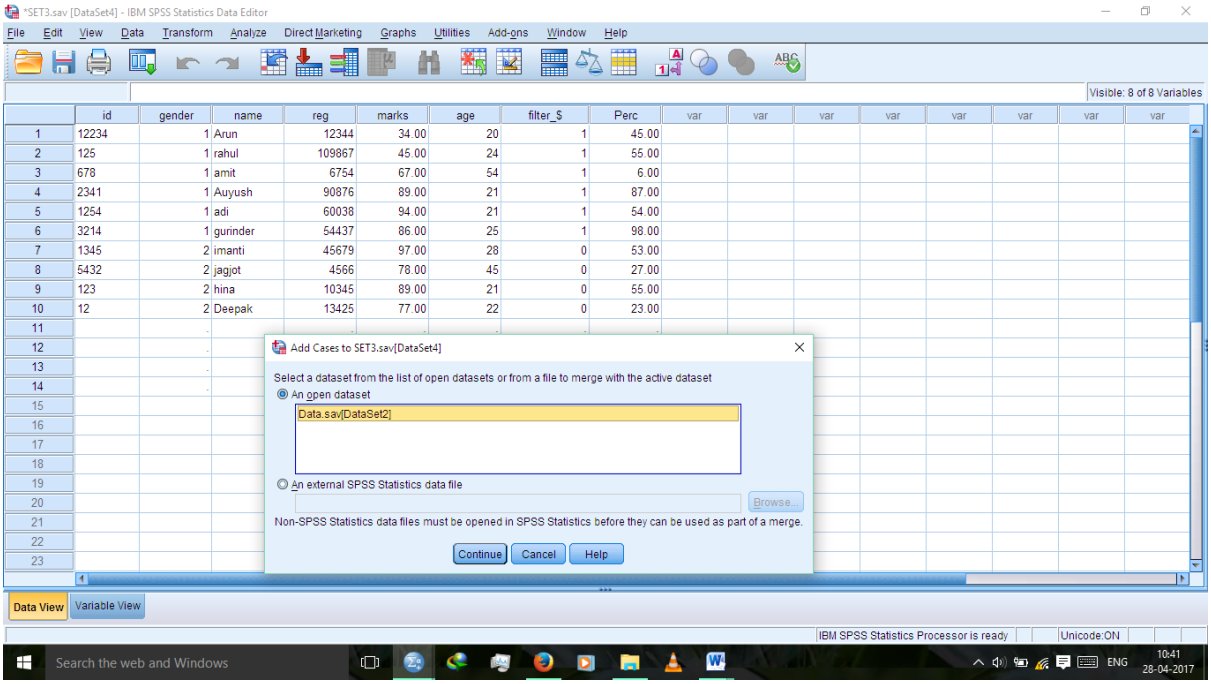


And we get data first for male defined as 1 and followed by female defined as 2.

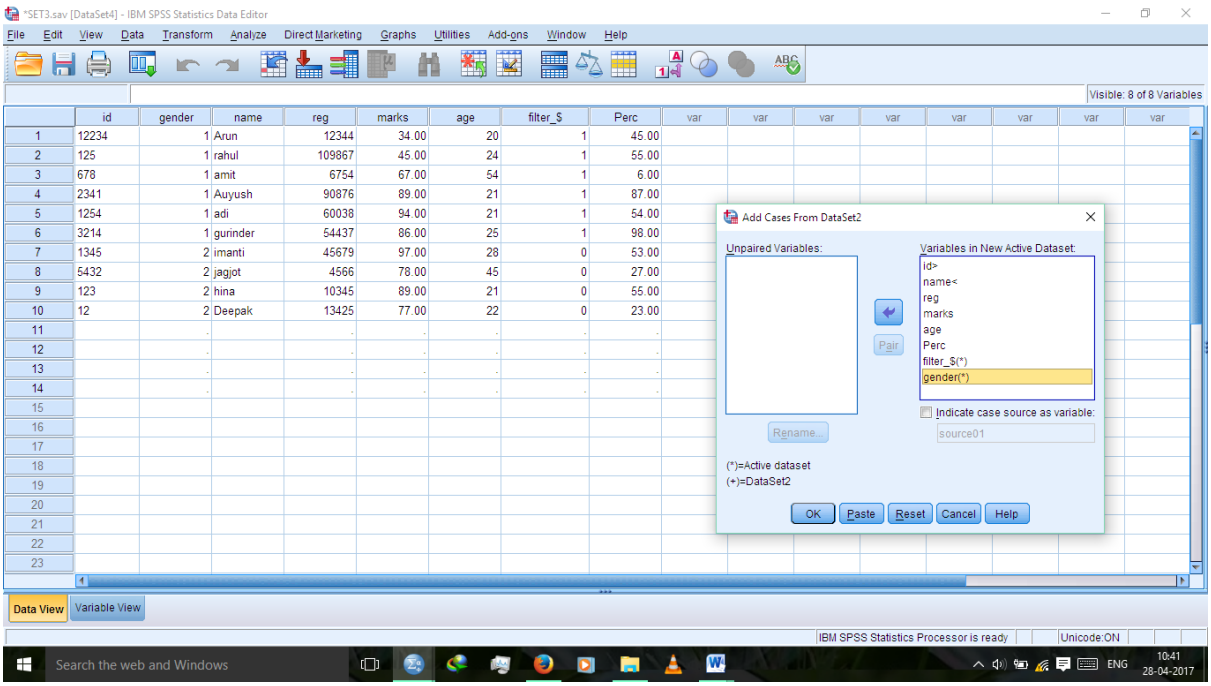


- **Merge file**

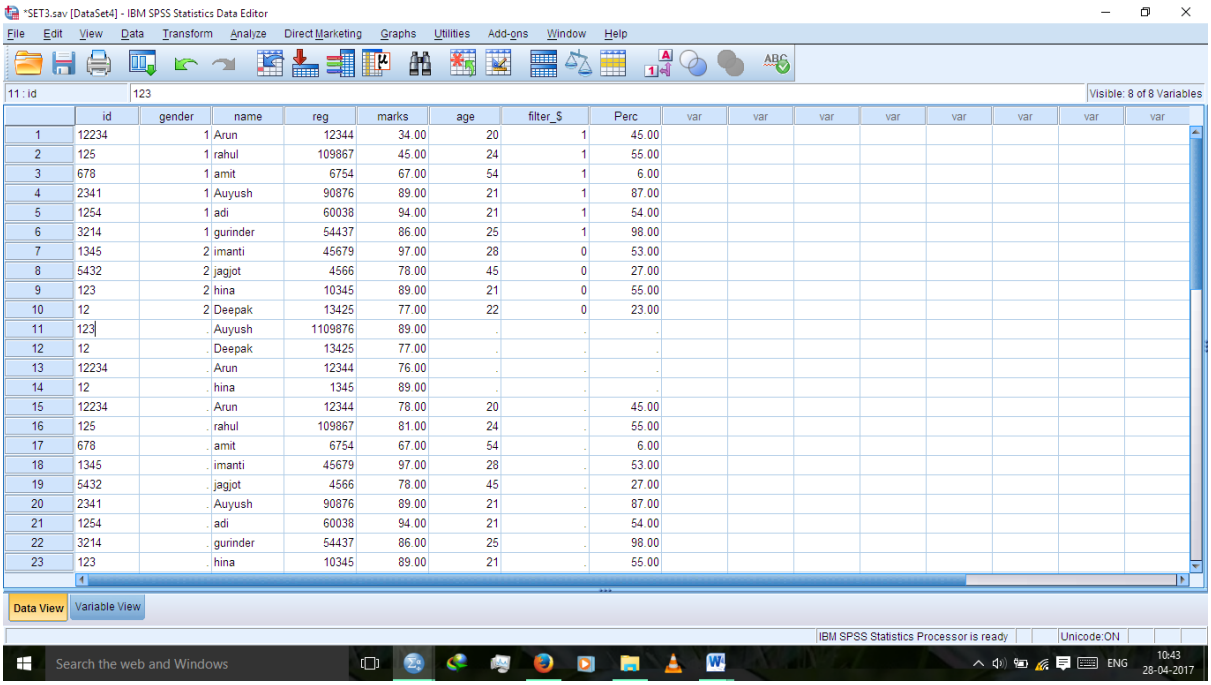
  Here we mere two file into one file.



Then transfer the unpaired variable to the active dataset.



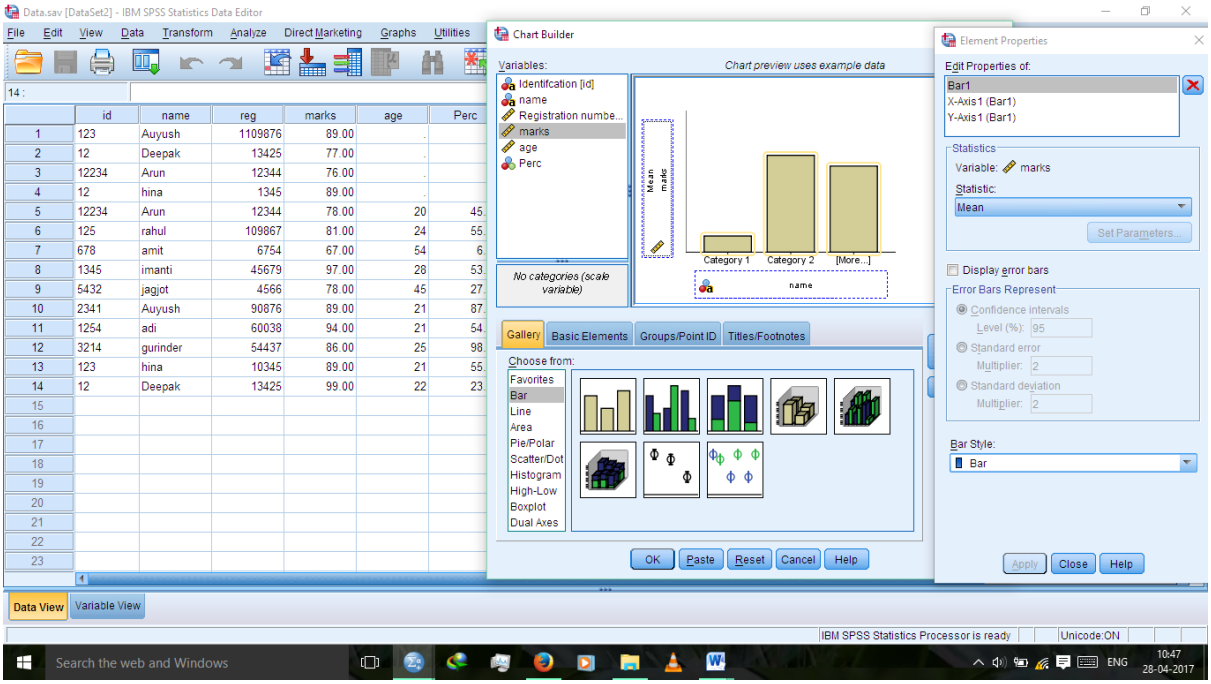
And we get the merged file of two data in one file.



	id	gender	name	reg	marks	age	filter_$	Perc
1	12234	1	Arun	12344	34.00	20	1	45.00
2	125	1	rahul	109867	45.00	24	1	55.00
3	678	1	amit	6754	67.00	54	1	6.00
4	2341	1	Auyush	90876	89.00	21	1	87.00
5	1254	1	adi	60038	94.00	21	1	54.00
6	3214	1	gurinder	54437	86.00	25	1	98.00
7	1345	2	imanti	45679	97.00	28	0	53.00
8	5432	2	jagjot	4566	78.00	45	0	27.00
9	123	2	hina	10345	89.00	21	0	55.00
10	12	2	Deepak	13425	77.00	22	0	23.00
11	123	.	Auyush	1109876	89.00	.	.	.
12	12	.	Deepak	13425	77.00	.	.	.
13	12234	.	Arun	12344	76.00	.	.	.
14	12	.	hina	1345	89.00	.	.	.
15	12234	.	Arun	12344	78.00	20	.	45.00
16	125	.	rahul	109867	81.00	24	.	55.00
17	678	.	amit	6754	67.00	54	.	6.00
18	1345	.	imanti	45679	97.00	28	.	53.00
19	5432	.	jagjot	4566	78.00	45	.	27.00
20	2341	.	Auyush	90876	89.00	21	.	87.00
21	1254	.	adi	60038	94.00	21	.	54.00
22	3214	.	gurinder	54437	86.00	25	.	98.00
23	123	.	hina	10345	89.00	21	.	55.00

- **Graphs(via chart builder)**

We convert our tabular data in graphical form.



	id	name	reg	marks	age	Perc
1	123	Auyush	1109876	89.00	.	
2	12	Deepak	13425	77.00	.	
3	12234	Arun	12344	76.00	.	
4	12	hina	1345	89.00	.	
5	12234	Arun	12344	78.00	20	45.
6	125	rahul	109867	81.00	24	55.
7	678	amit	6754	67.00	54	6.
8	1345	imanti	45679	97.00	28	53.
9	5432	jagjot	4566	78.00	45	27.
10	2341	Auyush	90876	89.00	21	87.
11	1254	adi	60038	94.00	21	54.
12	3214	gurinder	54437	86.00	25	98.
13	123	hina	10345	89.00	21	55.
14	12	Deepak	13425	99.00	22	23.
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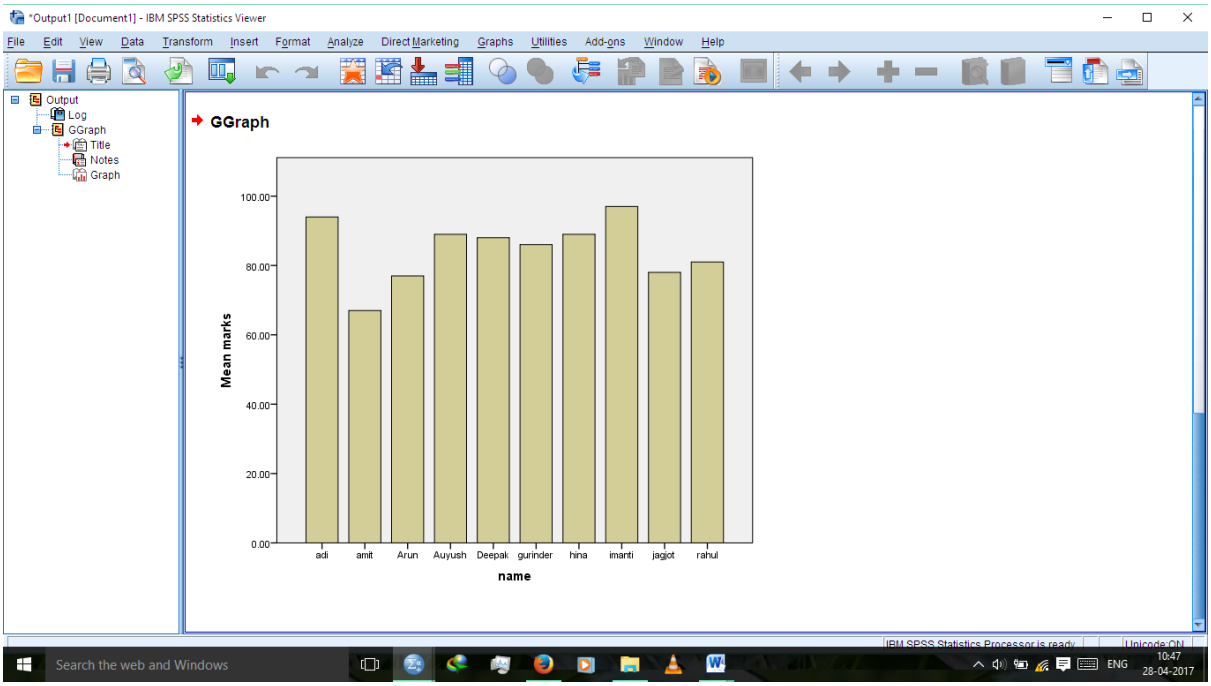
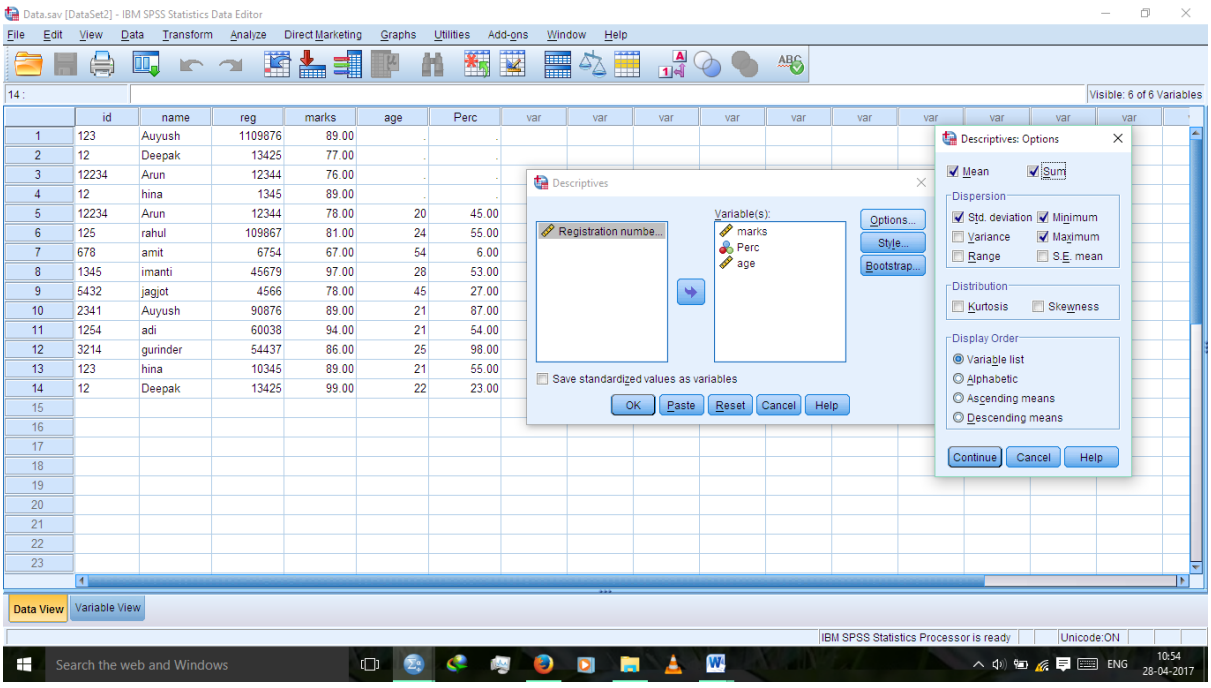
22						
23						

Here we build a graph between name and marks in the form of bar graph.

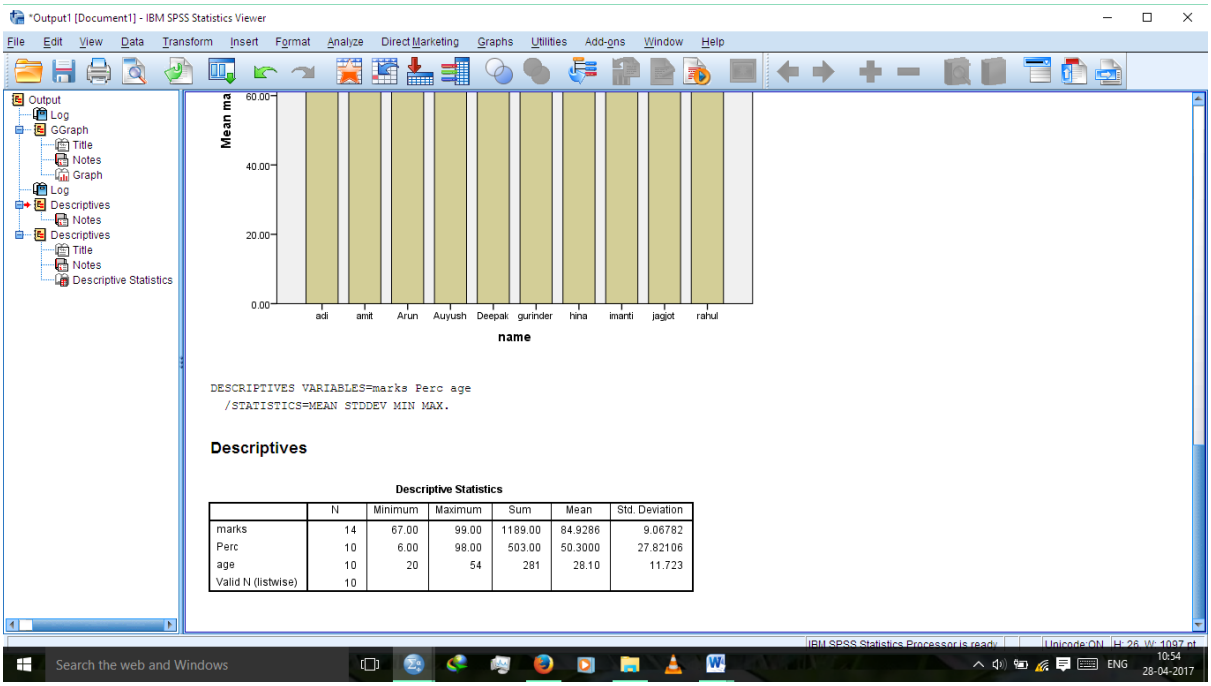


- **Analyse the data**

If we want find the descriptive statistics (mean, standard deviation, etc.).



Here we find mean, S.D, sum, etc. for given data.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Deepak
gurinder
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jagjot
rahul
name
DESCRIPTIVES VARIABLES=marks Perc age
/STATISTICS=MEAN STDDEV MIN MAX.
Descriptives
Descriptive Statistics
N Minimum Maximum Sum Mean Std. Deviation
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Perc 10 6.00 98.00 503.00 50.3000 27.82106
age 10 20 54 281 28.10 11.723
Valid N (listwise) 10
IBM SPSS Statistics Processor is ready
Unicode:ON
Search the web and Windows
ENG
10:54
28-04-2017

PART - II

1. INTRODUCTION

Transition from school to college is drastic, first time in our life we go through such phase when we are not around our guardians. So living by yourself and taking care of yourself is one of the huge task so we came across some of the problems like maintain your CGPA, balancing social pressure with academic demands, new roles and the need to develop new friendships.

This is the age where you get involves in bad habits like drinking alcohol as well as other substances. Even this is the age which will test person's mental health in which person with lower mental health leads to higher rates of anxiety, depression and suicide. Apart from it, some comes with existing health issue that requires proper diagnosis and care. So to gather information, we conduct a survey whose data will give information about risk and protective behaviours prevalence of a variety of health problems/conditions, which may affect academic performance and retention. These following content areas are covered in this assessment:

1. General health of university students
2. Disease and injury prevention
3. Academic impacts
4. Violence, abusive relationships and personal safety
5. Alcohol, tobacco and other drug use
6. Nutrition and exercise
7. Mental health
8. Sleep

The remaining reports are categorized into these subdivisions/sections:

Section one is concerned with defining health and wellbeing of students at LPU. In section second goal of the project is discussed in brief. Methodology adopted will be discussed in section third depending upon the parameters taken in the survey questionnaire.

1.1. Health and wellbeing at LPU

In this modern world, with increasing pollution and decreasing quality of soil leads to weaken the minerals percentage in food leads to shortage of proper nutrient in body even worsen their health. As you all know our modern generation shifted more towards fast good food over nutritious food. So in this modern world, everyone concerns about its health. The world health organization defines health as "state of complete physical, mental and social well-being and not merely the absence of disease and infirmity."

If we have to define our health into subcategories then it will be decided on the factors like:

1. Feeling vital and full of energy
2. Have sense of purpose in life
3. Experiencing connectedness to community
4. Being able to do things one enjoys

5. Having good social relationship
6. Experiencing a sense of control over one's living conditions\

1.2. Goals

We conduct a survey to develop a better understanding of student health at LPU. By getting report from survey we will get know about how health have an effect on academic of a student and we will develop counter measures to deal with problems.

Overall goals is down into these notes

1. Develop a baseline by comparing different blocks within LPU.
2. Increasing our understanding of students' health habits, behaviours, and perceptions: This survey act like a sample for us which generate a report which will give you better understanding on student life in LPU.
3. Stimulate community discussions.
4. Use the evidence to design healthy campuses.

1.3. Questionnaire

Following questionnaire is discussed in appendix

PART III

Data analysis from the collected data and the following are the topics to be discussed

In next semester

- **1.4. Methodology**
- **1.5. Result**
- **1.6. Conclusion**
- **1.7. Recommendation**

APPENDIX

TOPIC: - STUDY ON STUDENT HEALTH AT LOVELY PROFESSIONAL UNIVERSITY

(NOTE: - ALL YOUR DETAILS ARE CONFIDENTIAL SO FEEL FREE TO ANSWER QUESTION)

1. BASIC DETAILS:

(NOTE: - GIVE YOUR ANSWERS IN THE FORM OF NUMBER\S

Ex: - DO YOU SLEEP WELL? (Yes (1), No (0)) - 1)

BEFORE ANSWERING THE QUESTIONS PLEASE FILL THE FOLLOWING DETAILS: -

1. Registration number(LPU)- _____
2. *Name(optional)-* _____
3. Gender**(male(0)\female(1)**)- __
4. Age -_____ years
5. Are you **hosteller (0)** or **day scholar (1)**- __
6. What is your weight (in kg)? - ___
7. What is your height (feet or centimetres)? - _____
8. Are you **national (0)** or **international (1)** student? -
9. Are you currently **undergraduate(0)** **\graduate (1)\post graduate (2)** - __
10. What is your current marital status ?**(unmarried (0)\ married (1)\ divorced (2)\ separated(3)\ others (4)**) - __
11. *CURRENT CGPA(optional)-* _____

2. QUESTIONNAIRE

1. How would you describe your general health?(rate your answer as numbers from the appropriate options: **Very bad(0)**, **Bad(1)**, **Average(2)**, **Good(3)**, **Very good(4)**, **Excellent(5)**)- ___

2. Did you rode any wheelers if **yes**, then answer this following question
   1. How often did you (rate your answer as numbers from the appropriate options: **Never (0)**, **Rarely (1)**, **Sometimes (3)**, **Most of the times (4)**, **Always (5))**.
      1. Wear a seat belt when you rode four wheelers? - __
      2. Wear a helmet when you rode any two wheelers? - __

3. Did you consume (rate your answer as follows: **Yes (0)**, **No(1)**)
   1. Cigarette __
   2. Tobacco ___

3. Alcohol(beer, wine, liquor) ___
4. Other (Cocaine, Marijuana, etc.) ___

4. How safe do you feel (rate your answer as follows: **Not safe (0), Safe (1))**: -
1. In daytime __
2. In night time(**question only for hostellers**) __

5. How do you describe your weight(**Underweight(0),Overweight(0),Normal(1)**)-

6. How many servings of fruits and vegetables do you usually have **per day**? (1 serving = 1 medium piece of fruit; ½ cup fresh, frozen, or canned fruits/vegetables; ¾ cup fruit/vegetable juice; 1 cup salad greens; or ¼ cup dried fruit)((rate your answer as follows: **0 servings per day(0), 0-1 servings per day(1), 1-2 servings per day(2), 2-3 servings per day(3), 3-4 servings per day(4), 4 or more servings per day(5))** ___

7. How often do you exercise(rate your answer as follows :**Never(0), Often(1), Regularly(2)**) ___

8. Have any of the following been traumatic or very difficult for you to handle?**(Yes(0),No(1)**):-
1. Academic __
2. Career related issue __
3. Death of family member or friend __
4. Family problem __
5. Other social difficulties __
6. Finances __
7. Health problem of family member __
8. Personal appearance __
9. Personal health issue __
10. Sleep difficulties __
11. Others __

9. Have you been diagnosed or treated for any of the following? **(Yes(0), No(1))**
1. Allergies __
2. Asthma __
3. Back pain __
4. Dental problem __
5. Broken bone/fracture/sprain __
6. Diabetes __
7. Hepatitis B or C __
8. High blood pressure __
9. High cholesterol __
10. Migraine headache __
11. Tuberculosis __
12. Strep throat __

10. Have you received the following vaccinations (shots)?**(No(0),Yes(1)**):-
1. Hepatitis B __
2. Influenza(flu) __
3. Measles, mumps __
4. Chicken pox __
5. Polio __

11. How would you rate the overall level of stress you have experienced?(**No stress(5)**, **Less than average stress(4)**, **Average stress(3)**, **More than average stress(2)**, **Tremendous stress(1**)):- ___

12. Have you ever been diagnosed with depression? **(Yes(0),No(1)**):- ___

13. Do you have any of the following? **(Yes(0),No(1)**):-

1. Attention deficit and hyperactivity disorder(ADHD) ___
2. Chronic illness (e.g., cancer, diabetes, immune disorder, etc.) ___
3. Deafness\hearing loss ___
4. Learning disability ___
5. Partial blindness ____
6. Psychiatric condition ___
7. Speech or language disorder ___
8. Other disability ___

14. Have any of the following affected your academic performance? **(Yes(0),No(1)**):-

1. Alcohol use ___
2. Allergies ___
3. Anxiety ___
4. Cold\sore throat ___
5. Concern for anyone (family, friend, etc.) ___
6. Serious injury (e.g., diabetes, cancer, asthma, etc.) ___
7. Death of family member or friend ___
8. Depression ___
9. Discrimination (e.g., racism, homophobic, sexism, cast, etc.) ___
10. Drug use ___
11. Eating disorder\problem ___
12. Finances ___
13. Homesickness ___
14. Injury (fracture, strain, sprain, cut, etc.) ___
15. Internet use\computer use ___
16. Learning disabilities ___
17. Participation in extracurricular activities ____
18. Relationship difficulties ____
19. Roommate difficulties ____
20. Sleep difficulties ____
21. Stress ____
22. Work ____
23. Others ____

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