Business Data Management
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Lecture 11
Introduction to Spreadsheets

Welcome everyone to the lecture on introduction to spreadsheets. I am S Srivatsa Srinivas a co-instructor at the IIT Madras online BSc degree program. We are going to look at two spreadsheet applications one Microsoft Excel and two Google sheets.

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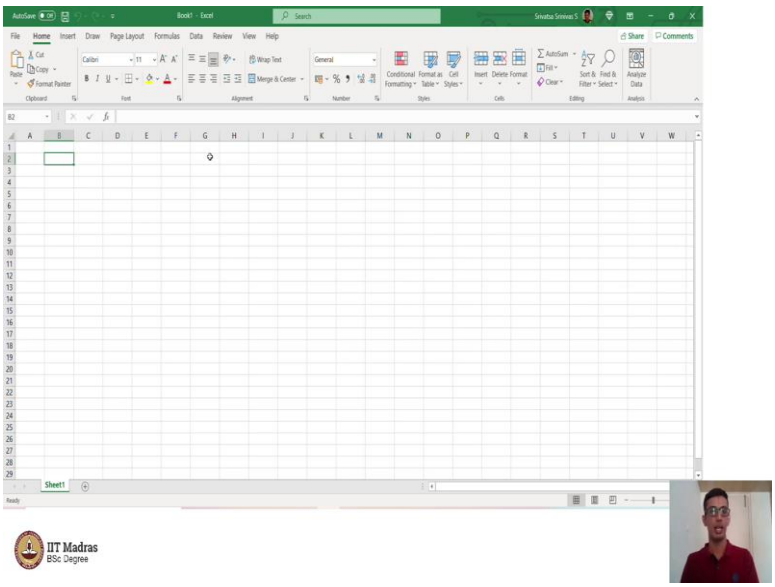

We first look at Microsoft Excel and just type in Excel and application will open, we create a blank workbook and this is how a spread sheet looks. So, you have the rows you have the columns and each of these is called as cell this is cell A1 this is B1 this is C1 and so on. And this is the formula bar.

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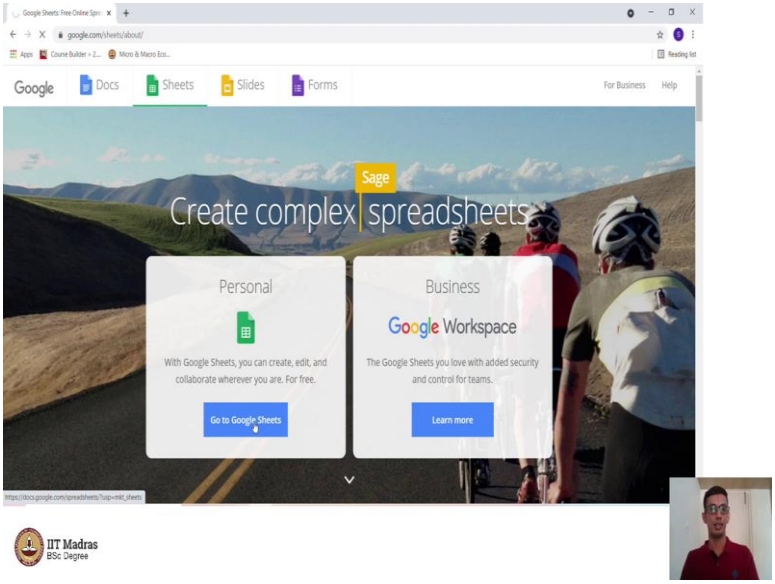

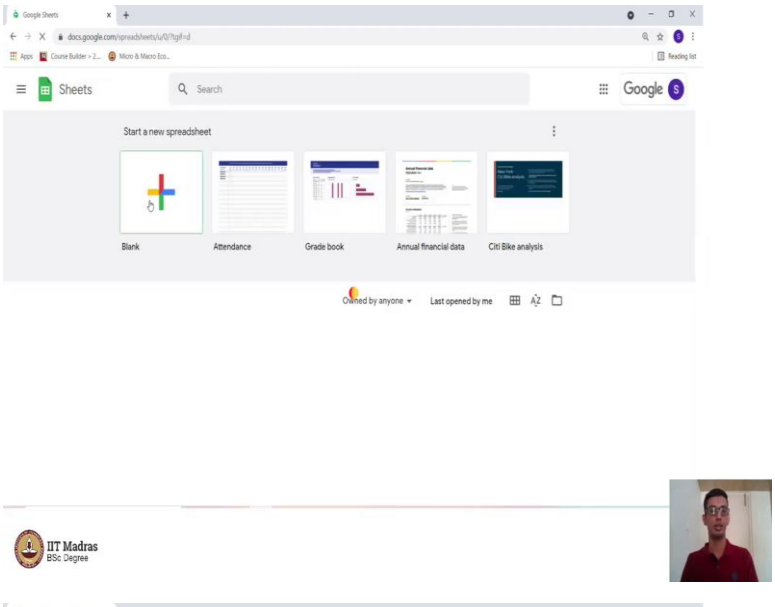

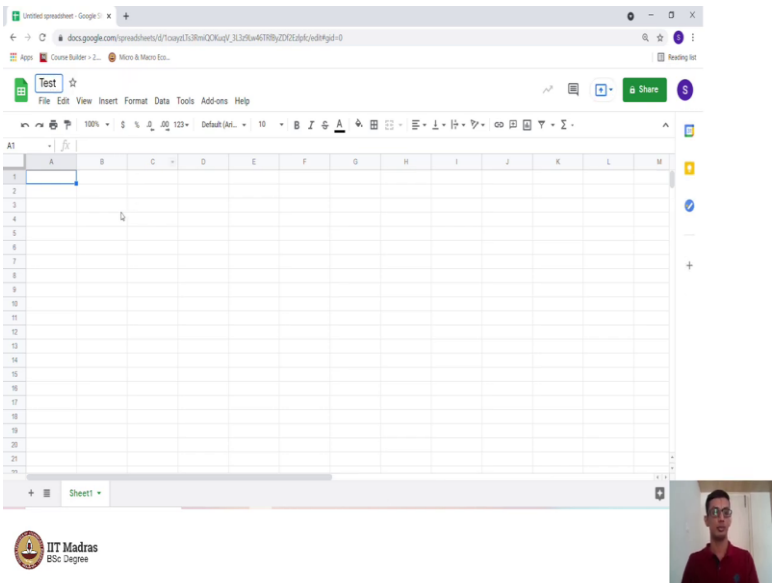

So, we then look at Google sheets, we type in Google sheets. Make sure that you are logged in to your personal Google account when you access Google sheets. And we go to the personal page and this is how a Google sheet will look like, we click blank option and a blank sheet is created. This is how a blank Google sheet will look like. We can name this sheet as Test, for example. And there are many operations which can be performed on Google sheets and Microsoft Excel.

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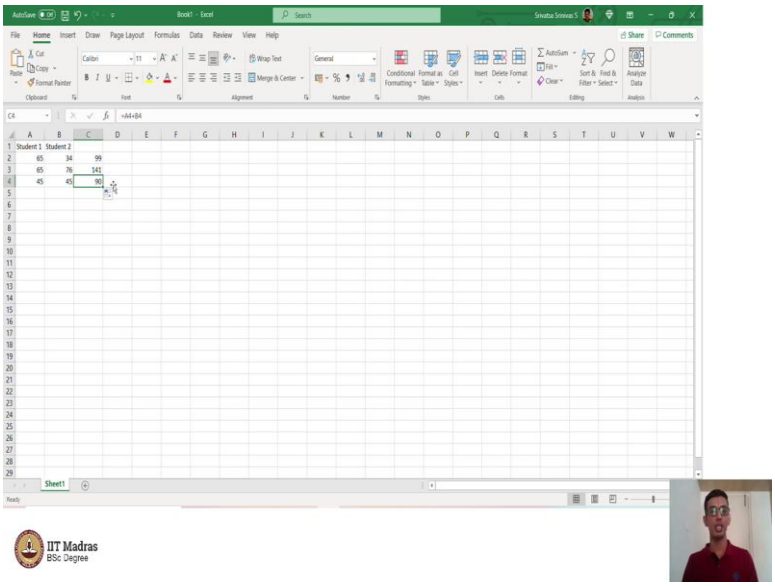

So, we will try to doing some basic operations initially and see how it works. Say we want to compare or add the marks of the two students. I have student 1 here and student 2 here. So, in cell A1, there is student 1 and in B1, there is student 2. So, there are different operations that can be performed but first we will fill in the marks of students in three different subjects. Say they have scored 65, 65 and 45 and 34, 76 and 45.

So, now I can find the sum of students 1 and 2 in subject 1 that is done by doing equal to, and go to that particular cell which needs to be added i.e A2 in this case plus cell B2. Turns out that the sum of students 1 and 2 in a certain subject is 99. Excel has an interesting feature that if you drag of the cell to the other cells it just performs the operations for the other cell. So, what you see here is cell A3 plus cell B3. And similarly here we have cell A4 plus B4.

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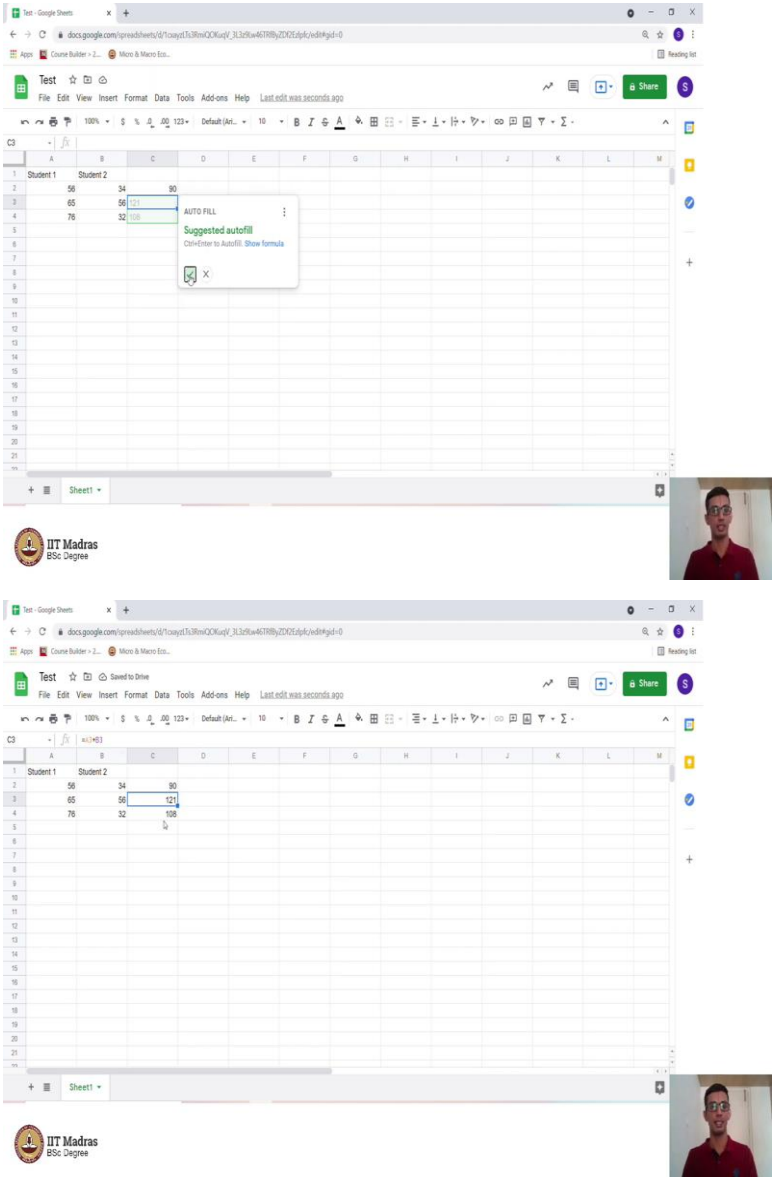

The same operation can be also performed in Google sheets. So, we have student 1 and student 2. So, I randomly type on certain numbers and we can again do the same operations as we did in Microsoft Excel. So, we have A2, equal to A2 plus B2 and this will give us the sum and it asks you whether an auto fill can be performed, we say yes, or even otherwise, you can just drag it and that particular formula is extended to other cells. So, it is A3 plus B3, A4 plus B4 and so on.

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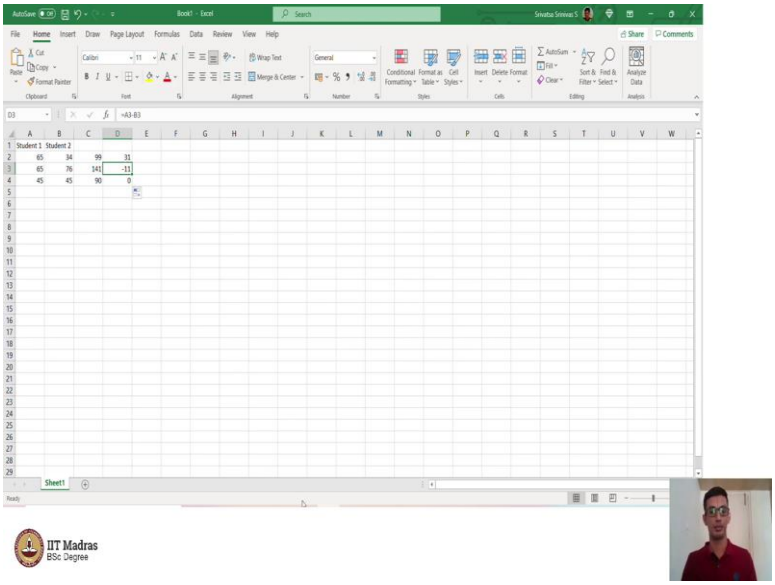

Go back to Microsoft Excel, and let's perform a subtraction. Say subtraction on A2 minus B2 has to be performed . And as you can see, 65-34 = 31 and that is again performed. And 65 -76 = -11. This was just dragged down at the operations were extended.

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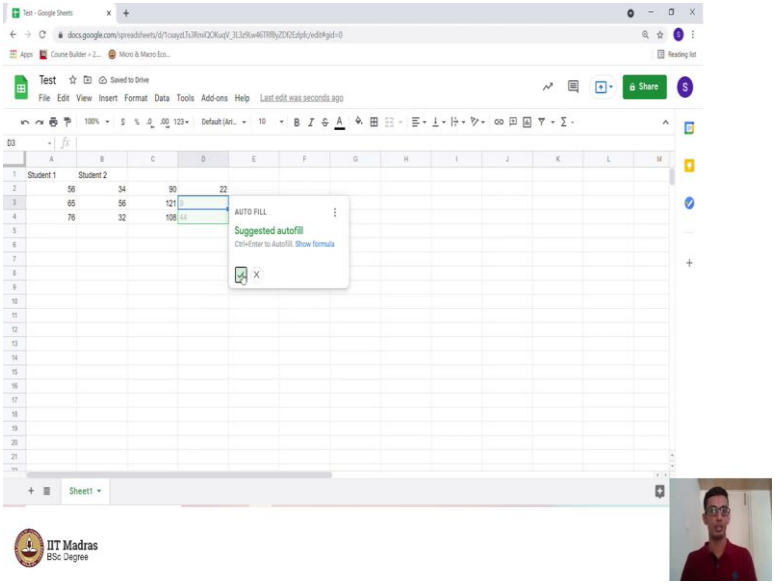

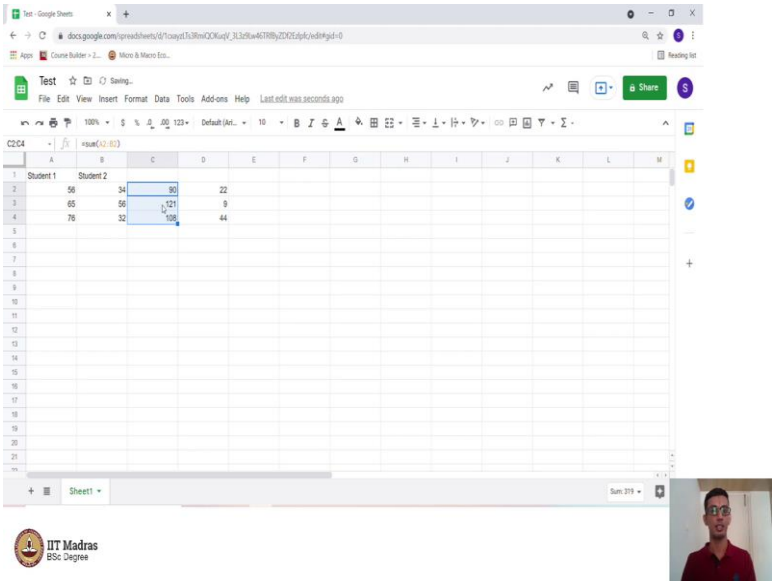

Similarly, Google Sheets also has that capability. So, I do and A2 - B2. And again, asked for auto fill and the operations have been extended. And there are various other commands to look at the sum, for example, equal to A2 + B2 is not the only way. For example, you could have done a sum of 56 and 34 by this. So, A2 till B2 so there is a column in between. So, from cells, A2 till B2 you perform the sum and the sum remains the same. And again, you extend it and the answer will be the same as before.

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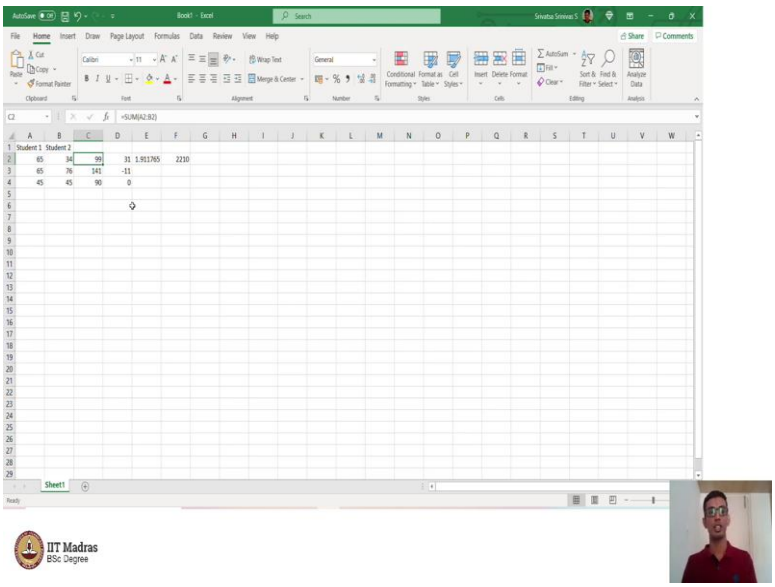

And the same operations, again can be performed on a Microsoft Excel. So, you perform sum A2 plus B2, and you have the same solution anyway, and you can drag it. The same is very straightforward for other operations such as multiplication and division,. So, if I want to do A2 / B2 then do this way as well, A2 by B2 is a certain value, or if you want to multiply these

two numbers, A2 into B2 is also quite possible. So, these are the basic operations which can be performed in Excel. And you could use the drag feature to drag the same formula to other cells.

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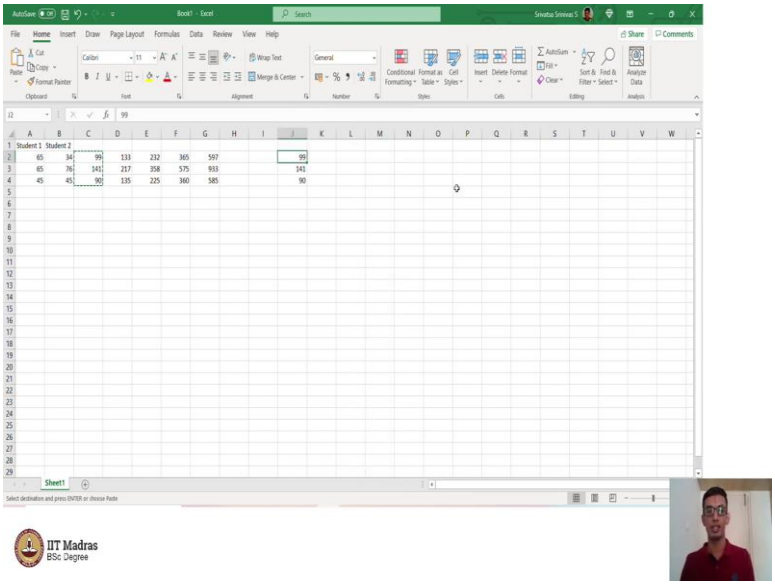

The next interesting thing with Excel is the copy feature. So, I have certain formulas here. When these formulas are copied to a different cell, say cell G2 ,it subsequently gets extended to that particular cell. Hence the sum of A2 to B2, that is in cell C2. Now, moved to cell G2, automatically changes to E2 and F2.

I am copying these cells and putting it in D2, this will become B2 and C2.. So, we initially have A2 and B2, and the sum of A2 and B2 is provided in cell C2. Now, when I copy this formula to D2, it automatically changes to B2, and C2. So, as you move along the columns, the values get updated to the next column automatically.

when we go to E2, when formula is copied here, it will automatically change to C2 and D2. And when I do it to F, it will become D2 and E2. So, in cell F, it is sum of B2 till E2 and in cell G it is E2, to, F2. So, when we copy a certain cell with a formula, it will get copied automatically with the formula. And it gets updated depending on the cell in a particular row or a particular column.

And as you can see here, the rows also get updated. So, this is B3 to C3, this is C3 to D3, this is D3, E3, and so on. So, this is what is happening here. Instead, if I wanted to only copy the values, what we can do is we can go to a particular cell and right click, and there is an option

to copy values alone. And 99, 141 and 90 are provided here. So, there is no formula here, we are just copying down the values.

This is most useful, because in certain cases, we would want the particular values which we obtained from a certain calculation. And we do not want to mess up by adding formulas in the different cells, we only want these three values. In that case, copying and seeing paste as values will help. And the same operation can be also performed on Google Sheets.

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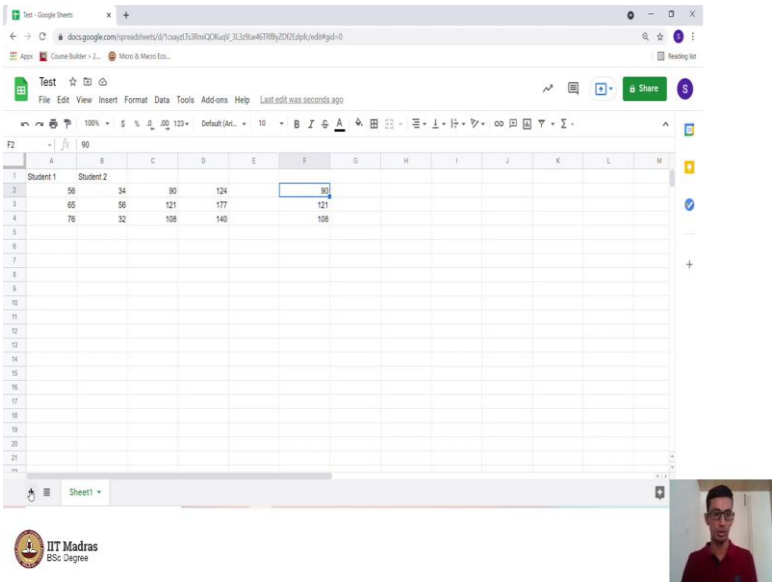

So, we have the sums here, when copied and pasted in D2, this will automatically get updated to B2 and C2. But I do not want this to happen in certain cases. What do I do then? I come to the cell, do a right click have paste special and do paste values only so that the initial values are retained. So, these are some of the basic operations which can be performed in Excel. Finally, you will look at how charts can be inserted.

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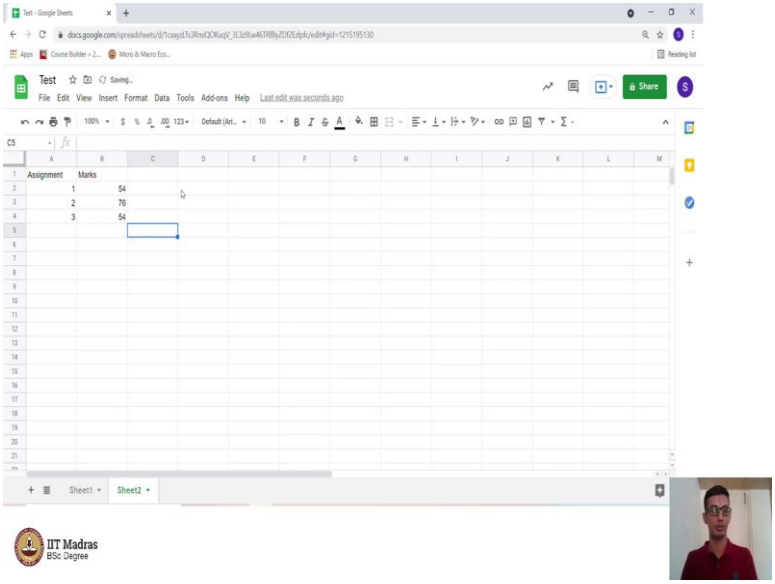

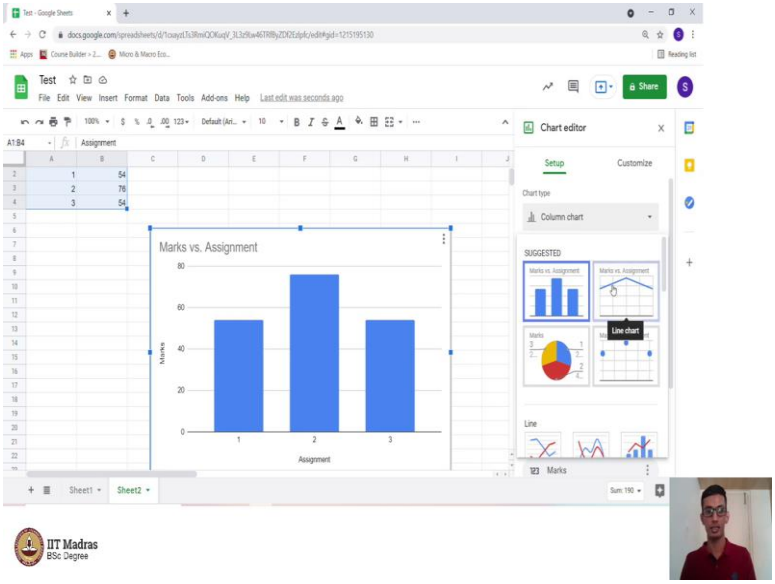

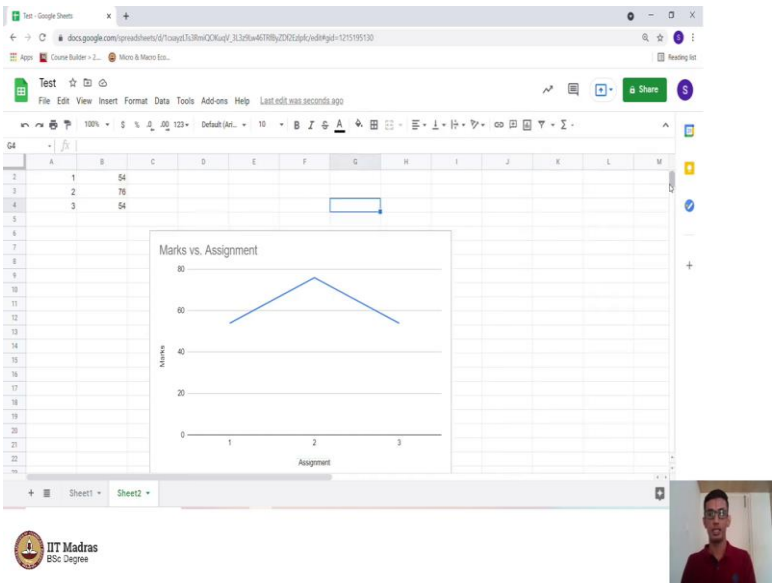

So, I now go to a new sheet. Now we have sheet 2. And say we have certain roll numbers. And we have their marks for an assignment and the see how the marks in the assignment for a particular student and variation. So, in assignment 1 assignment 2 and assignment 3, and the marks are 54, 76 and 54,repectively .A charter is inserted but the data is not selected yet.

Here initially data is selected, then insert in the tool bar and select chart option. As you can see, this is a bar chart which is being generated. So, in assignment 1, it is called about 56, , 54 in assignment 2, 76, in assignment 3 it is 54. The chart is generated in the following manner. Instead, if we want a line chart it looks in the image down below. So, the assignment is on the x axis, the axis on the y axis, and a chart is created here.

But as you can see, the labels are 1, 1.5, 2, 2.5 and 3 which is not the case there cannot be an assignment 2.5, based on the data. So, if we want to change such values, it is indeed possible. So, go to the horizontal axis, and say treat labels as text. And when I do that, it changes to 1, 2, and 3, and we do not have the 1.5s and the 2.5s.

Because we are only looking at the labels. So, this is how you create a chart on Google Sheets. we have a edit chart option. And there are various ways in which you can customize the chart. And there are various other charts available as well. Bar charts and line charts are not the only options and you could look at various other charts, then the options are provided here.

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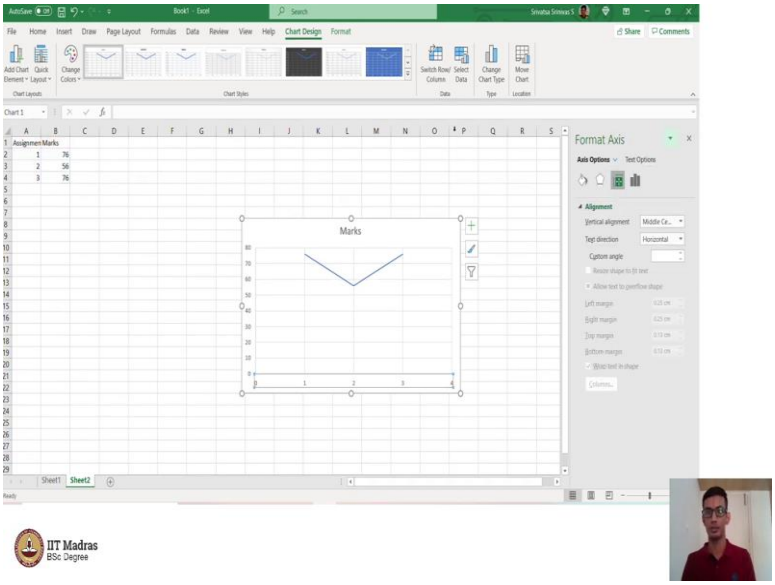

And in Excel, you could similarly create a new sheet by doing this plus and we have assignment and you have the marks. there are assignments 1, assignment 2, assignment 3,

marks are 76, 56 and 76. Now I need to create a chart again, I go to insert while selecting the values. So, there is an option to generate the chart. So, you can create bar charts in this manner. Or you could create a tree maps, or you could create line charts and so on.

So, we will look at one of the charts in this case. Now what I want is a line chart. So, in order to do that, I go to scatterplot. But to edit the way in which this is looking. we double click so that the format chart area applies and the horizontal value or the axis as these options. to edit the way this looks, go to axis options.

To not have a 0.5 increment as there are assignments 1, 2 and 3 where we the increment to be 1, set minor units to be 0. So, as you can see here this gets updated. As you see in assignments 1, 2, 3 marks are unique and it is represented in the plot. Other way of doing this is right click on this chart, there is an option for formatting chart area where you can perform any changes you want. There are under chart options choice for chart area, chart title, horizontal value, horizontal axis and so on. So, we are click on axis options and make the change here. There are options for other charts as well.