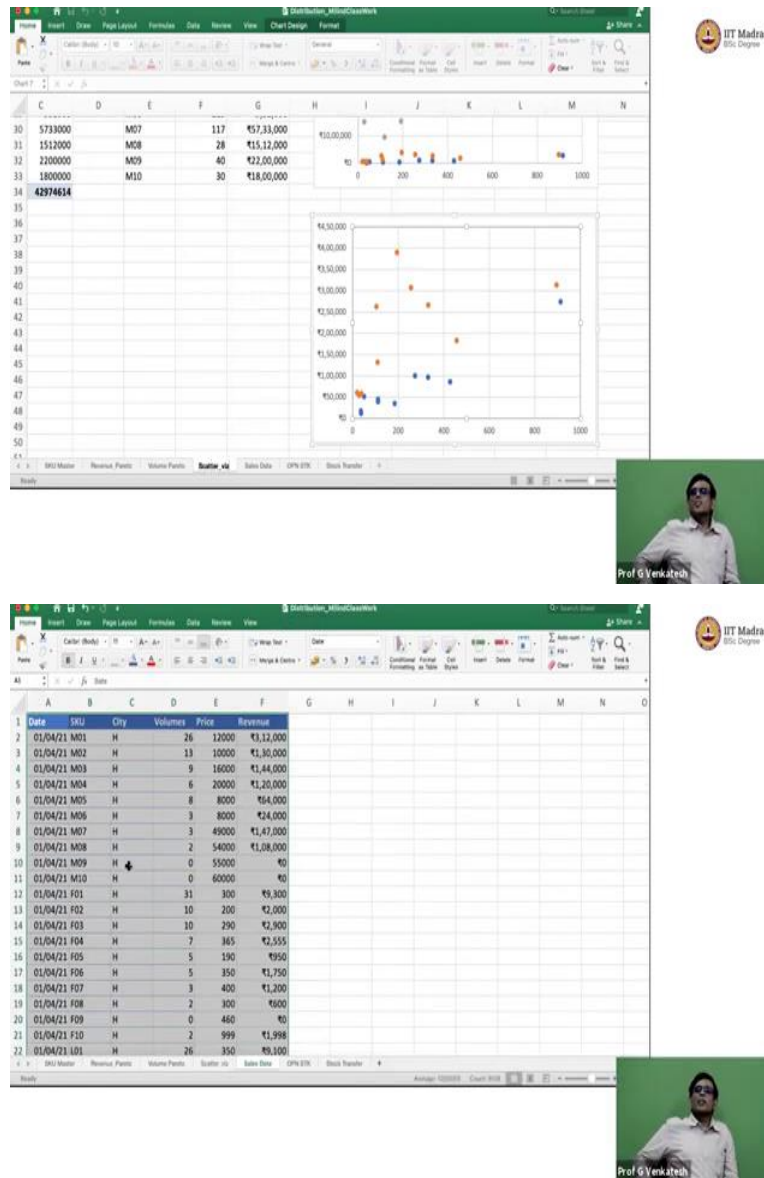


Business Data Management
Professor G Venkatesh
Doctor Milind Gandhe
Department of Humanities and Social Sciences
Indian Institute of Technology Madras
Lecture 8
Revenue trend

(Refer Slide Time: 0:16)



Professor Milind Gandhe: Now, what was the next thing? I think next thing, I think G V they wanted to see, if there was some trend in terms of daily sales, right? I think that was one of the things that the CFO was asking.

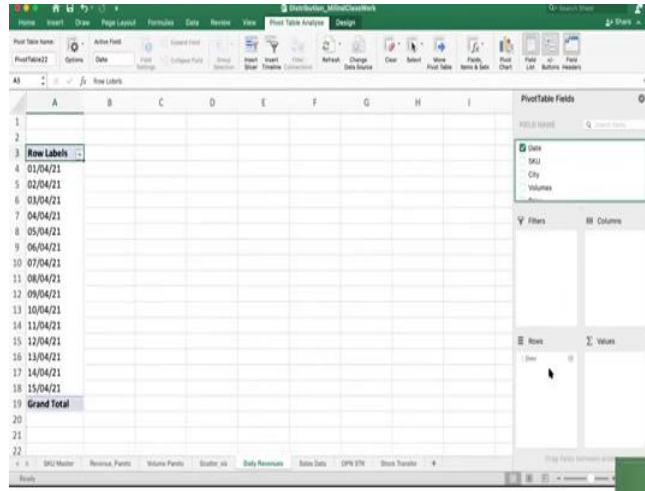
Professor G Venkatesh: So, line chart, simple line chart showing 15 days of revenue. We had revenues, day wise, you have day wise revenue?

Professor Milind Gandhe: We have day wise revenues, or we can compute.

Professor G Venkatesh: You can compute with a, another pivot table you have to make.

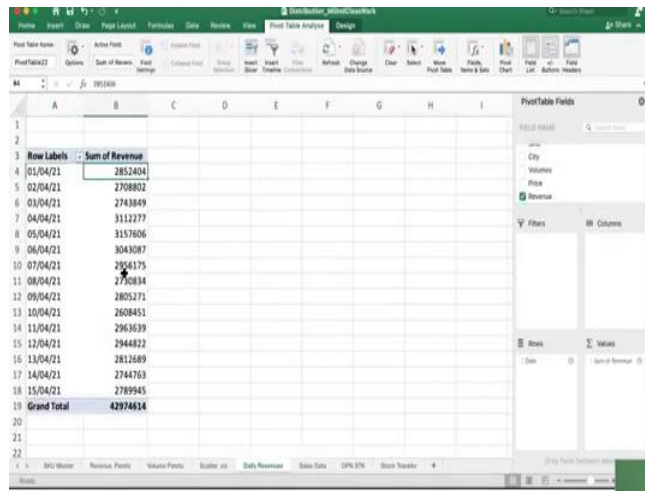
Professor Milind Gandhe: Another pivot table, yes absolutely.

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Row Labels	Sum of Revenue
01/04/21	₹28,52,404.00
02/04/21	₹27,08,802.00
03/04/21	₹27,43,849.00
04/04/21	₹31,12,277.00
05/04/21	₹31,57,606.00
06/04/21	₹30,43,087.00
07/04/21	₹29,56,175.00
08/04/21	₹27,30,834.00
09/04/21	₹28,05,271.00
10/04/21	₹26,08,451.00
11/04/21	₹29,63,639.00
12/04/21	₹29,44,822.00
13/04/21	₹28,12,689.00
14/04/21	₹27,44,763.00
15/04/21	₹27,89,945.00
Grand Total	₹4,29,74,614.00



Row Labels	Sum of Revenue	Daily & Growth
01/04/21	₹28,52,404.00	
02/04/21	₹27,08,802.00	
03/04/21	₹27,43,849.00	
04/04/21	₹31,12,277.00	
05/04/21	₹31,57,606.00	
06/04/21	₹30,43,087.00	
07/04/21	₹29,56,175.00	
08/04/21	₹27,30,834.00	
09/04/21	₹28,05,271.00	
10/04/21	₹26,08,451.00	
11/04/21	₹29,63,639.00	
12/04/21	₹29,44,822.00	
13/04/21	₹28,12,689.00	
14/04/21	₹27,44,763.00	
15/04/21	₹27,89,945.00	
Grand Total	₹4,29,74,614.00	



Row Labels	Sum of Revenue	Daily & Growth
01/04/21	₹28,52,404.00	
02/04/21	₹27,08,802.00	=B5-B4/B4
03/04/21	₹27,43,849.00	
04/04/21	₹31,12,277.00	
05/04/21	₹31,57,606.00	
06/04/21	₹30,43,087.00	
07/04/21	₹29,56,175.00	
08/04/21	₹27,30,834.00	
09/04/21	₹28,05,271.00	
10/04/21	₹26,08,451.00	
11/04/21	₹29,63,639.00	
12/04/21	₹29,44,822.00	
13/04/21	₹28,12,689.00	
14/04/21	₹27,44,763.00	
15/04/21	₹27,89,945.00	
Grand Total	₹4,29,74,614.00	



Professor G Venkatesh: Let us create a pivot table called daily revenues.

Professor Milind Gandhe: So, daily revenues, let me just increase first. Now, we will take what? Dates as rows?

Professor G Venkatesh: Date I think, date as a row.

Professor Milind Gandhe: Date as a row, and we will take revenue as column, as computed values. Let us put it...

Professor G Venkatesh: Chart this as a line graph, it will give you a. I guess it will recommend it as a line and now we will see what it recommends.

Professor Milind Gandhe: Now, before we do that G V, I just want to play around and find out what happens. Is there a. Can we compute growth? Today versus yesterday?

Professor G Venkatesh: Yes, we can do that, percentage growth or daily percentage growth, something like that.

Professor Milind Gandhe: Daily percentage growth. And what would I do? I would say equal to B5 minus B4, correct, divided by B4. Is that correct?

Formula: $(B5 - B4)/B4$

Professor G Venkatesh: Yes, that is correct.

Professor Milind Gandhe: Let us see what happens. So, first day, actually revenue fell, correct, from 28 lakhs to 27 lakhs. Now, if I drag this whole thing, suddenly on 4th it has jumped 13 percent, we could ask him why he jumped 13 percent, you see?

Professor G Venkatesh: But for the 11th similarly, the same corresponding day of the next week again jumped 14 percent, look at that.

Professor Milind Gandhe: Is it no, 4th G V was, what day of the week was it? Is it the same day?

Professor G Venkatesh: No, it is a 4 then 11, $4 + 7 = 11$.

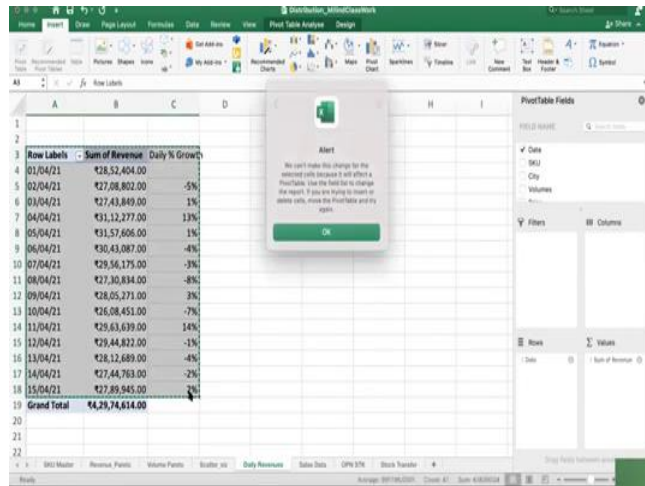
Professor Milind Gandhe: Yeah, maybe, maybe we should also plot it by day.

Professor G Venkatesh: We will plot it by day, we should actually adapt this day wise, that might make sense. Maybe something happening on that day, whatever day it is.

Professor Milind Gandhe: Correct, correct.

Professor G Venkatesh: But right now let us make a line chart for this, let see what its looks.

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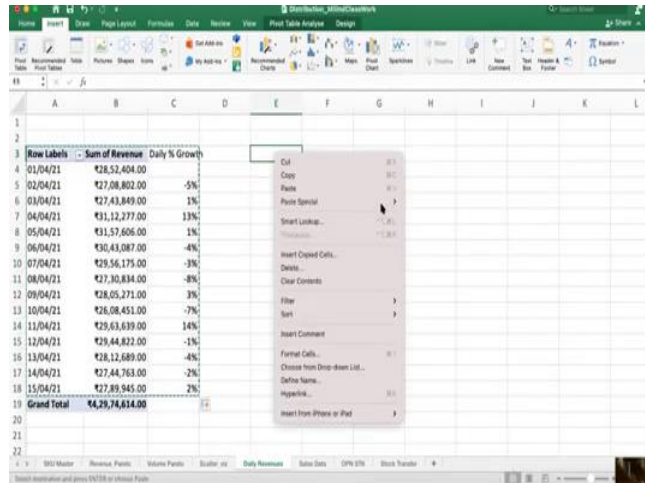


The screenshot shows an Excel spreadsheet with a PivotTable. The PivotTable Fields task pane is on the right, showing 'Date' as the filter and 'Sum of Revenue' as the value. An alert box is displayed in the center of the screen, stating: 'We can't make this change for the selected cells because it will affect a PivotTable. Use the field list to change the report. If you are trying to insert or delete rows, move the PivotTable and try again.' The alert box has an 'OK' button.

Row Labels	Sum of Revenue	Daily % Growth
01/04/21	₹28,52,404.00	
02/04/21	₹27,08,802.00	-5%
03/04/21	₹27,43,849.00	1%
04/04/21	₹31,12,277.00	13%
05/04/21	₹31,57,606.00	1%
06/04/21	₹30,43,087.00	-4%
07/04/21	₹29,56,175.00	-3%
08/04/21	₹27,30,834.00	-8%
09/04/21	₹28,05,271.00	3%
10/04/21	₹26,08,451.00	-7%
11/04/21	₹29,63,639.00	14%
12/04/21	₹29,44,822.00	-1%
13/04/21	₹28,12,689.00	-4%
14/04/21	₹27,44,763.00	-2%
15/04/21	₹27,89,945.00	2%
Grand Total	₹4,29,74,614.00	

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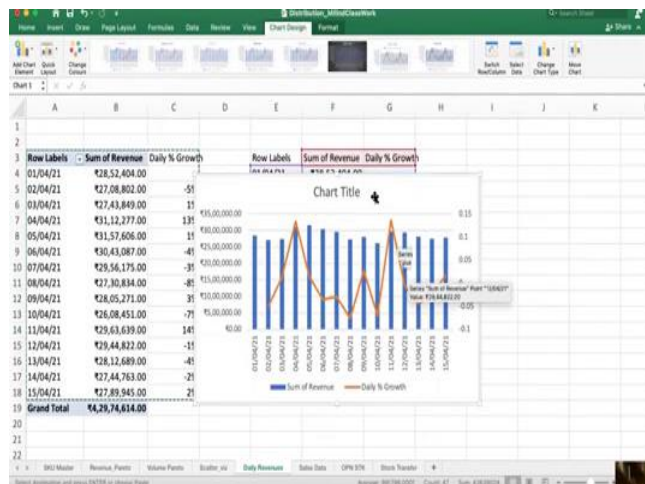


The screenshot shows the same Excel spreadsheet with a PivotTable. A context menu is open over the PivotTable, showing options like Cut, Copy, Paste, Paste Special, Smart Lookup, Insert Copied Cells, Delete, Clear Contents, Filter, Sort, Insert Comment, Format Cells, Choose from Drop-down List, Define Name, Hyperlink, and Insert from iPhone or iPad.

Row Labels	Sum of Revenue	Daily % Growth
01/04/21	₹28,52,404.00	
02/04/21	₹27,08,802.00	-5%
03/04/21	₹27,43,849.00	1%
04/04/21	₹31,12,277.00	13%
05/04/21	₹31,57,606.00	1%
06/04/21	₹30,43,087.00	-4%
07/04/21	₹29,56,175.00	-3%
08/04/21	₹27,30,834.00	-8%
09/04/21	₹28,05,271.00	3%
10/04/21	₹26,08,451.00	-7%
11/04/21	₹29,63,639.00	14%
12/04/21	₹29,44,822.00	-1%
13/04/21	₹28,12,689.00	-4%
14/04/21	₹27,44,763.00	-2%
15/04/21	₹27,89,945.00	2%
Grand Total	₹4,29,74,614.00	

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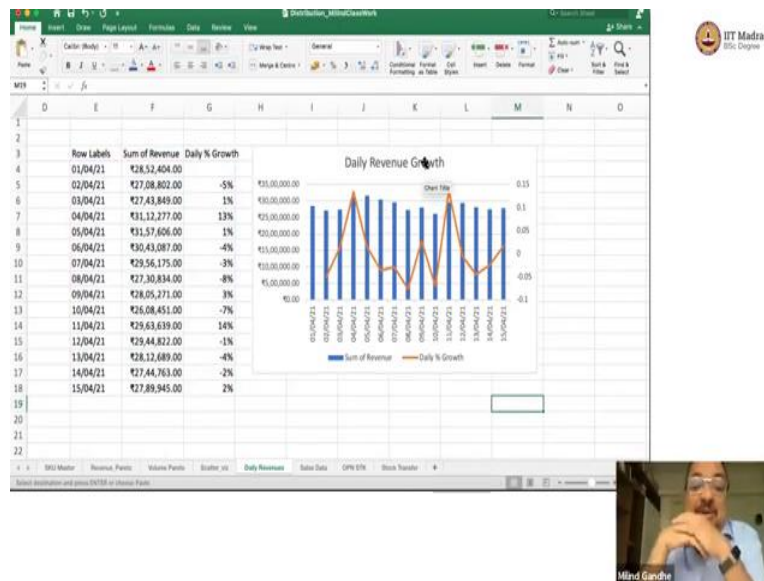


The screenshot shows the same Excel spreadsheet with a PivotTable. A chart is displayed over the PivotTable, showing the 'Sum of Revenue' and 'Daily % Growth' data. The chart is a combination bar and line chart, with the 'Sum of Revenue' represented by blue bars and the 'Daily % Growth' represented by an orange line. The chart has a title 'Chart Title' and a legend at the bottom.

Row Labels	Sum of Revenue	Daily % Growth
01/04/21	₹28,52,404.00	
02/04/21	₹27,08,802.00	-5%
03/04/21	₹27,43,849.00	1%
04/04/21	₹31,12,277.00	13%
05/04/21	₹31,57,606.00	1%
06/04/21	₹30,43,087.00	-4%
07/04/21	₹29,56,175.00	-3%
08/04/21	₹27,30,834.00	-8%
09/04/21	₹28,05,271.00	3%
10/04/21	₹26,08,451.00	-7%
11/04/21	₹29,63,639.00	14%
12/04/21	₹29,44,822.00	-1%
13/04/21	₹28,12,689.00	-4%
14/04/21	₹27,44,763.00	-2%
15/04/21	₹27,89,945.00	2%
Grand Total	₹4,29,74,614.00	

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The screenshot shows an Excel spreadsheet with a pivot table and a chart. The pivot table is located in the range D4:M18, with 'Row Labels' in column D, 'Sum of Revenue' in column E, and 'Daily % Growth' in column F. The chart, titled 'Daily Revenue Growth', is a combination bar and line chart showing the same data. The x-axis represents dates from 01/04/21 to 15/04/21. The y-axis for the bars represents 'Sum of Revenue' (ranging from ₹0.00 to ₹10,00,000.00) and for the line represents 'Daily % Growth' (ranging from -0.1 to 0.15). A small video inset in the bottom right corner shows Professor Milind Gandhe.

Date	SKU	City	Volumes	Price	Revenue	Day
01/04/21	M01	H	26	12000	₹3,12,000	Thursday
01/04/21	M02	H	13	10000	₹1,30,000	
01/04/21	M03	H	9	16000	₹1,44,000	
01/04/21	M04	H	6	20000	₹1,20,000	
01/04/21	M05	H	8	8000	₹64,000	
01/04/21	M06	H	3	8000	₹24,000	
01/04/21	M07	H	3	49000	₹1,47,000	
01/04/21	M08	H	2	54000	₹1,08,000	
01/04/21	M09	H	0	55000	₹0	
01/04/21	M10	H	0	60000	₹0	
01/04/21	F01	H	31	300	₹9,300	
01/04/21	F02	H	10	200	₹2,000	
01/04/21	F03	H	10	290	₹2,900	
01/04/21	F04	H	7	365	₹2,555	
01/04/21	F05	H	5	190	₹950	
01/04/21	F06	H	5	350	₹1,750	
01/04/21	F07	H	3	400	₹1,200	
01/04/21	F08	H	2	300	₹600	
01/04/21	F09	H	0	460	₹0	
01/04/21	F10	H	2	999	₹1,998	
01/04/21	L01	H	26	350	₹9,100	

Professor Milind Gandhe: So, let us see what, what they are recommending, or it may not recommend something. So, let us just pick this whole thing. It may not do that, because it does not like to do charts inside and outside pivot table, I think, that is a problem, this is the problem. So, let me do the same thing that we did, we will have to cut and paste.

Professor G Venkatesh: Copy that values and with keeping the format.

Professor Milind Gandhe: See and now we will do paste special, values and source format, yes. Now, it did it, nicely it did it. Let us see what a graph got recommended, this is a good one, G V, this is a good one, how does this look?

Professor G Venkatesh: Very nice, nice chart, this is done, we do not need to do anything, yes give a title to this and finished. Of course, the bar chart, bar chart looks good. I think it is alright.

Professor Milind Gandhe: One thing is, would it make sense for me to show the values on each bar, or we do not want it?

Professor G Venkatesh: It is there, I think, it is there on the left axis.

Professor Milind Gandhe: That is, good enough, daily revenue growth.

Professor G Venkatesh: There is no growth. I cannot see any growth. It looks flat, at least the daily revenue number looks more, or less the same.

Professor Milind Gandhe: It is going a little bit up and down.

Professor G Venkatesh: The thing is that, on that day, 4th and 7th, 4th and 8th corresponding day 11 suddenly it jumped, we can see.

Professor Milind Gandhe: So, you are saying that...

Professor G Venkatesh: Actually 4th is higher? It is not actually 4th is higher, because we look 5th is higher than 4th also. But it looks higher actually. So the problem is that, issue is not that 4th is higher, the thing is the 3rd is lower. 3rd and 10th are both lower, 3rd and 10th both lower, that is why it showed you...

Professor Milind Gandhe: Actually, I would be very interested G V in just looking at what is the issue by days?

Professor G Venkatesh: Can we do it plot by days? Is it possible do it I mean, how do you do it? You got table by day, you have to do day of that particular number date.

Professor Milind Gandhe: First thing G V, we will have to figure out what was the day on 1st of April? Let us add a column here called day. Now one thing of course, we can do is we can go to the calendar and we can look up and say, let us figure out what the 1st of April was.

Professor G Venkatesh: Is there a formula?

Professor Milind Gandhe: There is a formula. So, the formula is text, we will take value, you want to format it as day, this is how do we know this? I think the only way to know this G V, is the students have to go and look up the help on the function, and help the function tells you what about the format. Now, it changed [to] Thursday.

Professor G Venkatesh: What is that 4 d's? d, d, d, d, what is d, d, d, d?

Professor G Venkatesh: So that is the format. So, it will say print this value as a day, four d's means print it as a day, I could have also said as an example 'mmm', and it should have printed it as a month.

Professor G Venkatesh: I see, but you have three m's and four d's.

Professor Milind Gandhe: So, if I had just say two d's, then it would have just printed it as a date.

Professor G Venkatesh: I see, two d's is date and four d's is day, I get it. I get it.

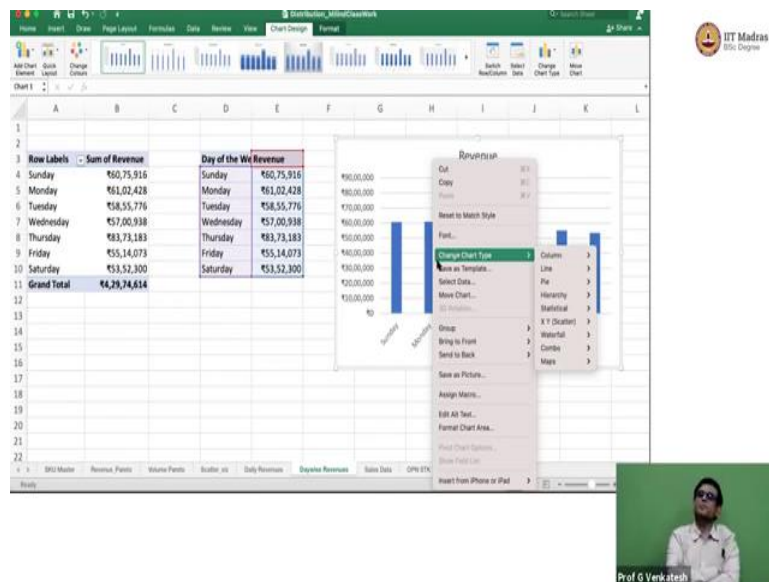
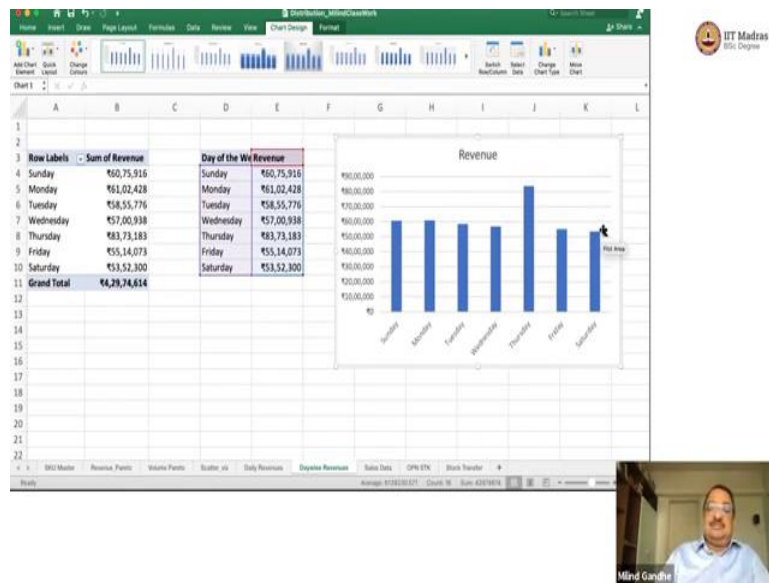
Professor Milind Gandhe: So, there is no, there is no point in remembering all these formats, the best thing to do is to look it up every time you need to, it is the best thing.

(Refer Slide Time: 8:36)

The first screenshot shows an Excel spreadsheet with a table of data. The table has columns for Date, Day, Volume, Price, and Revenue. The data is organized by date, with each row representing a specific day and its corresponding volume, price, and revenue. The second screenshot shows a PivotTable summary of the data. The PivotTable is set up with 'Day' as the Row Labels and 'Sum of Revenue' as the Values. The summary shows the total revenue for each day of the week, with a Grand Total of ₹6,29,74,634. The PivotTable Fields task pane on the right shows the fields used in the summary: 'Day' for Row Labels and 'Revenue' for the Sum of Revenue.

Date	Day	Volume	Price	Revenue
11/04/21	MO2	H	16	10000
11/04/21	MO3	H	11	16000
11/04/21	MO4	H	9	20000
11/04/21	MO5	H	5	8000
11/04/21	MO6	H	5	8000
11/04/21	MO7	H	5	49000
11/04/21	MO8	H	0	54000
11/04/21	MO9	H	1	55000
11/04/21	MO10	H	0	60000
11/04/21	FO1	H	27	300
11/04/21	FO2	H	15	200
11/04/21	FO3	H	13	290
11/04/21	FO4	H	10	365
11/04/21	FO5	H	5	190
11/04/21	FO6	H	2	350
11/04/21	FO7	H	5	400
11/04/21	FO8	H	0	300
11/04/21	FO9	H	1	460
11/04/21	FO10	H	0	999
11/04/21	LO1	H	31	350
11/04/21	LO2	H	11	400

Day	Sum of Revenue
Sunday	₹60,75,916
Monday	₹61,02,428
Tuesday	₹58,55,776
Wednesday	₹57,00,938
Thursday	₹83,73,183
Friday	₹55,14,073
Saturday	₹53,52,300
Grand Total	₹6,29,74,634



So, now let me just populate this full sheet.

Professor G Venkatesh: Just go down, it is done correctly?

Professor Milind Gandhe: Yes, it has, so 2nd of April is Friday, if you want even further, you can go random day 11th of April was Saturday.

Professor G Venkatesh: It jumped, that is where it jumped, Saturday it seem to be low, and Sunday it seemed to be high, who understands this...

Professor Milind Gandhe: Whole table, insert.

Professor G Venkatesh: Omkar will tell us why it was low on Saturday and high on Sunday.

Professor Milind Gandhe: Yes, yes. So, we will call this what, revenues, day revenues?

Professor G Venkatesh: Day wise revenues.

Professor Milind Gandhe: Day wise revenues, I need to increase. And now we will take day as rows and we will take revenue as computed values.

Professor G Venkatesh: This pivot table is easy thing really, really. It saves so much time...

Professor Milind Gandhe: Really, really... G V, I actually have a question we should go and ask Omkar is why is Thursday so high?

Professor G Venkatesh: Yeah, it is very, very high.

Professor Milind Gandhe: Everything else is like 57 to 60 lakhs, suddenly Thursday is 83 lakhs.

Professor G Venkatesh: Who can notice? We will ask him, let us ask him. Have you plotted this thing?

Professor Milind Gandhe: I can plot. I will plot it, same thing I will have to do, I will have to cut and paste it. This is one thing every time you have to plot it I think it likes does not seem to take source formatting, same thing. So, this let us day of the. See, here, I think just a simple bar chart is enough. Suddenly, you can see it visually you can see that Thursday bar just standing up very tall.

Professor G Venkatesh: I am curious again. Okay, we will ask him, let us find out. I have a thought Saturday, Sunday is high because people have time...

Professor Milind Gandhe: Yeah, it maybe Friday, you know, maybe because Friday people.

Professor G Venkatesh: We will find out. We will ask him. Yeah, yeah.

Professor Milind Gandhe: So, G V tell me something should we show this as a bar chart or as a line graph?

Professor G Venkatesh: No, I mean, some people like line graphs, some people like bar graphs, depends I think. So, this case, for example, the bars are all of equal size, so line might be a nicer thing to see.

Professor Milind Gandhe: Yeah, so there is this option to change at type. So, maybe the students can play around with this and see if instead of column they want...

Professor G Venkatesh: Convert into line or see what it looks like. Yeah, yeah, I think, they can do that. Yeah. Okay.