Professor G. Venkatesh: We have got all the data from Siva, Milind for this exercise.

Professor Milind Gandhe: Yes.

Professor G. Venkatesh: Now, this is a very different case from the earlier one we saw FabMart case, because here this is more about manufacturing. But there are many common elements and that is what I can, we can see, because if you look at the questions, key questions that were asked, some of these questions are very similar to the questions that are asked in earlier case.

Professor Milind Gandhe: That is true GV.

Professor G. Venkatesh: Like (multiple speakers) trends and so on are very similar to the earlier case.

(Refer Slide Time: 00:48)

Professor Milind Gandhe: And these were the questions that Archana was asking. One of the first questions that she was looking at is what is the revenue pattern? And I think we looked at some of that in FabMart case as well. Of course, there we looked at what were the daily revenue trends, we looked at which SKU gave us the most revenue, we looked at which day of the week

gave us the most revenue. I think here because the time horizon is a little broader, we may be able to see some better pattern. I think in that case we did not see any patterns at all.

Professor G. Venkatesh: We will see trends, probably we will see trends here. And especially because we have this interesting BS4, BS6 thing, BS4 versus BS6 and naturally it supposed to taper up, BS4 is supposed to decline, BS6 is supposed to increase and this combination. BS4, BS6 things which can be used for both BS4 and BS6 hopefully we will show no decrease or increasing. They will show some increase, generally increasing trend. That is one we should see. The other is that we should basically be able to see some impact of the lockdown. It is the pandemic year. Something we should be able to see definite.

Professor Milind Gandhe: Definitely.

Professor G. Venkatesh: Those kind of issues for 50 days we could see anything there. That thing could be seen, here we should see. And the other thing is this is a two-year period. Much more interesting to correlate corresponding month to corresponding month, April of one year to April of the next year, May of one year to May of the next year like that we should be able to do some correspondence.

Professor Milind Gandhe: Yes.

Professor G. Venkatesh: Because there was 15 days, we could see all that. We will see whether we can use the same methods. Some of the insights we may get maybe looking very different, in this case.
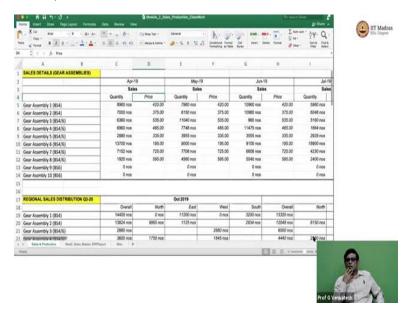
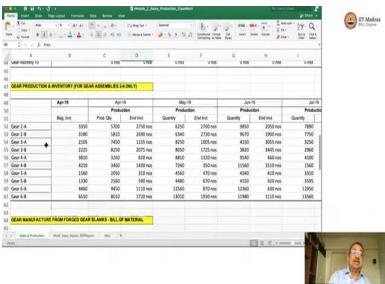Professor Milind Gandhe: I think there is still some similarity in questions. What is the star seller gear assembly and poor seller gear assembly? I think some of these questions we asked in FabMart also.

Professor G. Venkatesh: Okay. Let us see the data.

(Refer Slide Time: 03:25)

SALES DETAILS (GEAR ASSEMBLIES)

	Apr-19		May-19		Jun-19		Jul-19
	Sales		Sales		Sales		Sales
	Quantity	Price	Quantity	Price	Quantity	Price	Quantity
Gear Assembly 1 (BS4)	8960 nos	420.00	7980 nos	420.00	10960 nos	420.00	5960 nos
Gear Assembly 2 (BS4)	7000 nos	375.00	6150 nos	375.00	10980 nos	375.00	6048 nos
Gear Assembly 3 (BS4/6)	6360 nos	535.00	11040 nos	535.00	960 nos	535.00	5160 nos
Gear Assembly 4 (BS4/6)	6960 nos	485.00	7740 nos	485.00	11475 nos	485.00	1664 nos
Gear Assembly 5 (BS4/6)	2880 nos	335.00	3955 nos	335.00	3555 nos	335.00	2929 nos
Gear Assembly 6 (BS4/6)	13700 nos	195.00	9000 nos	195.00	9100 nos	195.00	18900 nos
Gear Assembly 7 (BS4/6)	7152 nos	725.00	7708 nos	725.00	6808 nos	725.00	4230 nos
Gear Assembly 8 (BS4/6)	1920 nos	595.00	4560 nos	595.00	5040 nos	595.00	2400 nos
Gear Assembly 9 (BS6)	0 nos		0 nos		0 nos		0 nos
Gear Assembly 10 (BS6)	0 nos		0 nos		0 nos		0 nos

REGIONAL SALES DISTRIBUTION Q3-20

	Overall	North	Oct 2019 East	West	South	Overall	North
Gear Assembly 1 (BS4)	14400 nos	0 nos	11200 nos	0 nos	3200 nos	13320 nos	
Gear Assembly 2 (BS4)	13824 nos	9865 nos	1125 nos		2834 nos	12048 nos	8150 nos
Gear Assembly 3 (BS4/6)	2880 nos			2880 nos		6000 nos	
Gear Assembly 4 (BS4/6)	3600 nos	1755 nos		1845 nos		4440 nos	2?00 nos

GEAR PRODUCTION & INVENTORY (FOR GEAR ASSEMBLIES 2-6 ONLY)

	Apr-19	Apr-19		May-19		Jun-19		Jul-19
		Production		Production		Production		Production
	Beg. Invt	Prod. Qty	End Invt	Quantity	End Invt	Quantity	End Invt	Quantity
Gear 2-A	3350	5700	2750 nos	6250	2700 nos	9850	2050 nos	7890
Gear 2-B	3180	5810	2690 nos	6340	2730 nos	9670	1900 nos	7750
Gear 3-A	2105	7450	1155 nos	8250	1005 nos	4150	3055 nos	3250
Gear 3-B	2225	8250	2075 nos	8050	1725 nos	3820	3445 nos	2960
Gear 4-A	3810	3260	830 nos	8810	1320 nos	9540	460 nos	4100
Gear 4-B	4210	3460	1430 nos	7240	350 nos	11560	1510 nos	1560
Gear 5-A	1560	2050	310 nos	4560	470 nos	4340	410 nos	3310
Gear 5-B	1330	2560	590 nos	4480	670 nos	4150	420 nos	3595
Gear 6-A	4460	9450	1110 nos	12560	870 nos	12360	430 nos	12950
Gear 6-B	6510	8010	1720 nos	13010	1930 nos	11980	1110 nos	13560

GEAR MANUFACTURE FROM FORGED GEAR BLANKS - BILL OF MATERIAL

Screenshot 1

	A	B	C	D	E	F	G	H	I
59	Gear 5-B	1330	2560	590 nos	4480	670 nos	4150	420 nos	3595
60	Gear 6-A	4460	9450	1110 nos	12560	870 nos	12360	430 nos	12950
61	Gear 6-B	6510	8010	1720 nos	13010	1930 nos	11980	1110 nos	13560
62									
63									
64	GEAR MANUFACTURE FROM FORGED GEAR BLANKS - BILL OF MATERIAL								
65									
66	GEAR	MATCHING BLANK PART NUMBER							
67	Gear 2-A	Blank-001							
68	Gear 2-B	Blank-002							
69	Gear 3-A	Blank-011							
70	Gear 3-B	Blank-021							
71	Gear 4-A	Blank-011							
72	Gear 4-B	Blank-022							
73	Gear 5-A	Blank-012							
74	Gear 5-B	Blank-021							
75	Gear 6-A	Blank-012							
76	Gear 6-B	Blank-022							

Screenshot 2

	Gear Assembly	GA Category	Month	Quantity	Price	Production
1	Gear Assembly	GA Category	Month	Quantity	Price	Production
2	Gear Assembly 1 (BS4)	BS4	Apr-19	8960 nos	420.00	7000
3	Gear Assembly 2 (BS4)	BS4	Apr-19	7000 nos	375.00	6000
4	Gear Assembly 3 (BS4/6)	BS4/BS6	Apr-19	6360 nos	535.00	8000
5	Gear Assembly 4 (BS4/6)	BS4/BS6	Apr-19	6960 nos	485.00	6000
6	Gear Assembly 5 (BS4/6)	BS4/BS6	Apr-19	2880 nos	335.00	3000
7	Gear Assembly 6 (BS4/6)	BS4/BS6	Apr-19	13700 nos	195.00	12000
8	Gear Assembly 7 (BS4/6)	BS4/BS6	Apr-19	7152 nos	725.00	7000
9	Gear Assembly 8 (BS4/6)	BS4/BS6	Apr-19	1920 nos	595.00	3000
10	Gear Assembly 9 (BS6)	BS6	Apr-19	0 nos		0
11	Gear Assembly 10 (BS6)	BS6	Apr-19	0 nos		0
12	Gear Assembly 1 (BS4)	BS4	May-19	7960 nos	420.00	9000
13	Gear Assembly 2 (BS4)	BS4	May-19	6150 nos	375.00	6000
14	Gear Assembly 3 (BS4/6)	BS4/BS6	May-19	11040 nos	535.00	8000
15	Gear Assembly 4 (BS4/6)	BS4/BS6	May-19	7748 nos	485.00	8000
16	Gear Assembly 5 (BS4/6)	BS4/BS6	May-19	3955 nos	335.00	4000
17	Gear Assembly 6 (BS4/6)	BS4/BS6	May-19	9000 nos	195.00	12000
18	Gear Assembly 7 (BS4/6)	BS4/BS6	May-19	7708 nos	725.00	7000
19	Gear Assembly 8 (BS4/6)	BS4/BS6	May-19	4560 nos	595.00	4000
20	Gear Assembly 9 (BS6)	BS6	May-19	0 nos		0
21	Gear Assembly 10 (BS6)	BS6	May-19	0 nos		0
22	Gear Assembly 1 (BS4)	BS4	Jun-19	10960 nos	420.00	9000

	Gear Assembly	GA Category	Month	Sales	Price	Production	Month
1							
2	Gear Assembly 1 (BS4)	BS4	Apr-19	8960	420.00	7+0	Apr
3	Gear Assembly 2 (BS4)	BS4	Apr-19	7000	375.00	6000	Apr
4	Gear Assembly 3 (BS4/6)	BS4/BS6	Apr-19	6360	535.00	8000	Apr
5	Gear Assembly 4 (BS4/6)	BS4/BS6	Apr-19	6960	485.00	6000	Apr
6	Gear Assembly 5 (BS4/6)	BS4/BS6	Apr-19	2880	335.00	3000	Apr
7	Gear Assembly 6 (BS4/6)	BS4/BS6	Apr-19	13700	195.00	12000	Apr
8	Gear Assembly 7 (BS4/6)	BS4/BS6	Apr-19	7152	725.00	7000	Apr
9	Gear Assembly 8 (BS4/6)	BS4/BS6	Apr-19	1920	595.00	3000	Apr
10	Gear Assembly 9 (BS6)	BS6	Apr-19	0		0	Apr
11	Gear Assmbly 10 (BS6)	BS6	Apr-19	0		0	Apr
12	Gear Assembly 1 (BS4)	BS4	May-19	7960	420.00	9000	May
13	Gear Assembly 2 (BS4)	BS4	May-19	6150	375.00	6000	May
14	Gear Assembly 3 (BS4/6)	BS4/BS6	May-19	11040	535.00	8000	May
15	Gear Assembly 4 (BS4/6)	BS4/BS6	May-19	7748	485.00	8000	May
16	Gear Assembly 5 (BS4/6)	BS4/BS6	May-19	3955	335.00	4000	May
17	Gear Assembly 6 (BS4/6)	BS4/BS6	May-19	9000	195.00	12000	May
18	Gear Assembly 7 (BS4/6)	BS4/BS6	May-19	7708	725.00	7000	May
19	Gear Assembly 8 (BS4/6)	BS4/BS6	May-19	4560	595.00	4000	May
20	Gear Assembly 9 (BS6)	BS6	May-19	0		0	May
21	Gear Assmbly 10 (BS6)	BS6	May-19	0		0	May
22	Gear Assembly 1 (BS4)	BS4	Jun-19	10960	420.00	9000	Jun

Formula bar: `=vlookup(C2,Misc!$E$2:$F$25,2,0)`

	A	B	C	D	E	F	G	H	I	J	K	L
5		Jul	Q2			Jul-19	FY19-20					
6		Aug	Q2			Aug-19	FY19-20				=vlookup(C2,Misc!$E$2:$F$25,2,0)	
7		Sep	Q2			Sep-19	FY19-20					
8		Oct	Q3			Oct-19	FY19-20					
9		Nov	Q3			Nov-19	FY19-20					
10		Dec	Q3			Dec-19	FY19-20					
11		Jan	Q4			Jan-20	FY19-20					
12		Feb	Q4			Feb-20	FY19-20					
13		Mar	Q4			Mar-20	FY19-20					
14						Apr-20	FY20-21					
15						May-20	FY20-21					
16						Jun-20	FY20-21					
17						Jul-20	FY20-21					
18						Aug-20	FY20-21					
19						Sep-20	FY20-21					
20						Oct-20	FY20-21					
21						Nov-20	FY20-21					
22						Dec-20	FY20-21					
23						Jan-21	FY20-21					
24						Feb-21	FY20-21					
25						Mar-21	FY20-21					
26												

First spreadsheet view:

	Gear Assembly	GA Category	Month	Sales	Price	Production	Month	Quarter	Fiscal Year	Revenue
1										
2	Gear Assembly 1 (BS4)	BS4	Apr-19	8960	420.00	7000	Apr	Q1	FY19-2	₹37,63,200
3	Gear Assembly 2 (BS4)	BS4	Apr-19	7000	375.00	6000	Apr	Q1	FY19-20	₹26,25,000
4	Gear Assembly 3 (BS4/6)	BS4/BS6	Apr-19	6360	535.00	8000	Apr	Q1	FY19-20	₹34,02,600
5	Gear Assembly 4 (BS4/6)	BS4/BS6	Apr-19	6960	485.00	6000	Apr	Q1	FY19-20	₹33,75,600
6	Gear Assembly 5 (BS4/6)	BS4/BS6	Apr-19	2880	335.00	3000	Apr	Q1	FY19-20	₹9,64,800
7	Gear Assembly 6 (BS4/6)	BS4/BS6	Apr-19	13700	195.00	12000	Apr	Q1	FY19-20	₹26,71,500
8	Gear Assembly 7 (BS4/6)	BS4/BS6	Apr-19	7152	725.00	7000	Apr	Q1	FY19-20	₹51,85,200
9	Gear Assembly 8 (BS4/6)	BS4/BS6	Apr-19	1920	595.00	3000	Apr	Q1	FY19-20	₹11,42,400
10	Gear Assembly 9 (BS6)	BS6	Apr-19	0		0	Apr	Q1	FY19-20	₹0
11	Gear Assmbly 10 (BS6)	BS6	Apr-19	0		0	Apr	Q1	FY19-20	₹0
12	Gear Assembly 1 (BS4)	BS4	May-19	7960	420.00	9000	May	Q1	FY19-20	₹33,43,200
13	Gear Assembly 2 (BS4)	BS4	May-19	6150	375.00	6000	May	Q1	FY19-20	₹23,06,250
14	Gear Assembly 3 (BS4/6)	BS4/BS6	May-19	11040	535.00	8000	May	Q1	FY19-20	₹59,06,400
15	Gear Assembly 4 (BS4/6)	BS4/BS6	May-19	7748	485.00	8000	May	Q1	FY19-20	₹37,57,780
16	Gear Assembly 5 (BS4/6)	BS4/BS6	May-19	3955	335.00	4000	May	Q1	FY19-20	₹13,24,925
17	Gear Assembly 6 (BS4/6)	BS4/BS6	May-19	9000	195.00	12000	May	Q1	FY19-20	₹17,55,000
18	Gear Assembly 7 (BS4/6)	BS4/BS6	May-19	7708	725.00	7000	May	Q1	FY19-20	₹55,88,300
19	Gear Assembly 8 (BS4/6)	BS4/BS6	May-19	4560	595.00	4000	May	Q1	FY19-20	₹27,13,200
20	Gear Assembly 9 (BS6)	BS6	May-19	0		0	May	Q1	FY19-20	₹0
21	Gear Assmbly 10 (BS6)	BS6	May-19	0		0	May	Q1	FY19-20	₹0
22	Gear Assembly 1 (BS4)	BS4	Jun-19	10960	420.00	9000	Jun	Q1	FY19-20	₹46,03,200

Second spreadsheet view (pivot tables):

Sum of Revenue — Column Labels

Row Labels	FY19-20	FY20-21	Grand Total
Jan	19072415	19991900	39064315
Feb	19281985	24597550	43879535
Mar	10387780	25018810	35406590
Apr	23130300	0	23130300
May	26695055	1684805	28379860
Jun	25553250	9163905	34717155
Jul	17500305	13313890	30814195
Aug	19148750	9048915	28197665
Sep	17708325	8668910	26377235
Oct	22737890	17540645	40278535
Nov	24846405	18143250	42989655
Dec	18177410	19813475	37990885
Grand Total	244239870	166986055	411225925

Row Labels	FY19-20	FY20-21	Grand Total
Apr	₹2,31,30,300	₹0	₹2,31,30,300
May	₹2,66,95,055	₹16,84,805	₹2,83,79,860
Jun	₹2,55,53,250	₹91,63,905	₹3,47,17,155
Jul	₹1,75,00,305	₹1,33,13,890	₹3,08,14,195
Aug	₹1,91,48,750	₹90,48,915	₹2,81,97,665
Sep	₹1,77,08,325	₹86,68,910	₹2,63,77,235
Oct	₹2,27,37,890	₹1,75,40,645	₹4,02,78,535
Nov	₹2,48,46,405	₹1,81,43,250	₹4,29,89,655
Dec	₹1,81,77,410	₹1,98,13,475	₹3,79,90,885
Jan	₹1,90,72,415	₹1,99,91,900	₹3,90,64,315
Feb	₹1,92,81,985	₹2,45,97,550	₹4,38,79,535
Mar	₹1,03,87,780	₹2,50,18,810	₹3,54,06,590
Grand Total	₹24,42,39,870	₹16,69,86,055	₹41,12,25,925

Professor Milind Gandhe: And right now I think we only will focus on the first table. I think Siva has given us a lot of tables. So, he has given us sales data, he has given us regional sales data, he has given us production details, he has given us, man GV, this is very, lots of data man.

Professor G. Venkatesh: Let us, we will just for the first, I think let us just look at the sales data to start with. We will come back to these later on. As he said, we are going to work back from sales. We are going to start with sales, look at inventory, look at production, [not audible] and look at material management and all that. It is going to go in some sequence. So, I will have to start with sales, I think, sales. But this data is, is it good enough for us to do our analysis, because this could be tougher.

Professor G. Venkatesh: This is not a good representation, I think.

Professor Milind Gandhe: Yeah, maybe we should ask, you know what strikes me GV this almost looks like the output of a pivot table, is not it?

Professor G. Venkatesh: Yeah, it looks. Can we ask him to produce the data in some other format?

Professor Milind Gandhe: Yeah, we should do that.

Professor G. Venkatesh: Because clearly, what format do we need? What would we like?

Professor Milind Gandhe: What we need is a table which says given gear assembly, given a month, what was the quantity sold at what price.

Professor G. Venkatesh: We need basically to see that gear assembly the type. We want to see is there a BS4 or BS6. We want BS4 in a separate column. We want gear assembly number, we want whether it is BS4 or BS6 or combination BS4 and BS6 together. Then which month? And for that month how many, how much quantity was sold at what price? That is what we want.

Professor Milind Gandhe: Yes.

Professor G. Venkatesh: I mean, producing it from this output of the pivot table is not going to be easy to use. We should just ask him to get a little bit of data from ERP in that format.

Professor Milind Gandhe: Let me go ahead and do that. GV I have got the data from the ERP folks. Let us look at it. Here is what they have given me.

Professor G. Venkatesh: Got the month, quantity, price, fantastic.

Professor Milind Gandhe: And he is also giving the product in the same thing.

Professor G. Venkatesh: What is production?

Professor Milind Gandhe: How much of gear assembly 1 was produced in April '19. How many units were produced?

Professor G. Venkatesh: Quantity is numbered sold. So, 8960 sold.

Professor Milind Gandhe: Maybe I will rename it. We will call it sales.

Professor G. Venkatesh: 8960 was sold and 7000 were produced. Okay, all right. Okay.

Professor Milind Gandhe: Correct. And you can see, so couple of points I want to make here GV. First, this, if you look at column D, what is slightly funny look. It is got some numbers written.

Professor Milind Gandhe: It is just a format. Let us format sales and let us see what it is saying. It is some custom format. You see this.

Professor G. Venkatesh: Yeah, numbers, yeah. Take out that numbers. We do not want it.

Professor Milind Gandhe: I can just make it plane numbers.

Professor G. Venkatesh: Let us do any analysis.

Professor Milind Gandhe: Let me do this for the whole column then. We will just write everything as numbers. Now, what do we need? We need to figure out which financial year this is. April '19 is what financial year.

Professor G. Venkatesh: Why do we need that?

Professor Milind Gandhe: Because all analysis we must do by financial year not by calendar year.

Professor G. Venkatesh: You want to sum up the revenues for one year like that.

Professor Milind Gandhe: For one financial year.

Professor G. Venkatesh: Now, we want to compare April '19 with April '20 something like that you want to do.

Professor Milind Gandhe: So, April '19 to April '20 we can do without too much complication. But the problem is that we need to do two things. First is we need to do some processing to compute revenue for quarter one as an example.

Professor G. Venkatesh: Quarter-wise.

Professor Milind Gandhe: There is no easy formula. First thing we need to do figure out what is the month forget the year. I think the idea GV is first let us just do some data massaging so that some data that we are going to need again and again, some columns we need to just add.

Professor Milind Gandhe: We are going to need a month labor, because see there, if you remember when we did the FabMart case, we had dates, and then we needed to compute the day, because we wanted to look at day-wise trend. Now, since Archana has asked us monthly trends, we will want the month label. Just like we had computed day there, we will compute month here.

Professor G. Venkatesh: Right.

Professor Milind Gandhe: Now, we want to know which quarter this is.

Professor G. Venkatesh: How do I do that?

Professor Milind Gandhe: Unfortunately, no easy way of doing this in this spreadsheet. But we always have VLOOKUP as a tool at our disposal. So, let us go to, let us create a temporary sheet called misc or whatever you want to call it, temp, or something. And we will create a table which will say month and quarter.

Professor G. Venkatesh: Okay.

Professor Milind Gandhe: Right, only 12 we must do and now here we will do quarter is VLOOKUP, this month, the month label, and we look it up on again this table. Again, I need to do the dollar, dollar.

Professor G. Venkatesh: Second column.

Professor Milind Gandhe: The next thing GV we need to do is to complete a fiscal year. And again, most spreadsheets are designed for a calendar year. They are not unfortunately designed for a fiscal year. The Indian fiscal year, I am not sure if our students know, but the Indian fiscal year is April 1st to March 31st. In a calendar year, you will have two fiscal years. Let us again, similarly, create a lookup table. And here we will do April '19, May '19 and I can just drag this and get this up to December '20 we need it till. How much data have they given us? They have given us from April '19 till.

Professor Milind Gandhe: March '21, so they need that. Till March '21. And now, April '19 is fiscal year '19, '20, because it is the fiscal year that begins on April 1st, '19 2019 and ends on 31st March 2020. It is called fiscal year '19-'20.

Professor Milind Gandhe: And this is of course now going to be the next fiscal year. That is going to be '20, '21. And again, here we will just do a simple vlookup. So, I think GV my thinking is that there are two sort of basic skills that people need to know about spreadsheets. The one is vlookup and the other is…

Professor G. Venkatesh: Pivot table and graphs. How to plot graphs.

Professor Milind Gandhe: And graphs, yes, probably.

Professor G. Venkatesh: To basically do vlookup and then do, how to do a pivot table and how to copy that pivot table into something else with values and values with formatting and then make a graph. This is all it is most of the times plus this kind of massaging, some additional tables, and some data cleaning and all. Let's go on and see whether the correct thing has come for.

Professor Milind Gandhe: The final thing GV I thought we should do, because if you go back to the FabMart case also you will realize all the time people kept asking us about revenue. But if you look in the data, we do not have revenue. We have only sales enterprise.

Professor G. Venkatesh: Multiply the two related.

Professor Milind Gandhe: Yes, I do it, format it first. And then see 00, 00, and then double click.

Professor Milind Gandhe: I have done some basic massaging of data.

Professor G. Venkatesh: Yeah. Now, we can graph it. Now, let us graph it.

Professor Milind Gandhe: Before that I think we need to do some analysis. I think

Professor G. Venkatesh: Okay.

Professor Milind Gandhe: If we go back to ask the question what Archana was asking us, she was asking us what the trend in terms of monthly revenue is and then she wanted to compare the same month April '19 against April '20 and so on.

Professor G. Venkatesh: We must compute, we have to total all the Aprils, all the Mays and all that year-wise something like that.

Professor Milind Gandhe: Yes.

Professor G. Venkatesh: Do it BS4 something like that we have to do.

Professor Milind Gandhe: Let us insert the pivot table.

Professor G. Venkatesh: Pivot table where we add up all the Aprils, Mays, Junes, and all, month-wise you will get and also do it for BS4, do it for BS6, BS4, BS6 and all, total.

Professor Milind Gandhe: Yes. Hold on. First let me, so I have inserted a pivot table. So, what we will do is first thing let us do, this month, month 2 which was just that April, May, June thing that we had computed, and we will get fiscal year as columns.

Professor G. Venkatesh: I noticed, you did it from, you put it as Jan to December for some reason.

Professor Milind Gandhe: Yeah. So, we will need a little bit of massaging by hand.

Professor G. Venkatesh: How did you get, you put as column, for first time using the column.

Professor Milind Gandhe: Yes, first time we are using the column, yes. That is true. So, just as you can sum up across the rows you can also sum by column. This is an interesting view of things.

Professor G. Venkatesh: You can get the column and then in the values you want to put sum or something.

Professor Milind Gandhe: In the values we will put revenue.

Professor G. Venkatesh: Sum of revenues.

Professor Milind Gandhe: Excel by default will be created salted from Jan to December. But, in our structure, the first month of the year is not Jan, it is April. What we will need to do is we will have to do our favorite first, favorite thing of copying and pasting.

Professor G. Venkatesh: Paste as values.

Professor Milind Gandhe: First paste this as values, yes.

Professor G. Venkatesh: Format it.

Professor Milind Gandhe: Yeah. Let us first now these cells Jan, Feb, March and cut them, not copy, cut. And then above the grand total what we will do is we will say insert cut cells. And if you do that, you now got it.

Professor Milind Gandhe: And then I will go format it as usual. Now, this is giving the picture of what happened in FY '19 to '20 versus FY '20-'21.

Professor G. Venkatesh: Month-wise, okay.

Professor Milind Gandhe: Month-wise. And you can see April of 2021 which is April 2020 that is the April of 2021.

Professor G. Venkatesh: There are no sales.

Professor Milind Gandhe: There is no sales, 0 sales. And we know what happened in that month. There was complete lockdown. If you go to May of that year also, you will see that only 1,600,000 sales, because the lockdown has only been partially lifted.

Professor G. Venkatesh: Then in fact in July it recovers a little bit and again goes back. Excluding July, a little bit 133,000, it looks like it is recovering then it again come back to 90.

Professor Milind Gandhe: Correct. Only by October you are getting back to the normal levels, is not it?

Professor G. Venkatesh: Yeah. But even still, yeah, 175,000, yeah, September is 177,000 in '19-'20 and 175,000, yeah.

Professor Milind Gandhe: Slowly coming back to normal.

Professor G. Venkatesh: Slowly coming back to normal, correct. But by February it has jumped. February has 245,000, sudden jump.

Professor G. Venkatesh: 2,45,00,000.

Professor Milind Gandhe: Correct. And March is even more. 2,50,00,000.

Professor G. Venkatesh: Okay, interesting. Let us plot this. I think it is time to plot.

Professor Milind Gandhe: We will insert, let us draw a graph GV.

Professor G. Venkatesh: Yeah, line graph I think it will be, yeah.

Professor Milind Gandhe: Line graph.

Professor G. Venkatesh: Yeah. I think so. Yeah. It looks is like line graph is the best choice.

Professor G. Venkatesh: Revenue, what do you want to call it, monthly revenue.

Professor Milind Gandhe: Yeah, monthly revenue, let me just or may be again I will put it down below here. That is better, easier to look at.

Professor G. Venkatesh: It is a trend, I think.

Professor Milind Gandhe: Monthly revenue trend, yes, I can give.

Professor G. Venkatesh: What is a grand total? We do not need the grand total.

Professor Milind Gandhe: Grand total is actually yeah maybe we do not it, because this coming over two years.

Professor G. Venkatesh: But why is it doing it month-wise then. Month-wise April that does not say anything. It saying what is the for, add up '19, that is useless I think grand total. I think delete I column. It is saying 2021 is a growing year, recovery year, '19- '20 we started seeing a decline. April of course was terrible. Revenue is recurring.

Professor Milind Gandhe: Really interesting thing GV I had not noticed it when I was looking at the data in the table, but when you look at the graph, it shows you already in March of '20 there was already the effect of the lockdown was already beginning to show. Already in March 2020 it was down and then April of course was zero, completely zero.

Professor G. Venkatesh: And then there is this interesting pattern in the July, I mean, '19-'20 there was no COVID and all, but even in '19- '20 you see two humps. We must ask Siva what that means. Something is going on there. It looks like July, August are lean months, even September, but April, May is high and again October, November again decreases.

Professor Milind Gandhe: Yes. So, there is some seasonality at least in '19- '20 you can see some seasonality. 2021 is possibly everything is disturbed because of COVID.

Professor G. Venkatesh: COVID, is just a recovery, is just going back.