Business Analytics for Management Decision
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Lecture – 07
Exploring Data and Analytics on Spreadsheets (Contd.)

Hello everybody this is Rudra P Radhan here. Welcome to second unity of BMD, we are in the process of discussing exploring data and analytics on spreadsheets and in the first lectures we have discussed about the excel details, about the data structure, data view and various menus and the operations in the excel sheet. The thing is that you know since it is a data analytics course and we have to use lots of analytics tool to solve business related problems and to take management decisions. So, that is how in the first instance you have to understand data.

Then you have to report the data properly as per the requirement. So, that is how we are supposed to know some things like you know spreadsheets, where you know we have to collect the data gather the data and then report as per the particular requirement. So, the moment you have to collect the data. So, that need to be reported and usually we report the data in the form of a tables and that is why a spread sheets like you know excels can help you lot to enter the data in a particular structures because excel is the representation like you know in a matrix format.

So, there is a kind of you know a column and you know row means. So, as a results every data can be recorded in a kind of you know a structured frame in a structured framework. So, this will help you lot to understand the data, visualize the data, and then you can get to know some of the insights in the data why the process of visualizations and the process of reporting the data in the excel sheet.

So, now once you enter the data and visualize properly and you get little bit insights then it will help you lot to go for you know hardcore applications or the use of you know some of the business analytics tools as for the particular requirement. So, that is how in the last lectures we have discussed details how you have to enter the data how you have to understand the data and how you have to process as per the particular requirement.

So, in this lectures we will we like to know a little bit more about this particular you know process and as a results it will help you lot to solve some of the problems either through spreadsheet or through any in any kind of you know complex analytic tools.

But in any kind of you know complex analytic tools. So, the use of spreadsheet is a kind of you know mandatory requirement until unless you know in details or your hand is not very good in spreadsheet then it is very difficult to process the data as for the particular business analytics tools.

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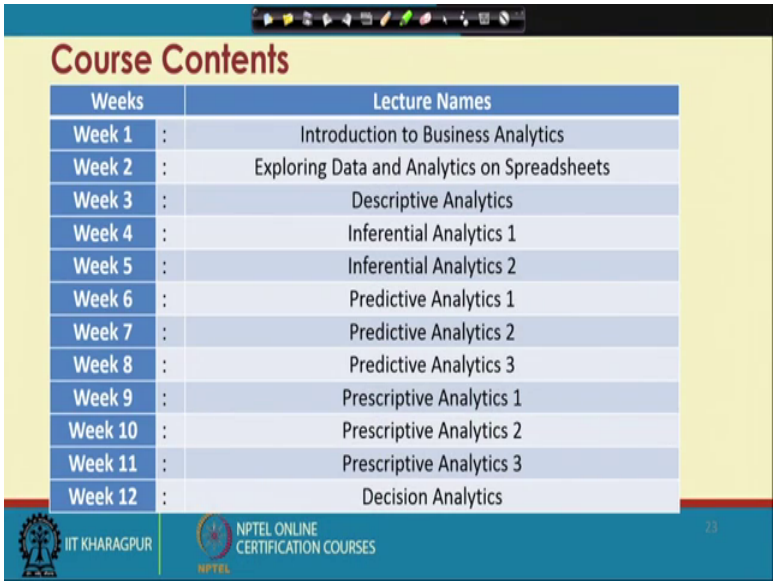

So, that is how here we have to see some of the kind of you know requirement. So, here the requirement is like this. So, we are in the process of this a exploratory in data analytics on spreadsheet.

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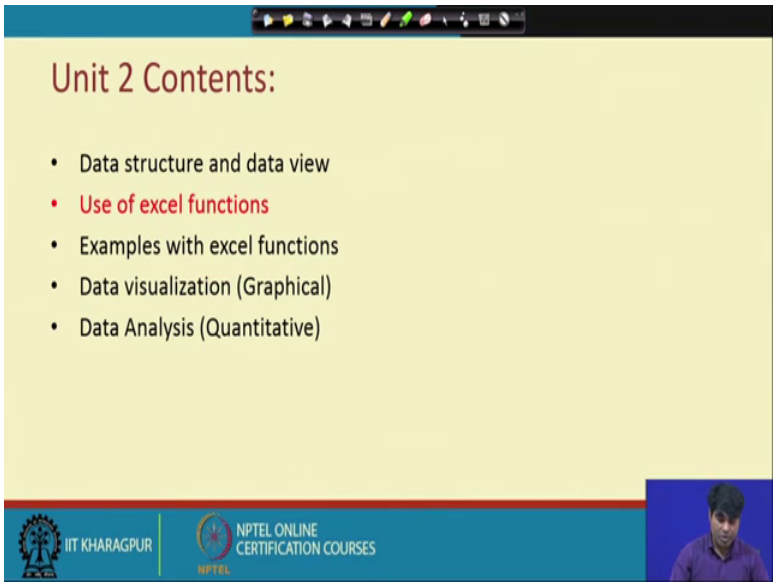

And then in we are in the second series of this particular unit that is use of you know excel functions because excel is lots of you know functions through which data can be further struck.

You know structures as per the particular you know requirement because it is very useful for a different you know you know very useful for making in different kind of you know requirements for a particular in analytics tools.

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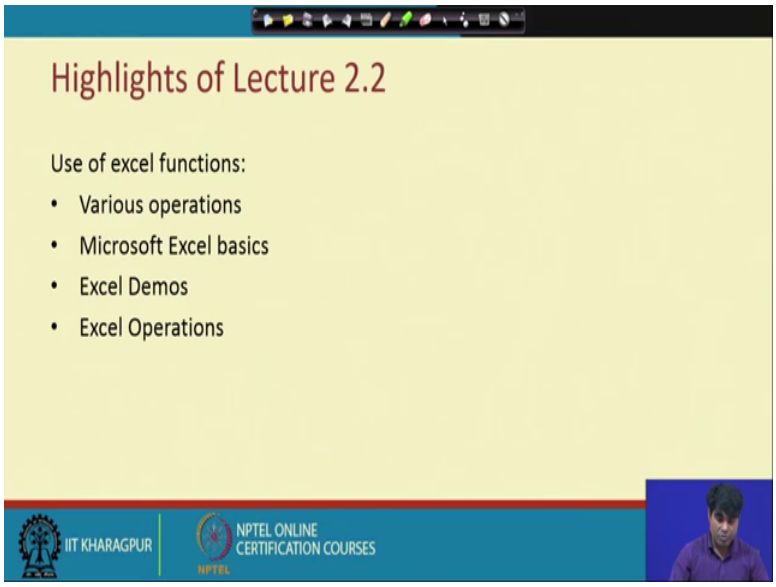

So, here in the excel functions we like to know various operations and Microsoft excel basics and some of the demos and then some of the a live operations.

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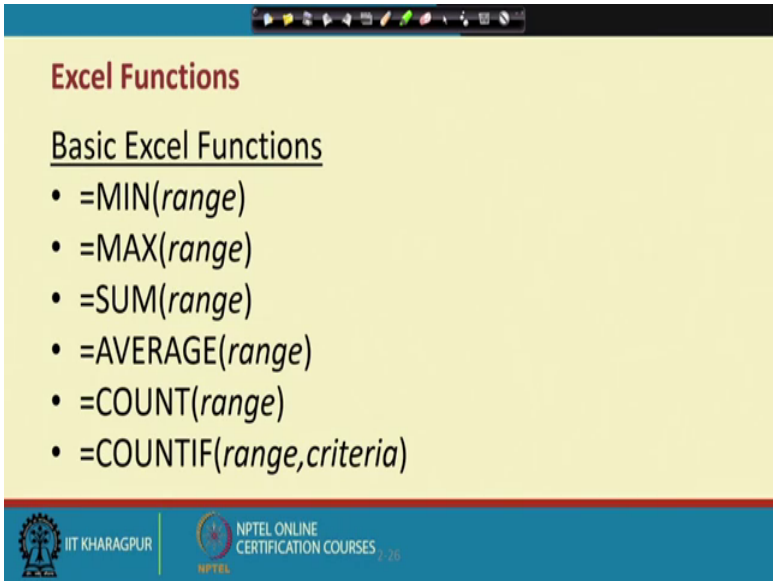

So, now what I have discussed earlier in the last lectures. So, how you have to enter the data and then we have to you know process as per the particular requirement for instance. In the first end when you when you have a spreadsheet means when you report the you know first-hand data into the excel sheet you will find means, there may be possibility that the data by default is not in a structured format, there may be some of the missing observations and there may be some kind of you now qualitative structure, quantitative structures. So, technically it is not in a proper format, because you know if you are collecting some kind of in a secondary data the persons or you know the guy who is collected earlier for e g or for our requirement. And when you are using the same data through this particular spreadsheet then your requirement may be different.

So, as a result it is the mandatory kind of you know things that you know you have to process the data as per actual requirement. So, that is how excel can help you lot to solve these kind of you know problems. So, that is how here we have to see what are the operations are readily available. So, that you know you can understand the particular you know structure and then you can analyze as per your you know requirement. So, now, some of the basic operations are here.

So, the to find out the minimum of a particular series, maximum of a particular series, you can also you know have a kind of you know summations, then you can find out average, then you can also count how many kind of you know items are there then you can also count oh subject to certain criteria.

So; that means, you know you have a plenty of you know options here is you can actually visualize the data and you can you can in a position to get some kind of insights. So, that you know this will help you lot to solve some of the problems and then it will help you lot to pick up a particular techniques a you know business analytic techniques. So, that you know this particular problem can be addressed in a more attractive way. So, that is how we are to know some of the functions let me give you the particular hint here, how you can operate all these things.

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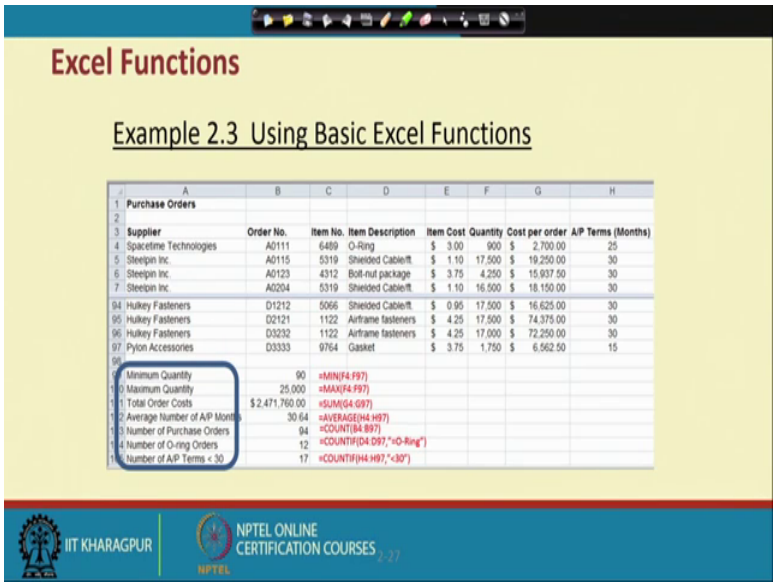

Let us say this is a excel spreadsheets and this is typically operational data and you have actually suppliers information's in the you know first column and then you have a second column ordered numbers, than a third column item numbers, then item descriptions, then item cost quantity cost for orders, then a average a per month. So, all these things are actually they are in the particularly in the spread sheet you know by looking this spreadsheet you know you will feel something different; that means, you know by default it is actually in a systematic format.

So, from this you know tables you can just guess you know how beauty the kind of you know excel spreadsheet so; that means, by default it will e it will put in the data in such a way that you know somebody can understand you know what is actually happening and how is this particular structures all the things are you know very you know easily can be evaluated or easily can be recognized. And that is that is how the requirement of you know knowing the spreadsheet and that too excel spreadsheet.

So, this by default will give you a very beautiful you know kind of you know structure. So, that you know you can actually visualize it without any operations or without any kind of in analytics tools, some yeah you know basic insight you can actually you know check and by the way and some of the inside things which we know not which may not be actually directly visible, but with the help of some operations you can you know able to detect all these things for instance let us say these are all you know item cost. So, it will start it is starting from actually 3 1.13.7 1.1; that means, you know the data is not actually a same the reporting are you know different. So, it did the difference is from you know supplier to supplier.

And that is how the basic requirement of you know analytics if the all the information's are same then that is not actually the kind of you know a requirement of you know business analytics. So, you can use any kind of an analytics tools when you know the inputs you know or entry to a particular you know means entry of data to a particular variable have a some kind of you know variations.

Then you are in a position to you know find something insights out of it if it is constant then nothing to you know so nothing to find out. So, that is how. So, basic requirement or basic understanding is that you know you must report the data and you see actually how is the shape and structure of the data, you know I am very sure you can you can you can enter to this you know analytics world when you find a the there is a variations of you know data with respect to a particular variables if not then you know the in analytics you know.

You analyst cannot be applied all together. So, that is how we are here to see the kind of you know structure see the kind of you know operation you can do and through the operation you can also get some kind of you know better insight. So, that you know you

can help the process and then solve the process, then you know get come to a particular you know conclusion where you can take better decisions.

So, here you see is some of the things I am supposed to highlight here that is the way a excel functions and that too. So, it is nothing, but you know some kind of you know operations. So, by default the functions are there and you have to operate actually as per your you know requirement some of the important you know functions are you know finding out the minimum of the series maximum of the series sum of the series then you know average then counting. So, count with conditions all these things are you know you know there actually for instance.

If you have a varies a big data and you have a plenty of you know information it is mandatory that you know you should know the kind of you know range. So, which is the difference between the maximum and minimum then you should know what is this sum for instance let us say there is you know thousands of you know suppliers and they are applying their product to a particular market and then you are supposed to know who is the which the maximum contributors and who is the least contributors.

And what is the total totally you know supplied to this particular market and what is the average a average supply to this particular market and then against you like to know what is the clusters particular cluster you know; that means, a you know supply with a particular you know amount. So, that can be detected through this particular you know excel function for instance count to e and count with the with you know different kind of you know conditions right.

So, that is how you know the beauty of the excel sheet. So, this spreadsheet by default will give you some kind of you know exposure through which you can by default you understand something and again by the excel function or you know excel operations you can also get some kind of you know further you know insights. So, that you can understand the situations or understand the particular problem in a much better way.

So, that is how we are here and some of the other excel functions are there, but before that let me take you to a particular you know excel sheet and I will give you some kind of you know snap shot how these actually excel functions are you know really work in a in a kind of you know problem. So, let me go to this particular you know excel sheet and then I will I will show you the kind of you know requirement right.

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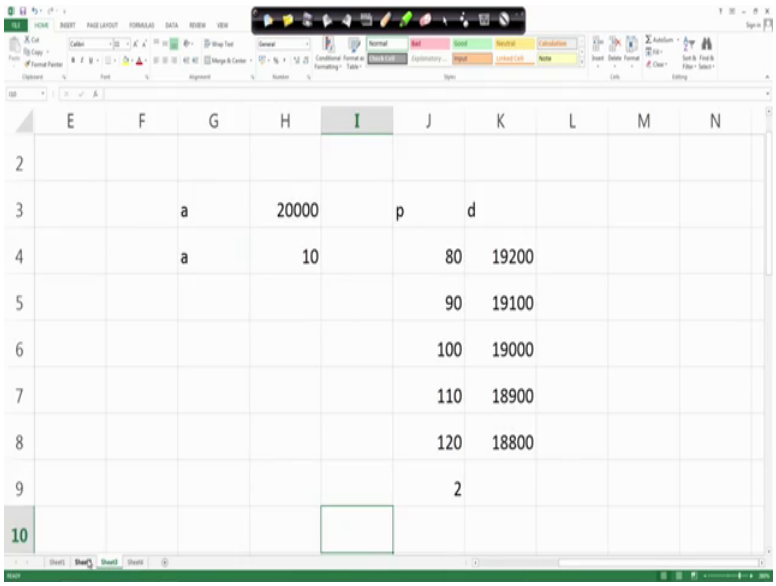

	E	F	G	H	I	J	K	L	M	N
2										
3			a	20000		p	d			
4			a	10		80	19200			
5						90	19100			
6						100	19000			
7						110	18900			
8						120	18800			
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10										

So, let us say let us go to this particular you know structure here.

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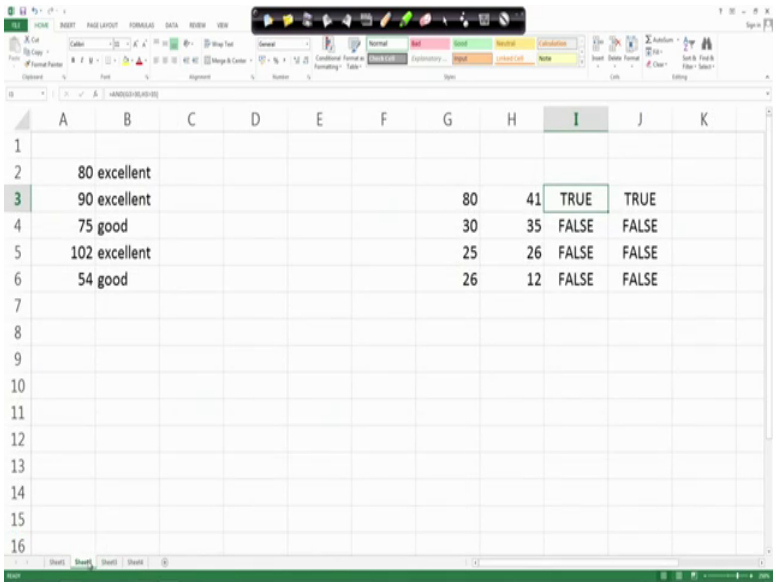

	A	B	C	D	E	F	G	H	I	J	K
1											
2		80 excellent									
3		90 excellent					80	41	TRUE	TRUE	
4		75 good					30	35	FALSE	FALSE	
5		102 excellent					25	26	FALSE	FALSE	
6		54 good					26	12	FALSE	FALSE	
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All right this is what. So, let me let me take this particular you know examples and this particular example we have already discussed in the previous lectures. So, highlighting the a demand fry demand forecasting with you know price and the same data we can use here so; that means, technically.

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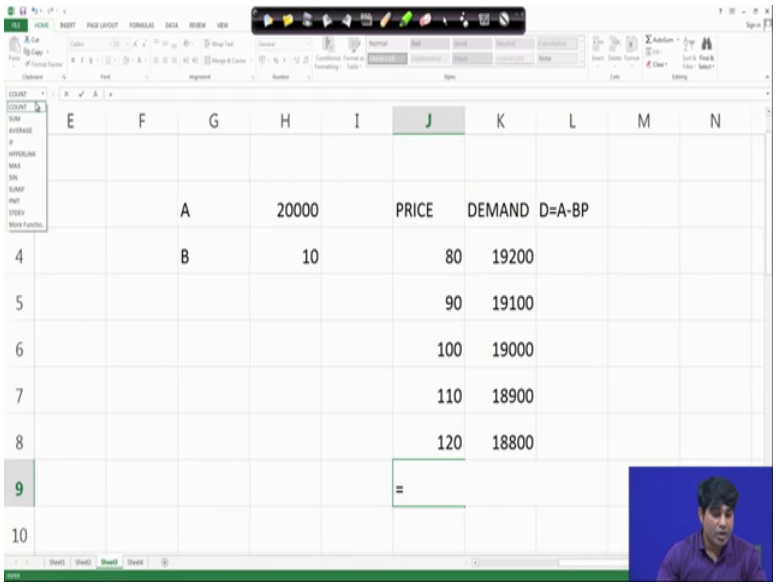

So, this piece transfer here actually a price let me write here you know price. So, that you know you can understand much better way and this is actually price pictures and then this is actually the demand pictures demand pictures and then so there is a variation. So, what we have done in the earlier actually examples.

So, you know the particular equation is nothing, but actually like this it is a demand equation, by default is nothing, but equal nothing, but like this a A minus B P that is how the particular you know particular you know formula here and here is the idea is that you know this is a VN negatively a you know this is negative relationship between price and quantity demand and then with you know some an predictive you know tool predict analytics tools. So, we have to derive this particular you know functions and that to through this you know first observations you are in a position to find out what is the parameter value A and B.

So, assuming that you know A and B are known to you. So, that is how we have actually assumed here 20,000 and then then this this you know B is nothing, but actually it 10 here. So, and let it be here a capital A. So, that this can you know consistent and. So, here H givens and B is actually given 10.

And with the help of this particular you know examples you can actually generalize this particular, you know a spreadsheet here just, you know a writing this particular, you

know equations you are in a position to calculate the demand when the price is like this then you know when price will change then demand will be changing.

So, that is when just we have actually 4 write the formula here. So, this formula is written here and so that is just you know just you connect with the a minus B P that is the actually model demand models and on the basis of demand models you have to just operate, then you know when price is 80 then this is the kind of you know demand and when price will be changes 90 100 a 110 120 and so on. Then you know the model the demand kind of you know a demand ret requirement will also be changing. So, since it is actually the model is written here perfectly. So, just you can actually scroll it then the automatically this will be actually calculated.

So, this is what we have already discussed in the in the last lecture. So, so my job is here just to give you the some kind of you know excel operations; that means, just to know how other things you can actually explore for instance let us say demand forecasting is something you know one of the other objective, but here let us say price is the kind of you know you know variables.

So, we like to know more about the price component or again you can also like to know more something about you know demand. For instance you know here there are how you know price is price are you know or different you know options. So, now, first of all you know you put here actually this is the column where we have to operate let us say this is 2 I will put here actually equal to signs, the moment I am putting equality sign means I have some kind of you know requirement here right and there is some objective here.

So, the putting equal to sign means the excel is ready a spreadsheet is ready to give you some kind of you know insights or you know some kind of you know value as per you are you know particular requirement. And now you should know actually what are the operations are there and what are the things you are supposed to know from this particular you know spreadsheets the of course, the spreadsheet is very small 1 even if you know this is now a 5 numbers, but it can be 550 numbers it can be 5000 numbers or it can be 50 000 number, but the operation is more or less actually same. So, because the that is how the beauty of the excel sheet or excel spreadsheet.

So, once you understand the operations and you know how to operate then you know whether it is a 5 observation 50 observation or you know 5 a 5 50 000 observation does

not matter. So, it will operate properly and it will give you exactly as per your you know a requirement the; that means, that is the insight which you need actually for a particular problem.

For instance whatever operation we have already highlighted like you know to find out minimum of the series, maximum of the series, the sum of the particular series, then you know average of this series then you know count with you know numbers count with the particular conditions. So, these are the you know there.

In fact, there are many operations, but by default I am just highlighting some of the important operations through which you know all the analytics tools you know you know can be carried out for instance description analytics (Refer Time: 18:34), but these are the basic things you are supposed to know in each case whether it is a descriptive analytics or whether it is a predictive analytics or whether it is a kind of you know a prescriptive analytics. Now so once the moment once you put here operations you know equal to so by default it will be demanding that you know you need something. So, now, what is your need that you have to specify that is what the excel functions or you know excel operation is all about.

So, now, after putting equal to so then you go to this you know column here so here there is lots of operations are there starting from counts sum average I hyperlink maximum sign. So, there are you know so many functions are there by the way by the way you can put here from you know more functions also so; that means, if you if you got go through here you will find you know series of functions are there starting from you know area to area the kind of you know requirement to requirement or some.

So, many things are there actually you know plenty of operations are there. So, that from these you just you know just you know imagine that you know what is the beauty of this particular you know excel spreadsheet so there are. So, many operations are there. So, this will help you lot you know to analyze something or you know to predict something to visualize something right.

So, here so we will go 1 by 1 so as per a particular requirement a in the mean times, I just give you some snap shots about you know few operation. So, that you know you will get some kind of you know exposures. So, and you can understand you know what is the beauty of this particular you know spreadsheet right. So, I am not going in going in

details more about this once just once again I am putting equal to then going to this you know operations. So, now, is the moment you will be put here operations let us count you know here there are lots of things are there let us put you know max.

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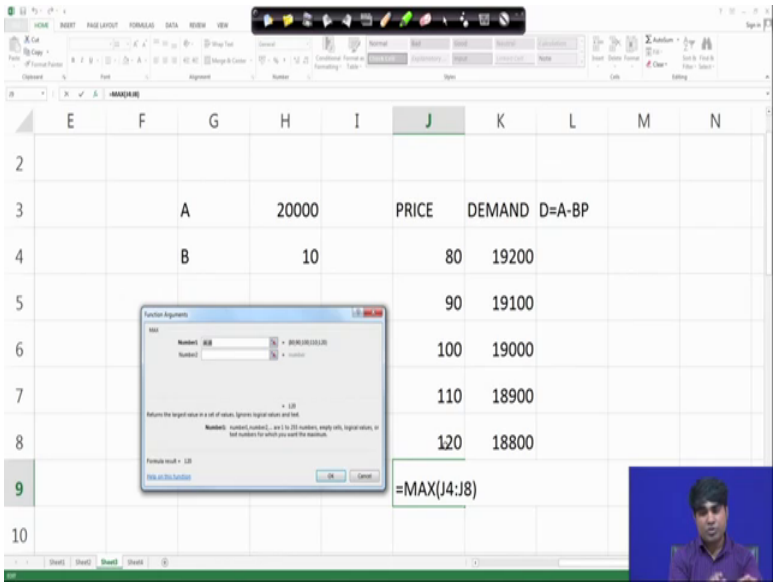

So, if you put then if the moment you put you know max signs or in operations. So, it will ask you actually like you know this is a number 1. So, since we have one series only. So, now, the series starts from here this is starts from here it is z th column and starting from you know 4th row to 8th row so; that means, technically. So, 4 J 4 to J 8 so, these are the available information price information's.

And at the moment you are putting max of this a particular series; that means you are interested to know what is the maximum price from J 4 to J 8 so; that means, the operation is by default here. So, you are not supposed to calculate actually or you are not supposed to check it. So, by default just put the operation then by default you can get to know and by the way there is another option also in excel sheet just you put in a ordering ascending to descending or descending to ascending by default you can get to know the maximum value of this particular series and minimum value of this particular series.

But here without knowing the without means without doing this you can still you know have the value as per you are you know particular requirement. So, I have already putting the command you know maximum J 4 to J, I then if you put then by default you will get

the particular you know structure you see here 80 90 100 110 120. In fact, in this series the ordering is actually from this a you know a particular orders right.

So, that the smallest one is already there in the top and the highest one is already in the bottom. So, that is why. So, by default it is coming maximum is 120 right. So, again you push you change the operations put again you know equal to sign then you change your you know operations then here we put you know sum max and then you can put here actually minimum right you can write here actually is some kind of you know maximum.

So, then you can put here actually let us say minimum right then you see here these are all actually various functions of you know these are all I you can I hope you can visualize here. So, these are you know various operation we have already operated maximum then I will put here actually put you know let us say minimum right. So, click here then it will ask you know series actually. So, you just indicate the series A series up to actually 120 then you just put you know you know close the loop then put enters by default it will give you some kind of indication about the 80.

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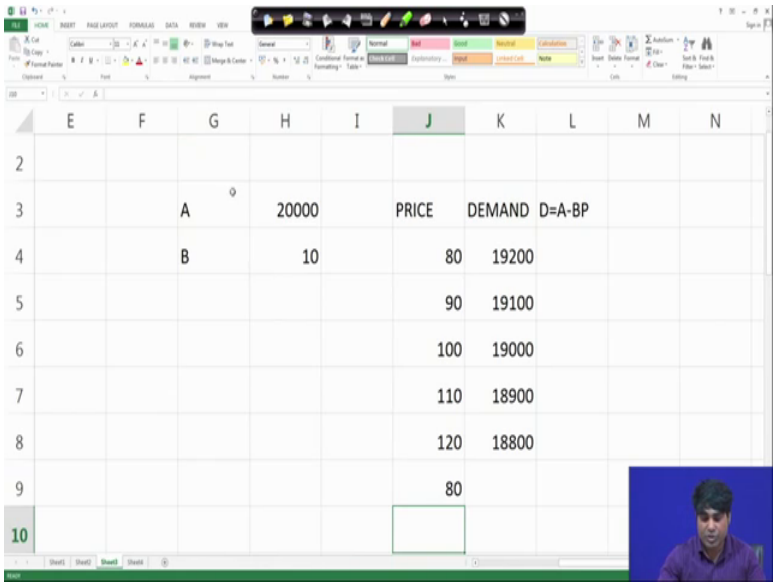

You know so; that means, technically it gives the idea that you know within this particular series. So, excel will help you to know what is the minimum 1 and what is the maximum 1. So, the minimum one function is there and maximum one function is there just to give the command of minimum and highlight the A series starting and series

ending by default it will give you the indication of the minimum of the series and maximum of the series.

In fact, suppose you want to know you do not like to use actually the entire series. So, you can actually have a breakup for instance here we have a you know see J 4 to J 8. So, let us assume that you know it is J 4 hundred to J 800. So, you are interested to know J 400 to J 600.

So, then you fix the range accordingly. So, then again excel function by default we give you the minimum value and maximum value of that particular range only right. So, that is how the beauty of this particular you know excel spreadsheet and you know excel functions right so again. So, you change the order here put you know equal to sign and again go to the menu and let us say put you know.

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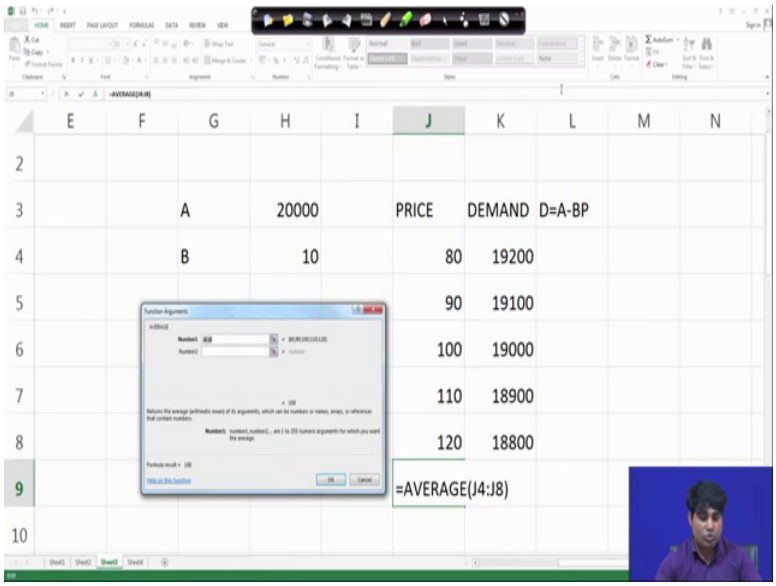

A sign of you know sum so; that means, technically we have actually a price information's from you know you know a 8 observation that is available here from J 4 to J 8 and you are interested to know what is the sum of you know all these price. Of course, the you may not you know require, but still if you would like to know what is the total price and then accordingly you can find out the average price right. So, let us say what is the total price with this you know for different you know of curse are 5 different situation then you just put.

Then you will get actually 500 then again you know sum. So, then if you want to know sum average then again you put equal to then you go to this particular you know drive then you put average options and then again. So, it is the indication about to the J 4 to J 8 then again. So, what will you do actually? So, you just you know put you just put. So, then you will get you know average so; that means, against.

So, you have actually 5 different price pack and you would like to know what is the minimum of the particular series maximum of that particular series then and then what is the average price. So, that means, you just calculate here's you just add all these 5 items and divided by 5, then that is nothing, but called average and you know I am very sure you will get you know same value. So, that is why without actually a calculating something and excel function or excel spreadsheet by default will give you some kind of you know insight, which can help you lot or to get some kind of you know better insights.

So, what I can say that you know a excel function has a kind of you know beauty to help you lot to get some kind of you know insights from the a data with a particular variables or you know with a particular you know problem as per your you know requirement where you to take a you know management decisions right. So, now, with this then we will we will move to will move to our you know other component.

So, this is how we have actually discussed and then I have already given you the idea actually how you have to go about this. So, similarly you can calculate count to you know means how many numbers are there. So, by default it will give you count if you know something let us say yeah how many cases price is less than to 100 or how many cases price greater than 200 like you know count that is you know you have to operate with you know count conditions that is one of the excel functions again. And with this you can actually calculate you know or you know calculate something as per your you know particular requirement.

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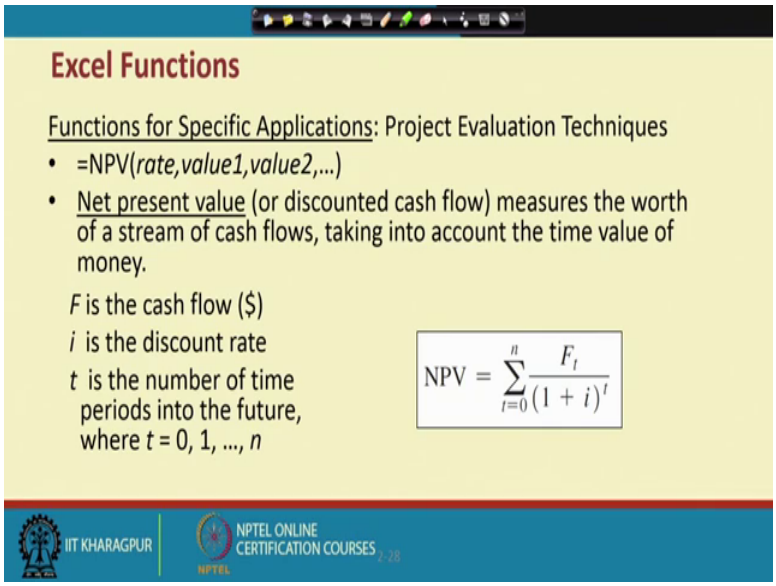

So, now I will give you another kind of you know examples excel has you know beautiful actually a financial modules and here one of the you know one classic example is you know project valuation kind of you know things. In the project valuation you would like to know the feasibility of a particular project where you know there is a investment and the investment will give you some kind of you know return over the time and then there are lots of you know evaluation techniques are there financial modeling techniques are there, that is otherwise called as a project evaluation techniques and through which you can take a decision whether project a project can be undertake it can be feasible or cannot be feasible or project can be undertaken or should not be undertaken.

So, there are. So, many a evaluation techniques are there and like you know net present value criteria that is what is called as a NPB IRR internal rate of returns like you know. So, many other techniques are there. So, you know the idea is you just to you know to know which whether a particular project is a feasible one or not feasible one. So, we like to actually evaluate this is actually you need judgment or you know you need a decision.

So, this is again you know management problem and you are supposed to you are supposed to you know solutions whether to whether to take this project or you know you have to reject this project. And excel spreadsheet has a you know kind of you know

functionality through which he you can also evaluate this particular you know project of course, you are supposed to know theory behind this particular you know technique.

And you are you are supposed to understand the particular problem and understand the technique the until and unless understand the particular you know technique and the kind of a requirement you are not in a position to find out a particular you know solutions or you are not in a position to take a decisions well; that means, technically what I like to say.

So, the excel spreadsheet has a kind of you know of financial modules through which you can actually find out the feasibility of a particular project, but before that you should know all these things. So, that you can you can actually apply the functions as per the particular requirement for instance in the net present value criteria the particular requirement is actually you are supposed to know what is the component called as a discounting rate that is what first component is here rate and then. So, here's actually. So, this is what we are you know are supposed to know.

Then this is a kind of you know requirement discounting rate and then value 1 and value 2 are actually series of you know cash flows so; that means, the literary or the a theoretical understanding of this problem is like this when you put some kind of you know investment then the investment will give you some kind of you know returns, that is called as actually cash flows or the value 1 value 2 is nothing, but called as actually a return which you expect over the time and since you are expect this is a kind of expected revenue or you know return over the time.

So, that may not be a that may not be a the actual. So, that is how so that need to be actually discounted. So, that is how the particular criteria will help you to evaluate whether you know this particular project is feasible or not feasible with help of initial investment then the rate of discount and the cash flows generated over the A time.

So, the typical formula is like this. So, it is the it is actually the net present value means the difference between benefit and you know cost and both the benefits and costs should be discounted over the time and in most of the cases if there is no additional cost then the initial investment is a treated as actually a particular cost or you know total cost.

So, now, what we are supposed to do or the evaluation process is like these that you know you have to just you know have these some of you know expected revenue over the time and then minus you know initial investment. If the expected return over the time will exceed the initial investment then by default the component NPV that is net present value will be positive and the signal will be the project is a feasible 1.

And if not then the project will be declared as you know not feasible 1. So, that is how the financial kind of you know understanding or the project valuation understanding. Once you know the kind of you know understanding or theoretical kind of you know things then you know a excel sheet will by default will give you some kind of you know exposure how you have to you not do the kind of you know things so; that means, in the excel sheet your requirement easy. So, you have to put actually discounting rate and indicate the cash flows requirement then by default it will give you some kind of you know snapshot about the feasibility of the project right. So, now I will give you some kind of you know structure here.

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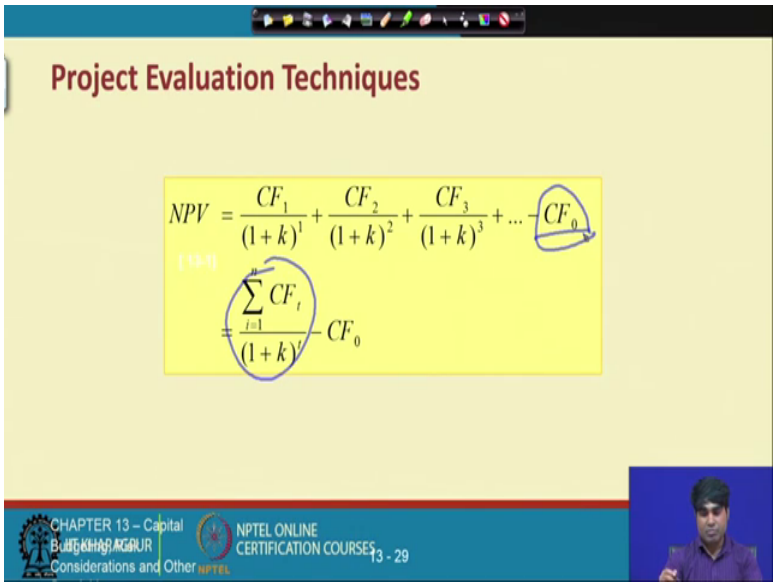

So, this is how actually project you know project valuation technique all about that is the net present value criteria it is actually these this is nothing, but actually this is nothing, but actually a returns, you know returns expected return over the time and these are all cash flows over the time it is a time line all together then a CF actually stands for you

know cash flows and CF 1 means you know a returns after the end of the first year CF 2 stands for return after the end of the second year and so on.

And here the CF 0 means it is nothing, but called as actually initial investment. So, now, what will it do actually since it is the time lines and so different returns about the time? So, every return need to be discounted then we what will you do you have to aggregates that is nothing, but you know some of you know total expected you know a return and then minus initial you know investment that is actually CF 0 cash flows at the best period right. So, as a result it will give you some kind of you know exposure about the particular you know requirement.

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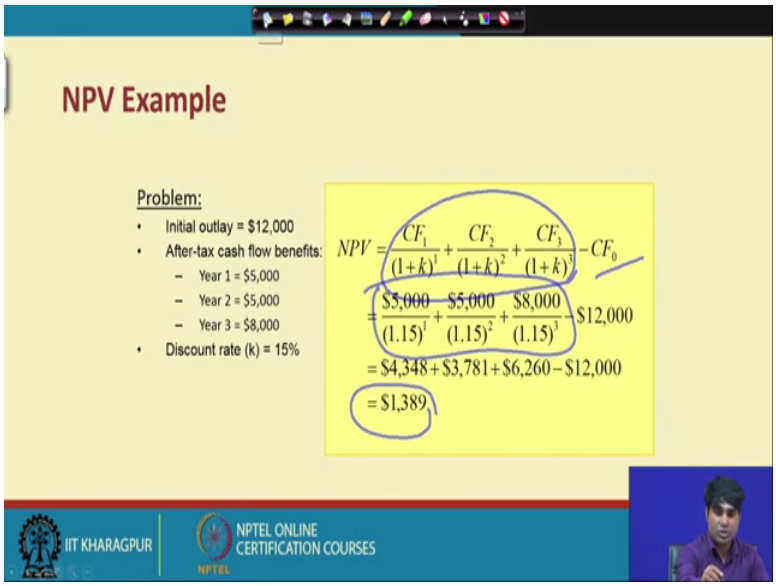

Then so accordingly you can get a some kind of you know judgment. So, see here this is a typical problem. So, the initial outlay is let us say 12,000 and after tax cash flows benefit is benefits are you know first year secondary and third year respectively that is 5 5000 5000 5000and 8000 and we have kept actually discount rate actual you know at a you know 15 percent right.

So, with this information's so your tasks are just to know whether the project is feasible one or not feasible 1. So, now, NPV can be help you lot to take a decisions and since it is actually mathematical formula to calculate and then you have to report and then take a decision. So, you know excel by default will give you such kind of you know decisions

within you know few seconds only right. So, because the operation is there and that is how the beauty of the excel functions.

So, now this is how the typical you know mathematical or you know the derivations through which you have to take a decision here you see here is mathematically. So, this is actually 3 years project all together and this is what you know initial cash flows and this is what the initial cash flows and then these are all actually, you know total you know returns and with the after you know discounting or you know putting the discounted, you know rate of discount or adjustment that is nothing actually called as a present value of you know future cash flows and then this is initial investment then finally, we are getting some kind of you know positive value.

So, as per the kind of you know means. So, far as a decision making concern and decision making is concern. So, we can we can declare that you know project is feasible one if NPV is becoming positive if not then it declared as you know until the project is not visible.

Since it is coming actually positives sign; that means, the declaration is that you know project is the feasible 1. So, this is how the decision you have to take and accordingly you can actually you know do this some kind of you know judgment.

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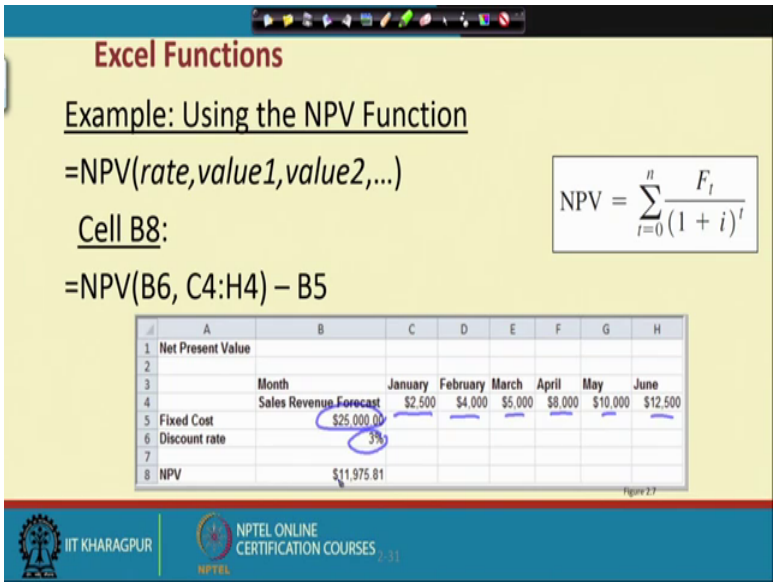

So, the same structures which I have highlighted here with the help of you know you know excels functions. So, now, see here in the excel functions you have actually typical all these information's for instance. So, this is this is how actually this is actually initial investment and this is what discounting rate and these are all cash flows you know it is a monthly cash flows.

So, we have actually 6 different cash flows and then the initial investment this is called as a CF 0 this is CF 1 CF 2 CF 3 CF 4 CF 5 CF 6 and this is a discount rate a you know 3 percent then you are supposed to know what is the actually the final decision whether to undertake this project or whether you have to result the project.

So, in the excel sheet once you record all these things this is what actually the final you know outcome NPV which is coming at actually positives. So, now, you can open the excel sheet enter this data then you calculate you know as per the particular you know requirement let me give you know here actually idea.

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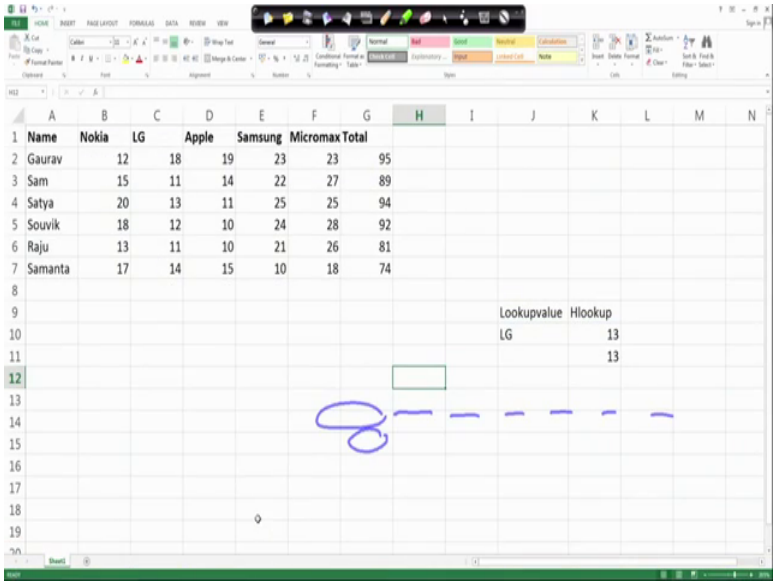

So, go to this you know excel sheet and then I have here the samples.

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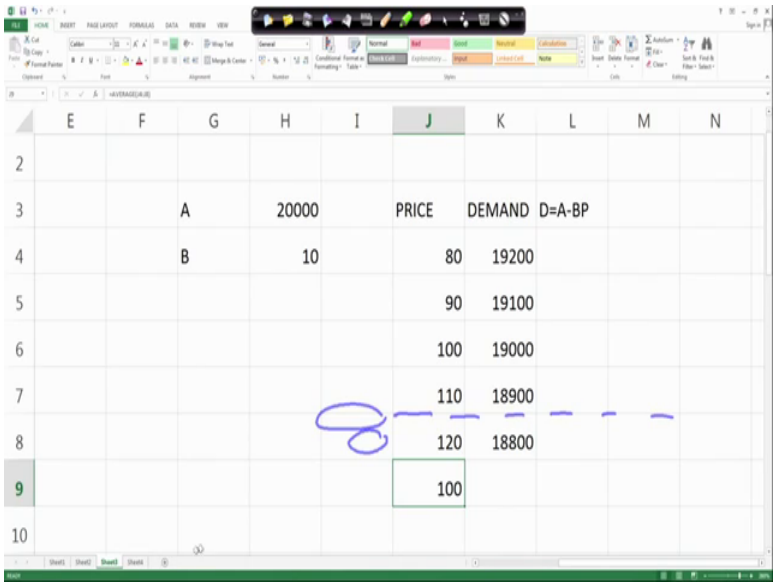

	E	F	G	H	I	J	K	L	M	N
2										
3			A	20000		PRICE	DEMAND	D=A-BP		
4			B	10		80	19200			
5						90	19100			
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8						120	18800			
9						100				
10										

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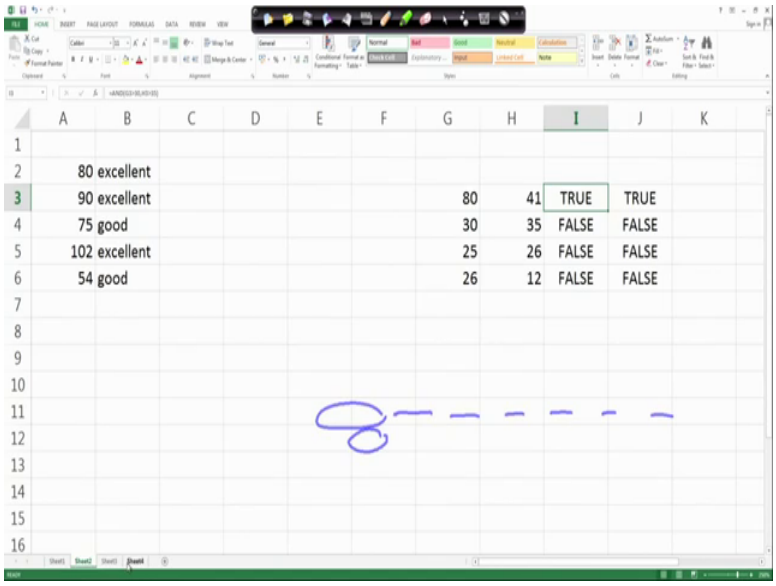

	A	B	C	D	E	F	G	H	I	J	K
1											
2		80 excellent									
3		90 excellent					80	41	TRUE	TRUE	
4		75 good					30	35	FALSE	FALSE	
5		102 excellent					25	26	FALSE	FALSE	
6		54 good					26	12	FALSE	FALSE	
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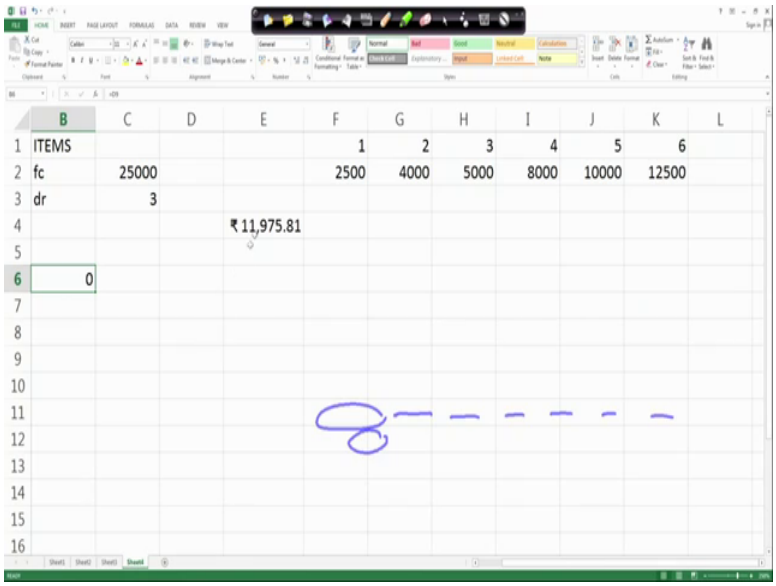

So, this is what the examples. So, this is this is what actually initial cash flows initial cash flows.

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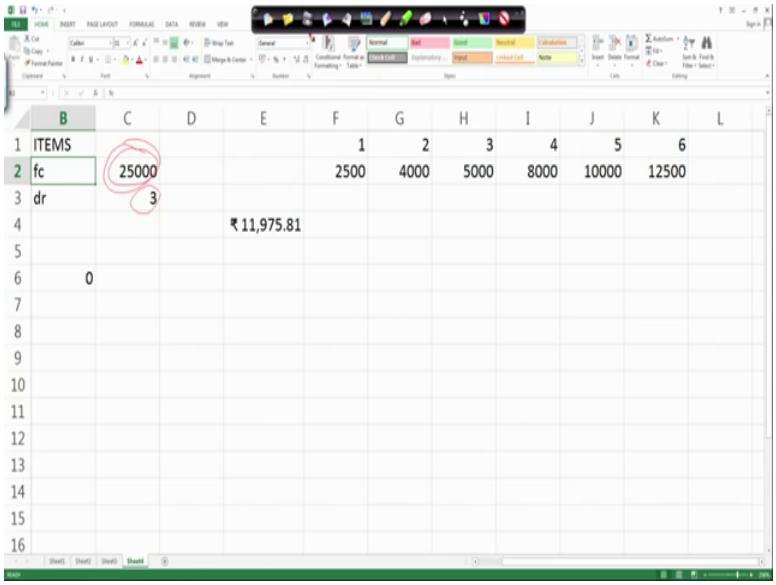

And here so this is what actually fixed cost or you know it is not a fixed cost actually initial investment you can call CF 0 and this is discount rate you know 3 percent and these are you know cash flows.

So, what I have done here is. So, I have here actually a I have here actually a the kind of you know requirement. So, this is what the final outcomes.

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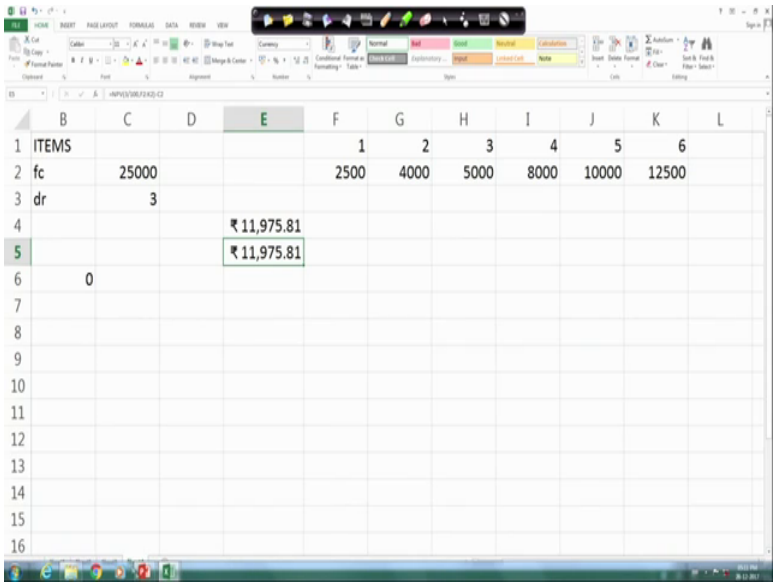

So, what I have done here. So, I have done the NPV calculations. So, the NPV calculation is like this. So, I can give you the particular exposures just you know put equal to then you give actually you know N command and P then by default you will get some kind of you know structure here just you double click there then you will you will get the picture like this. So, it will ask you to report the rate then value 1 and value 2 so; that means. So, the kind of you know cash flows. So, here the first entry g the rate of discount which is nothing, but actually 3. So, it is a 3 percent means. So, then you have to put actually 3 by a 3 percent and then you actually a then you could actually the kind of you know the indication about the a entry cash flows, then you close the loop then you close the loop and just put the a you know enter and then the value will be coming like this.

So, this is what actually it is coming actually positive component and as a result. So, this will give you some kind of you know snapshots here. So, see here. So, this is what actually the kind of you know net present value and that too without any initial investment. So, now, if you put here's minus initial investment then that is nothing, but actually 25,000 then you will get exactly this much of value. So, that is what actually NPV so; that means, the NPV is nothing, but the a benefit minus cost.

And discounted over the time and since CF 0 is the initial investment that is the only single amount in the cost side. So, that is the fixed amount to be deducted. So, as a result

so total some of the revenue minus cost will give you the NPV since it is coming positive then your decision is e that project is a feasible 1.

So, against once again I am highlighting that you know excel has a beauty a beauty to solve such kind of you know problems and it will take you know very few minutes to solve these problems you know without any you know extra calculation or without any kind of you know mathematics right. So, this is how the kind of you know structure and then accordingly. So, this is what we have already highlighted.

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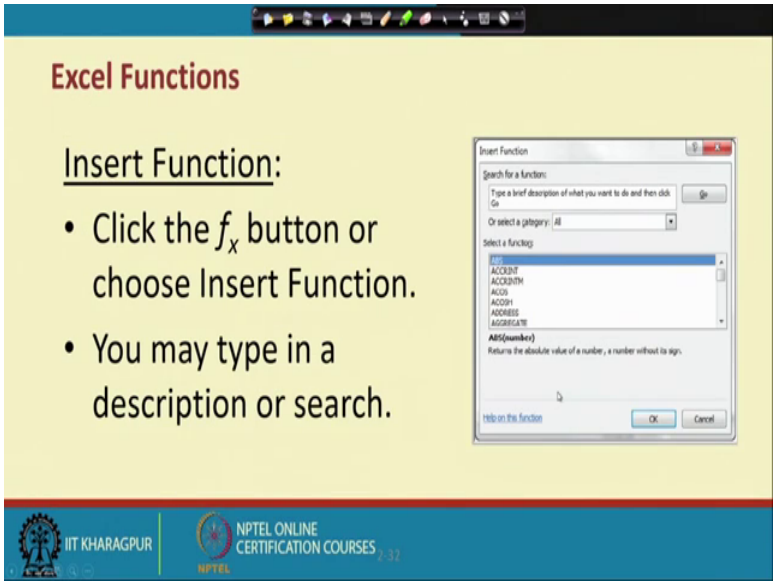

And similarly there are plenty of you know excel functions through which you can actually solve some of the business related problems and can get some kind of you know insights out of it.

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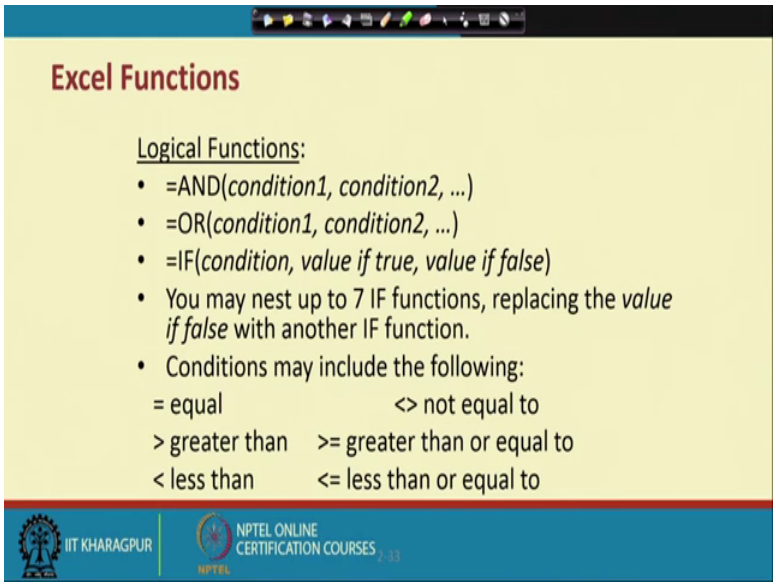

Similarly, excel has a lots of you know other kind of you know functions, if you put equal to and put and option or option and if options then you know with these operations you will get actually specific requirement like you know just like you are putting equal to like putting minimum maximum sum and p b, similarly put count a count with the conditions and with the condition or with the condition if with the condition all these things will be there. So, now, with the kind of you know requirement you just put the kind of you know functional command automatically excel will give you some kind of you know output and that through this output you can take a management decision.

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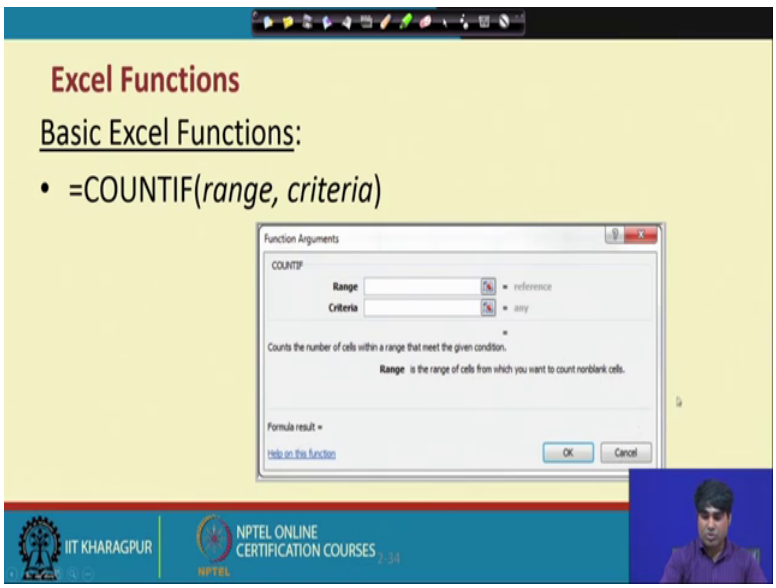

So, this is a this is another kind of you know snapshot which we have already discussed.

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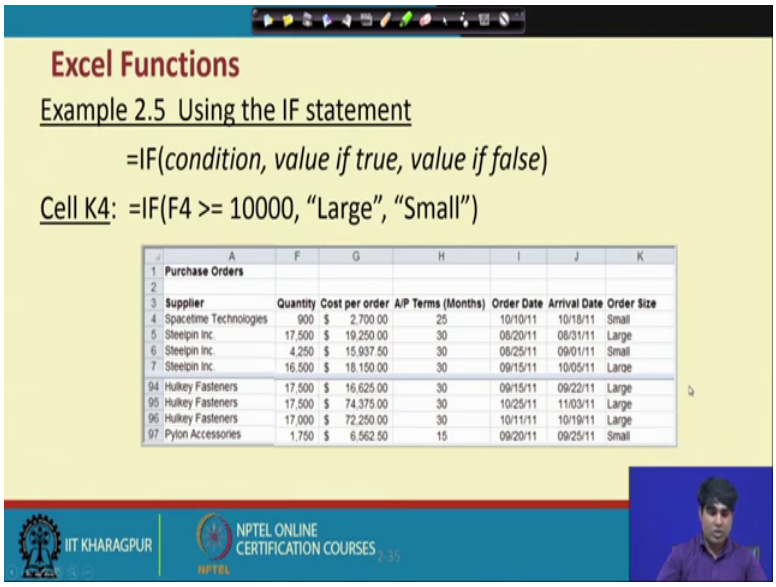

And similarly this is if options last set of data. So, as per your requirement. So, you know if this is actually series of you know data. So, you have to declare you know how many are large how many are small with the benchmark value of you know 10 000 then it will give you some kind of you know details about this particular you know problem. So, against once again I am highlighting that you know excel functions are very useful for solving some of the business related problem.

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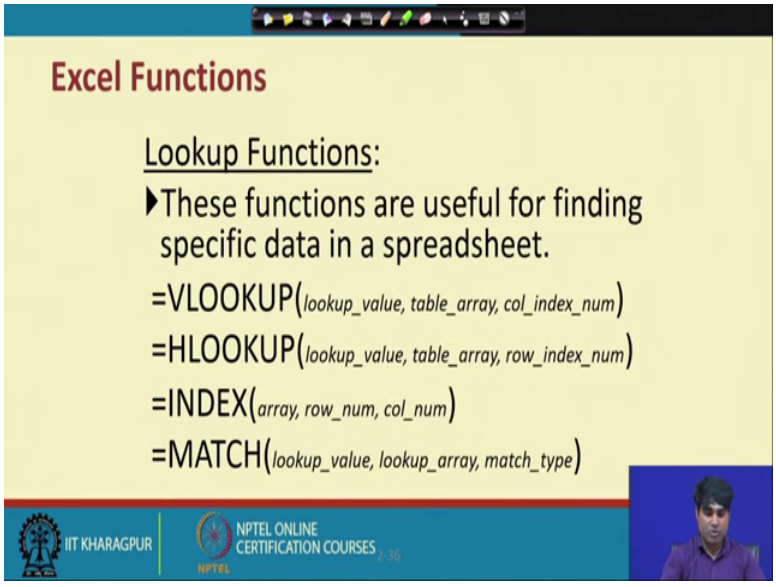

These are all some of the advanced functions through which actually a against some of the complex problems or you know complex requirement can be a solve we will look up each lookup index image all these things are there again, similarly same function you have to go to the excel sheet you must have a data then you put equals equal to signs and then start, you know giving the command or you know operate after giving input to this particular, you know requirement then automatically a excel will give you some kind of you know a value which will help you to take some kind of you know management decision so; that means, technically what I really say that you know it has a lots of you know you know functions. So, through each you know excel spreadsheet will help you a lot to solve some of the.

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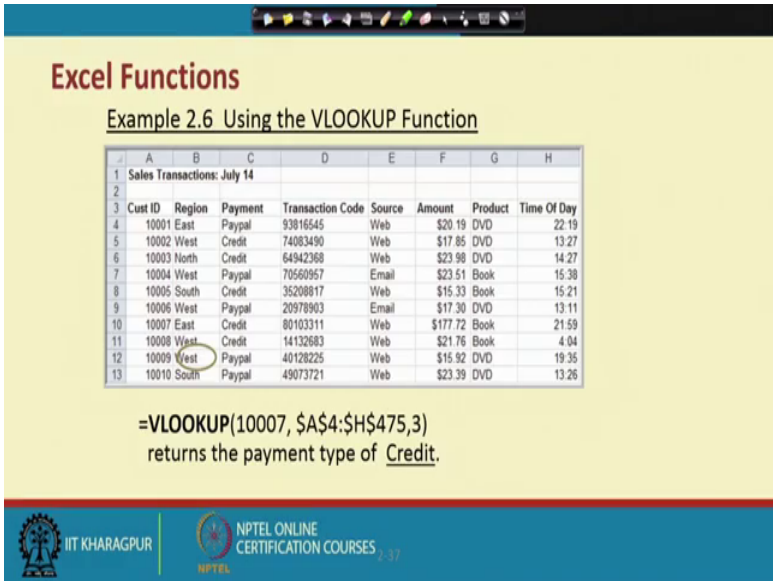

A business requirements right so these are already lookup structures and similarly mesh.

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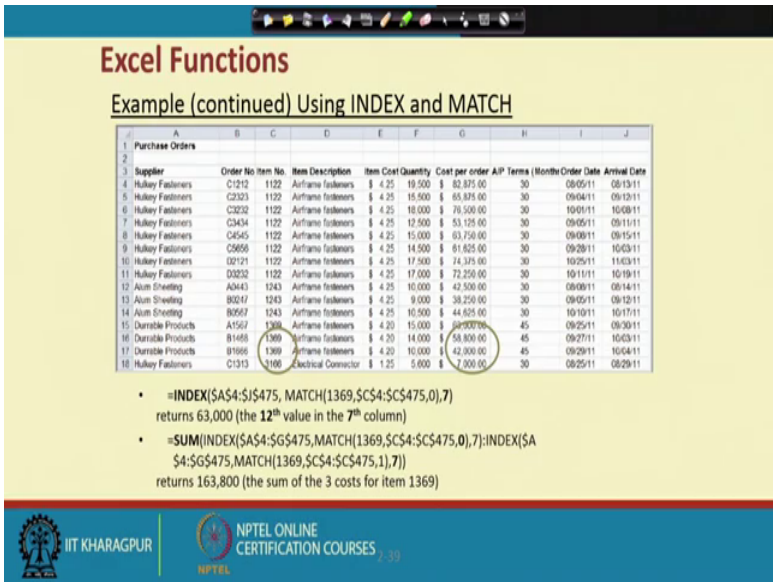

Requirement then index all these things are there just you know proof the idea is actually you must have a you know informations and put equal to signs and give the connection about a particular you know operation after putting the particular operation automatically it will give you the exact you know the particular requirement or the value. So, that you know you can you know get some kind of insights as for your you know requirement and then solve as per your you know need.

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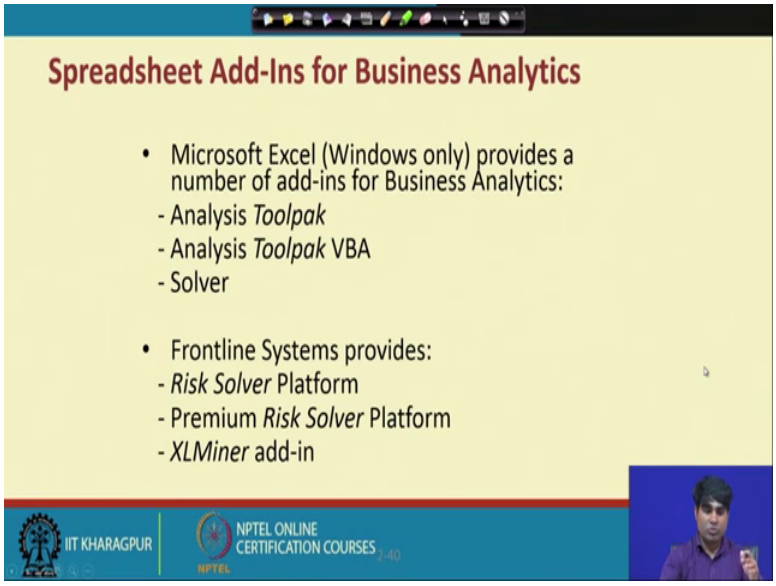

So, this is what about you know this spreadsheet all you know spreadsheets in excel sheet all about and that is for your you know business analytics requirement right it is. So, these are all various other kind of you know. So, we will in the later stage really get to know all these you know advanced kind of you know use in the excel sheet and that too once you know the basics and you know acquainted with the basic in the excel sheet.

So, this will help you lot to know the advanced you know kind of you know use and advanced requirement and that will help you lot again to solve you know some of the business decision problems and.

Thank you very much and have a nice time