Business Analysis for Engineers
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Lecture-14
Final Illustrative Example

A very good morning class, in the last class I provided the complete summary of all the sessions that we had on financial accounting starting from the need for financial accounting right up to the creation of the 3 important statements namely the income statement, the balance sheet and the cash flow. So, it was an overview which again rehydrated we refreshed all the accounting concepts, the fundamental equation that governs the financial accounting. And the various issue in terms of special accounting entries and so on.

And also assure that I will leave the last class with an illustrative example and leave it midway, so that you can complete the second half of the example. Now before I give the example for you to work I just want to set the context for this assignment, you see as I have already told the accounting concepts are uniformly understood in the same way as a result of which the entry that you make are the products of uniform understanding of these accounting concepts.

And the mode of entering these activities is the dual entry accounting principle which involves the debit and credit.

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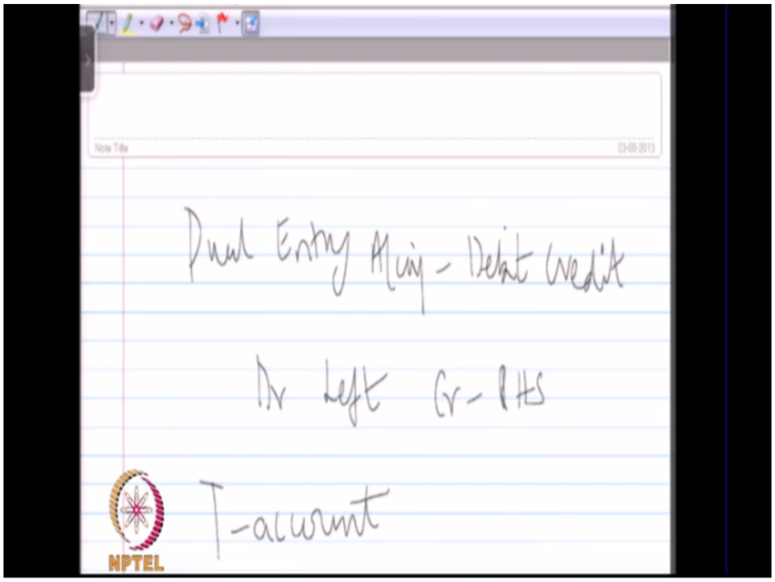

And I have already mention that in the double column presentation that we record these entries debit simply means that it is the left hand side and then credit simply means that it is the right hand side. And this is the simple meaning of debit and credit and we also saw how that the t accounts or the t accounting is a convenient tool to illustrates the effect of transactions of each account.

By transactions I mean the activities at happen in an entity on each account and account I mean the title of the nature of this activities it should could be cash, it could be inventory, it could be accounts receivable, assets, investments, sales anything. So, all of these are called accounts and that the tea account is a convenient tool for illustrating the effect of these transactions on each of these accounts. Now for example let me say if just decide to start with let us say some of these accounts which have a beginning balance.

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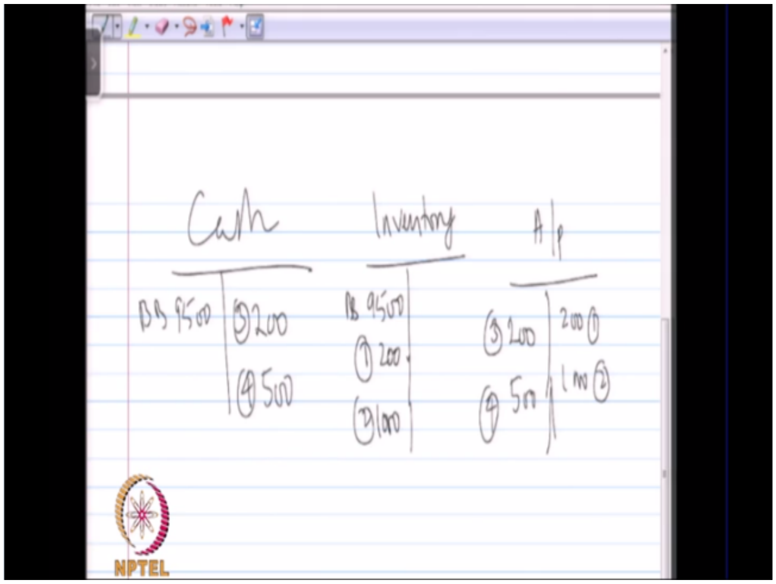

Cash, let us say it already has the beginning balance of 9,500 rupees and suppose I sorted of by buying inventory worth 200 rupees on account from a vendor on account from a vendor. So, my entry this is the t account and then the account title is inventory let us say the beginning balance I indicate BB as the beginning balance was 9,500 when we started off and now as I said I just what 200 rupees of inventory an account from the vendor and that is the first transaction I am making.

So, let me indicate that by transaction 1 as 200 and that since it was an account the dual entry that is the second entry will be the accounts payable in this case is 200, because it is on account. So, the same corresponding entry for this activity 1 is 200 and then let us say I buy again fresh inventory of 1000 worth 1000 and let us say this was again on account. So, I am just going to record this way.

And then the third activity was I am paying the first vendor whatever was the worth inventory that I purchase. So, which means I am paying him, so cash goes 300 and to that extend my account payable also reduces by 200 senses for the first invoice. And then let us say I am also paying salary to my labourers. So, the ways expenses let us say I am suppose to pay at the end of this month I am suppose to pay wages worth I am not yet paid but I am suppose to pay wages worth 500.

And then I decide no I need to I am go to pay them immediately. So, what was accounts payable before gets reduced by 500 this is the fourth transaction and that I pay them today is 500. Now this is just an indication of how the different transactions are recorded under each of the accounting heads and then each of them needs to be captured in the financial statements that we saw before.

But if you leave all of these just like that it is very difficult for us to interpret the nature of these transactions. And that is why all these loose accounts under these headings are aggregated and presented under common headings namely the assets or they could be the liabilities or they could be owner's equity. So, these are broad headings under which each of these accounts will fall. And the criteria for each of the accounts to be an asset account or a liability account or an owner's equity account differs.

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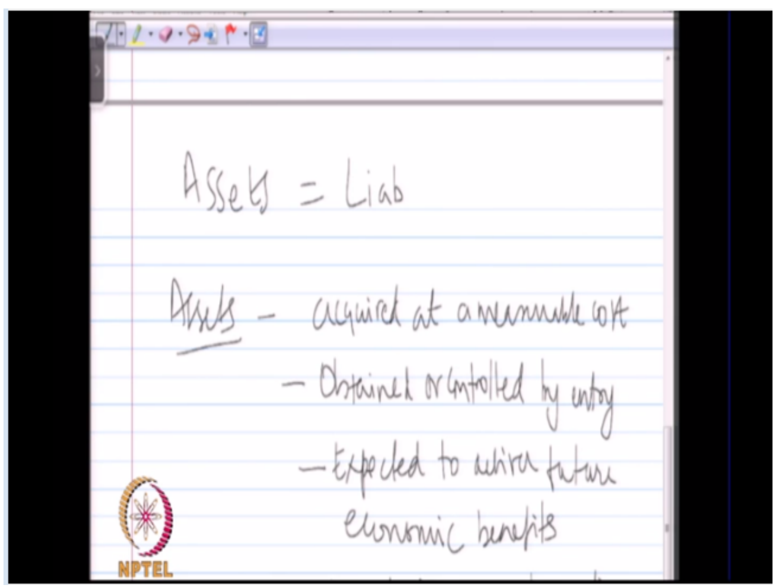

So, but broadly it will be the assets is equal to liabilities and actually liabilities include the owner's equity. Now for an account to be categorise under an asset, we have certain broad criteria very generalised that assets means that it has to be acquire at a measurable cost we spend enough time on this just revisiting this concept, because these are all very important concepts before we actually start recording these transactions.

And that these assets are obtained or controlled by the entity. And why it is an asset, because it is expected to deliver future economic benefits or it could also be the result of a past transaction or an event.

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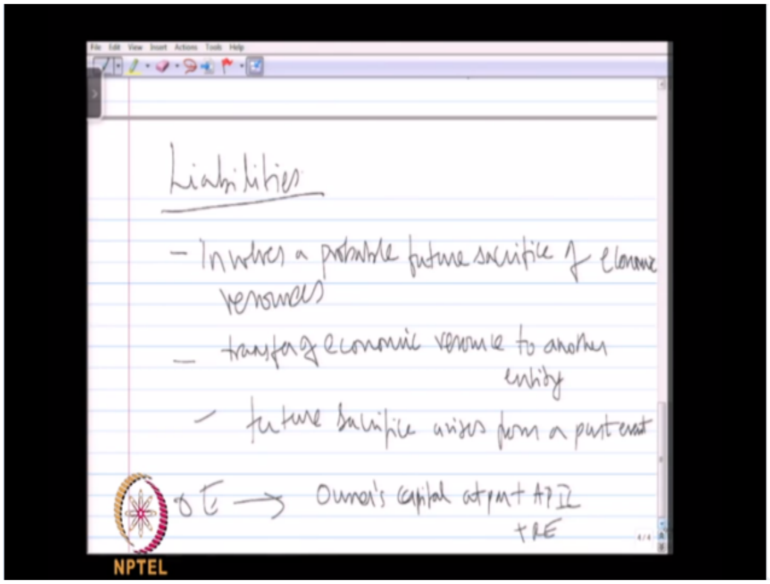

Likewise liabilities means that an account the nature of an account the liability account is in such a way that it involves a probable future sacrifice of economic resources or that there could be a complete transfer for the economic resource to another entity, transfer of economic resource to another entity or just as join assets the future sacrifice arises from a past transaction, pat event or a transaction.

Now if you think about these criteria it will help you to decide how to treat different business events whether you need to treat them as an expense or whether you need to capitalise it as an asset whether certain activities or revenues are not lost contingency or not. So, show the criteria of accounts to be treated as assets and liabilities if you are able to understand properly then you will be able to decide how to treat each of these business events.

Likewise owner's equity, owner's equity as we saw at great length it comprises the owner's capital at par+additional paid in capital and then the accumulated retained unused. Now when you actually get into recording these transactions under accounts heads, you can create as many account head as possible. But by and large there should be some uniform account heads which characterize certain activities to fall under these account heads.

And let see what are all the typical the most commonly used accounting heads. We saw them when we did the balance sheet, income statement and the example that we did before and link it with the fundamental equation that I had explained already.

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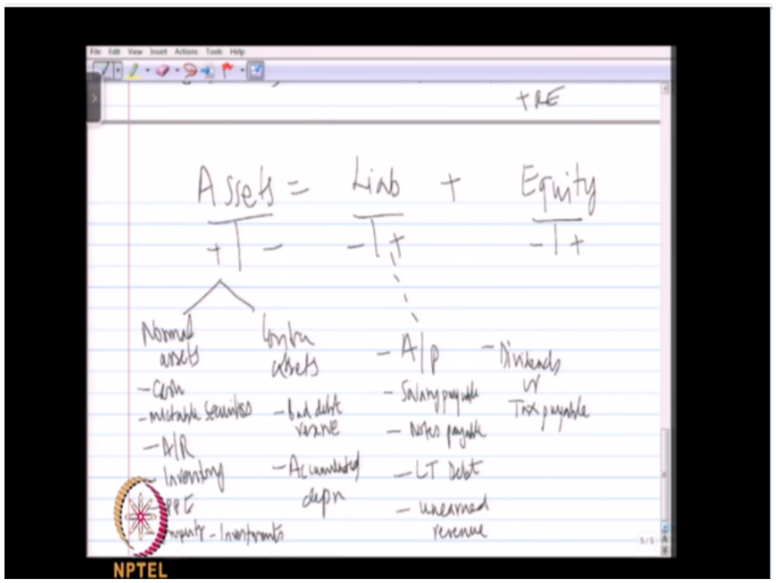

That assets is equal to liabilities+owner's equity and when we saw how these things operate. It is better to also categorise some of the accounting heads under each of these, so that you can quickly revisit to know whether it is an asset or a liability or a owner's equity. So, if you look at assets broadly you will have normal assets which could be are cash, marketable securities, accounts receivable, inventory.

I am just trying to list out all possible commonly used account heads under the normal asset category, prepaid expenses, your property, equipment these are long term assets or investments. Likewise you might also have contra assets when we talked about the special entries, the closing entries could be a bad debt, reserve, accumulated depreciation and so forth. Likewise your most commonly used liability accounts will be your accounts payable, salary payable, notes payable.

I am talking about current liabilities, short term liabilities or long term debt, unearned revenue then it could be even your dividends or tax payable these are the commonly used accounting heads liabilities category.

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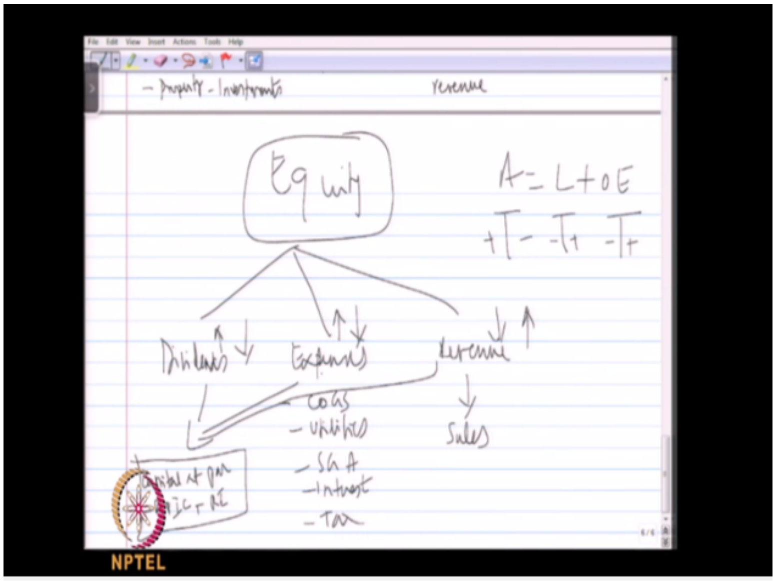

And in equity you will have dividends let us say expenses and revenue which means we are linking it with the retained earnings. Expenses could be your cost of goods sold, utilities, selling general, administrative then your interest, tax, the revenue is a simple sales and then dividends. Now each of this is linked with your owner's equity with starts with a capital at par then additional paid in capital+retained retained earnings.

So, that is why in our equation we had it this way anything that increases owner's equity must be on the credit side and that reduces is on the debit side. So, this basically tells you that these are all the commonly occurring accounting heads which either fall under the assets category or liabilities category or the owner's equity category and by and large many of the transactions or events that happen will fall under any of these accounting heads.

And of course I am not limiting accounting heads only to these are the most generally used accounting heads. You can create as many accounting heads and t accounts as much as you want to the extent to which you need to get the micro level of accounting information. But by and large these are commonly used accounting heads. Now just as these are commonly used accounting heads.

I thought I will also give you some transactions which are the standard set of activities that you will encounter in any normally happening business activity, any going concern will have a common set of activities which happen on a day today basis, some type of events. So, you need to understand actually what is going from an accounting perspective.

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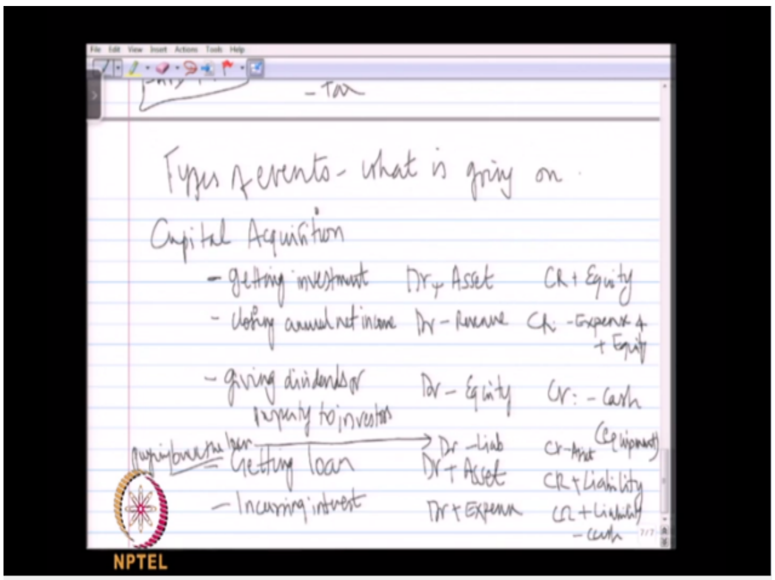

So, some type of events will give you an understanding of what is actually going on. Let us say I am talking about capital acquisition, let us say the first thing is getting investment. So, getting investments means raising capital one form of getting investment is raising capital which means you debit asset let us say you get cash and then it was from the owner equity. So, at the credit corresponding credit entry will be equity.

Or let us say you are closing annual net income then it is debit-revenue, credit all expense and increase in equity or let us say one of your activity was giving dividends or property to investors. Then this is reduction in equity and to that extend whatever is the dividend amount you pay reduces the cash or you give property then it could also be that reduction in the equipment or let us say you are obtaining bank loan getting loan from the bank.

And which means you are getting cash and by way of that your increasing your liability and for this loan you are incurring in trust. So, the interest expense and credit+liability or if you are actually paying cash then it is–cash or if you are paying back the loan is instead of getting you are paying back the loan it becomes the reverse for paying back the loan then your liability reduces and your asset in this case cash reduces.

So, these are some of the often occurring capital acquisition and also in this case repayment event, so you will understand what is going on if you are able to look at this map. So, that let us say for example getting loan means it increases the asset cash and then also increases your liability.

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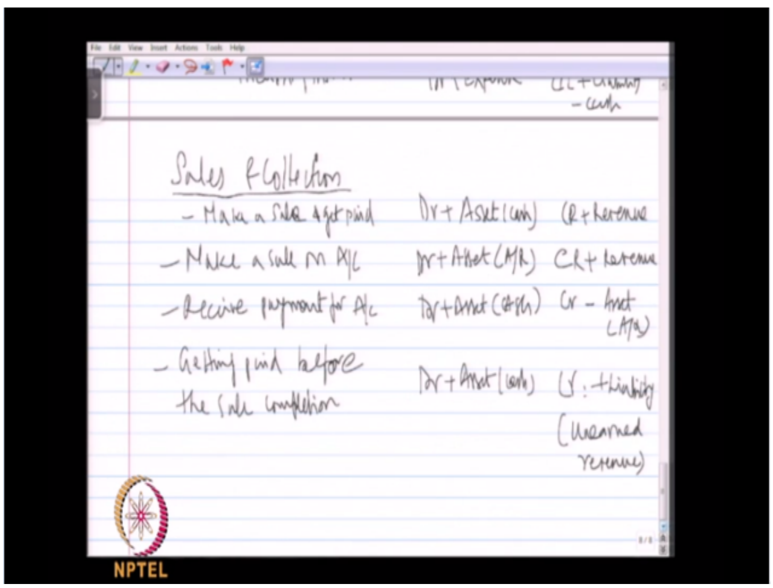

And every entity has sales and collection activities, so if you look at sales and collection just us we saw commonly occurring events in capital acquisition and repayment. Let us say you make a sale and get paid for that also, there is a difference between just making a sale and then getting paid for it. So, if you make a sale and get paid you are getting paid, so you are receiving cash, this case cash.

And since you are making a sale it is the revenue account that gets impacted because of it. Let us say you make a sale on an account which means you made the sale but you are not receiving cash for it. But still it is an asset creating entity expect that instead of cash it is an accounts receivable and since you made a sale it is a revenue generating activity and you receive payment for the account.

Then you receive cash, because your accounts receivable for the accounts receivable you receive cash and then to that extend your accounts receivable reduces. There could also be a possibility where you are getting paid before the sale completion. Now here you record this as cash and the corresponding entry will be an increase in your liability which usually we call it as unearned revenue.

Because it is a liability, a service or product that you are not delivered but recognise as a sale and already collected cash for it. So, these are some of the typically occurring sales and collection activities.

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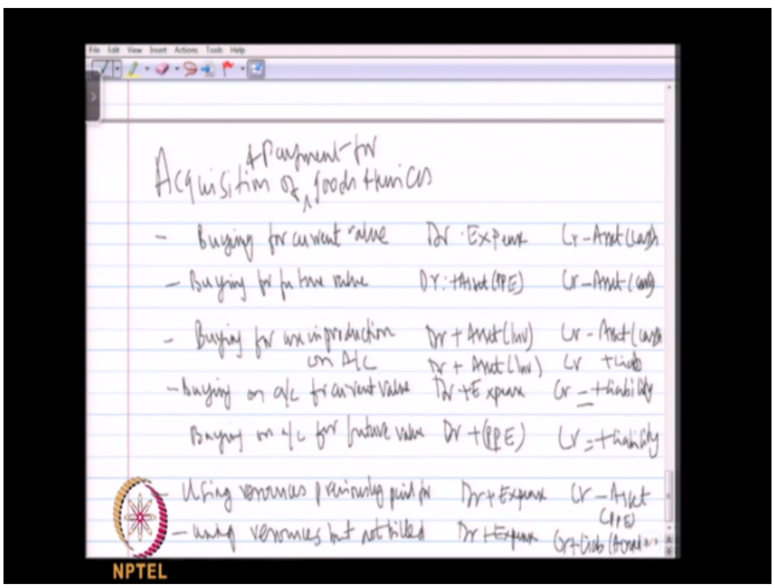

Likewise you will also have some commonly acquiring occurring acquisition of goods and services acquisition or payment for goods and services, acquisition of and payment of goods and services. Now suppose you are buying some good for current value you buying service for some current value. So, you debited whatever is the service you are buying you debit the expense and since you are paying in cash it goes.

Now suppose you buy the same service for future value just as we had the unearned revenue in the previous case. Suppose you the service for a future value then it gets recorded as an asset remember when we gave the account head there was something called prepaid expense, it remains as an asset as long as you have been used it and that fact that you have already bought it for cash will be recorded expect that it is going to deliver the value only in the future.

Now another possible case could be that you are buying some goods for use in production that case it will inventory that will usually buy raw material and then since we bought it asset cash. Buying on account for current value in still we treated as an expense but still we have not paid it because it is an account. The same if you are buying on account for future value same thing debit but it will be prepaid expense, credit it will be liability.

Now the same thing buying for use and production if I am going to buy an account it is going to be same thing the debit asset expect that here it that will be a liability. If the same thing buying for use in production is on account it results an inventory expect that instead of cash it becomes a liability. Now suppose I am using the resources previously paid for, suppose I use resources previously paid for then that resource the value of the resource gets expensed.

And to that extend what was an asset as a prepaid expense before to that extends gets reduced-asset and the asset was prepaid expense in the previous case or also could be using resources but not yet billed. I have already use the resources but I am not being billed for that still I need to treat is as an expense and it will become a liability account usually we call that as accrued expenses.

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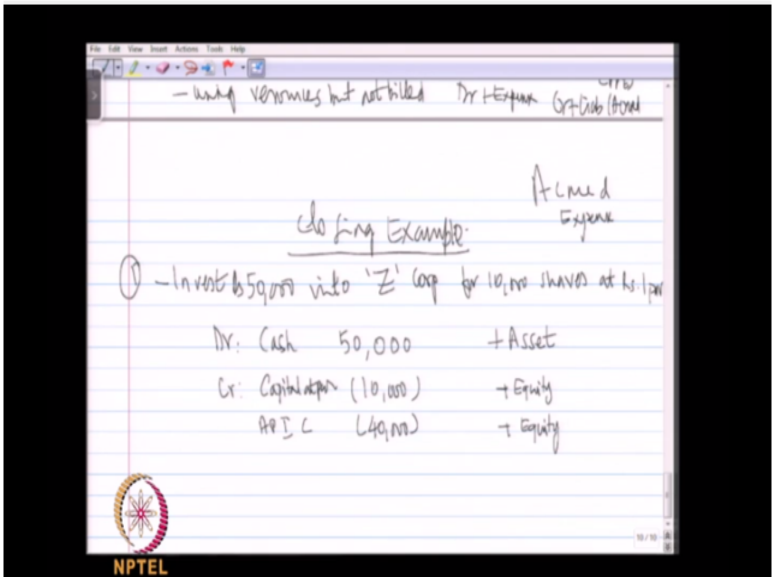

Accrued expense typically when you resources for which you are not yet billed, but you immediately treated as an expense and then it increases your liability part and once you are build to that extend the liability reduces and whatever amount that you have paid gets into cash. Now these are again not just the exhaustive list of accounting events not the exhaustive list of transactions that will happen in a firm by and large this can represent some of the most commonly occurring events in any entity.

So, if you have this knowledge that there is something called these accounting principles and that you need to record these transactions on the left hand side, right hand side under account heads t accounts and then you will have to aggregate all these t accounts identical t accounts particular accounting head cash, inventory, accounts receivable whatever the cash maybe and put them under each of the categories could be an asset category, liability category or an owner's equity category.

And if you are able to do all of this then you will create an balance sheet and income statement. So, what I will do is to give you some practice accounting entries as a closing example and leave it midway as a set before and leave you to finish the balance sheet complete the balance sheet and income statement. So, I will just give the closing example, now what I have done till now is just to give you some of the standard accounting heads some of the standard activities to understand what typically happens in a firm.

Now this I will qualify with some examples of what actually happens in a firm and we will record them as t accounts and leave it at one point, so that you can complete create the trail balance the balance sheet and income statement. So, what I will be doing is to be giving some activity then you will understand what happened because of this activity and what entry you are going to make for this particular activity.

Now let us I begin with for example where I invest 50,000 rupees, I invest rupees 50,000 into a company called let us say I call it 'Z 'corporation. I invest 50,000 rupees and how did I invest this let us say I issued 10,000 shares whose par value was rupees 1 at rupee 1 par. So, this is the first transaction, so what we do we need to understand what this transaction is it means that the owner as invested 50,000 in the form of 10,000 shares whose par value is 1.

So, it is debit cash 50,000 I am not going to leave it as t account because I would want the class to do it that way. But I will just explain the transaction from the debit, credit perspective and record it in this manner. So, that you can capture them in the form of a t account why did I do that because this cost and increase in the asset, so what would be the corresponding credit entry it will be the capital or the owner's equity at par.

Because it was only 10,000 at par this causes an increase in equity and something called the additional paid in capital which in this case is 40,000. This is also one form of recording the events into a single column where your debit will be positive your credit entries will be recorded as negative or as shown within a parenthesis this is also an accepted form. So, what I am doing in this class is to also give you the second form of entering the transactions into debits credits in a single column.

And you can transfer is into our typical t account debit on left hand and credit on right and then go forward.

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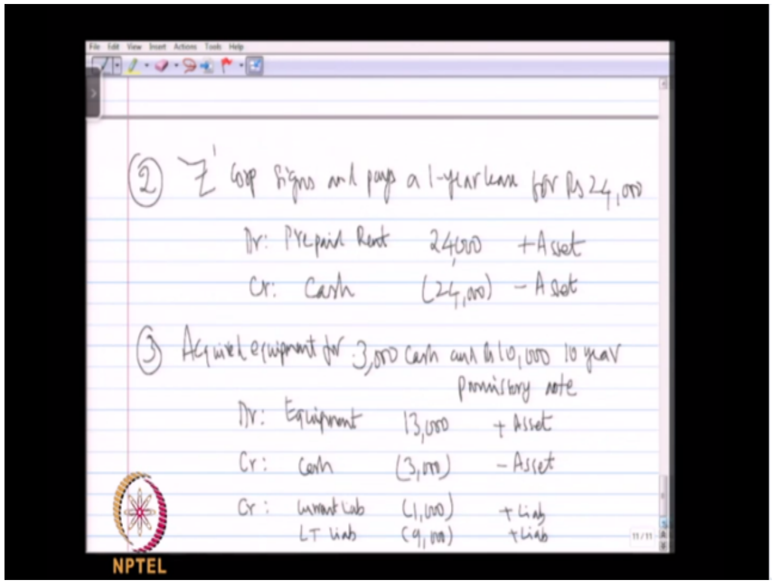

Now let us say the second entry was this Z corporation, signs and pays a 1 year lease for rupees 24,000 it pays. So, it means cash as gone out for what it is a 1 year lease, so you can treat that as a prepaid rent in this case is an asset whose value is 24,000 increase in asset in that way it is debit, credit since I have paid it cash 24,000 since cash goes out it is a asset this is 2 quickly record some of the transactions. Let us say it is acquired equipment for 3,000 rupees cash.

And 10,000 rupees, 10 year promissory note which means a commitment that will pay 10,000 over a 10 year period at equal instalments and that is all the equipment was purchased. So, the value of the equipment purchased is 10,000+3,000 which is 13,000 and it is an assets so debit equipment 13,000, because created in increase in the asset. Now that will be more than 1 credit entries the first one is cash how much we paid 3,000.

And the other credit entry could be split into 2 forms one non-current and the other was current liability in this case the current liability or the loan payable was 1000 and long term liability which is non-current is another 9,000. The moment this activity happens it does increase may liabilities, current liabilities are notes payable as we call it or long term liabilities loans payable of 9,000.

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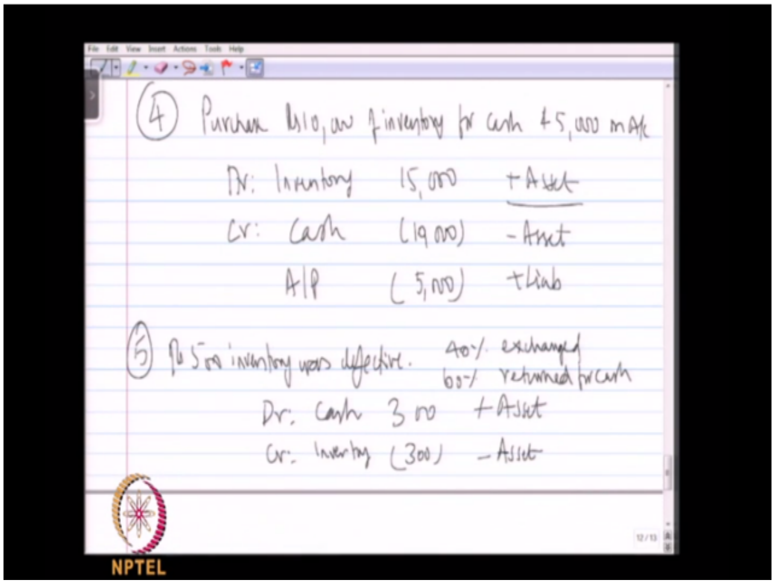

Let us say after this the same firm purchases rupees 10,000 of inventory for cash and 5,000 on account. So, inventory is the accounting head and the value is 15,000 increased in asset, and here again a typical case where you will have more than 1 entries on the credit side the first one that it has purchase 10,000 worth of inventory paying cash, cash as gone out +liability here is the remaining 5,000 accounts payable.

See the I am trying to as much as possible give you different examples that can capture different ways of how these accounting transactions get recorded. In this case you would see in the same transaction the debit side creates an increase in the asset, the credit side creates a decrease in an asset as well as an increase in a liability. So, you will find such different types of combinations based on the type of accounting activities based on the type of transactions that happen.

Now a small twist let us say we the inventory that was purchased it was found that inventory costing worth 500 rupees was discovered to be defective. So, 5 rupees 500 inventory was defective and whoever supplied the inventory agrees to exchange 40% of the defective inventory for new inventory and refund 60% with cash. So, how will this affect the accounting transaction 500 rupees of inventory was found to be defective.

And the vendor agrees to exchange 40% or 200 with fresh inventory and the remaining he repays as it as cash. So, the inventory exchange of this 200 does not affect the inventory balance, because what went out was again supplied the 200 does not really affect the accounting balance for inventory. But what needs to be recorded in this case is the remaining 300 for which cash was returned. So, you will have debit cash 300 since it is return cost an increase in your asset.

And the inventory that you had you have also returned it causing a decrease in asset. So, 500 inventory was as I said 40% was exchange and 60% return for cash, so you will record it this way. Now let us say we start selling, the selling process begins I will also number the transaction since we been numbering each of the transaction this is 5, 6.

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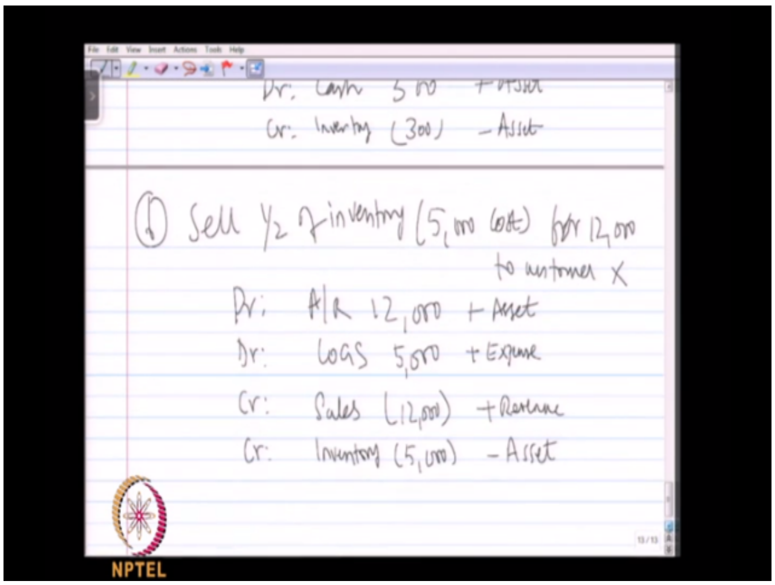

Let us say I sell half of the inventory when the we purchased sell half of inventory 5,000 cost for 12,000 to customer X. So, I sell half of inventory in this case 5,000 worth the cost of the inventory 5,000 for 12,000 to some customer X. So, we will begin with debit, so since the sale is made an account we will record it as debit first accounts receivable the sale value is 12,000 it is an increase in asset.

And another debit entry we will include here itself is the cost of goods sold is the inventory value that go sold 5,000, cost of goods sold is an expense activity. And then the corresponding credit will be sales which is 12,000 since it is credit I am putting it within parenthesis negative would does not mean the sales is negative it is on the credit side in fact it is increasing the owner's equity any increase in revenue increases owner's equity. And the cost of goods sold value, the value of the inventory gets reduced to that extend.

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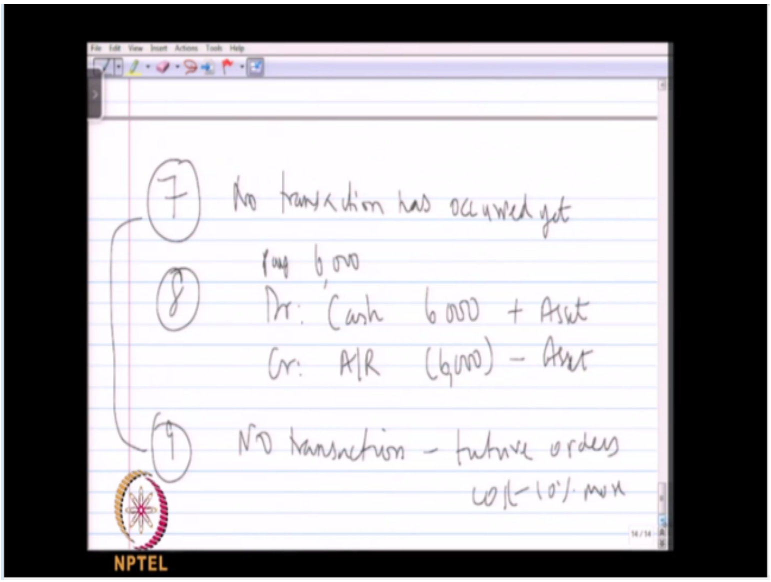

So, let us say the next activity was the same customer X tells the Z corporation that they would be willing to buy the rest of the inventory that is available in the company in the next month, so how do we record this transaction. Now in this case it is just an expression of willingness to buy the inventory next month there is no transaction that is occurred, no transaction is occurred.

So, we do not record assurances or a willingness to buy the inventory next month, so that is no transaction that is recorded it is just an information and that has no accounting value. But however when you make sales forecast and other things which is beyond this hope of financial accounting you can probably take this information for the purpose sales forecast but for the purpose of an accounting this is an innocuous information.

And then later the customer decides to pay some part of the accounts receivable let us say he decides to pay 6,000 rupees. So, you receive 6,000 rupees cash and then to that extend your account receivable reduces it is no longer your asset. Now like 7 let us this Z companies vendor comes and says that in future if you are going to buy inventory from me it is going to cost 10% more again this is no transaction.

Because it is just an information that future orders cost 10% more this is just an information which as no accounting relevance because it has not happened yet. Now let us say I am the owner of this corporation Z corporation.

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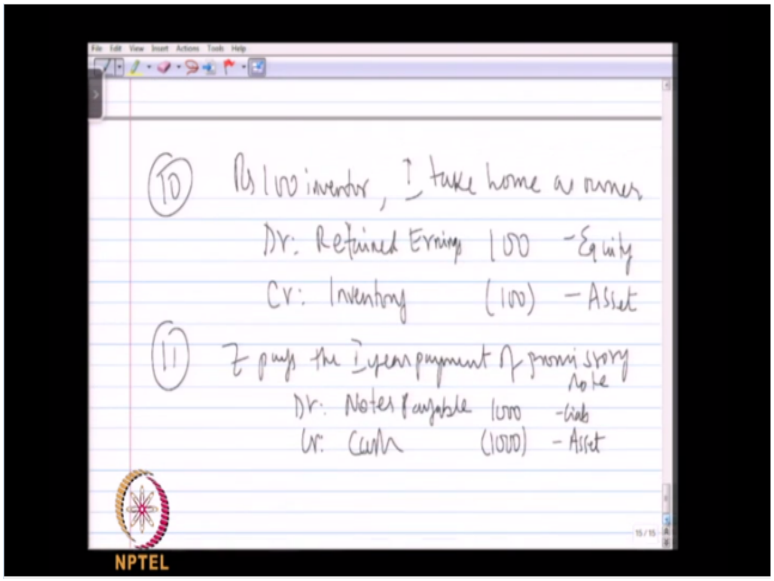

And that as a owner I take home 100 rupees inventory rupees 100 inventory I take home, because I am the owner as owner. We know this is an entity concept, so even this needs to be recorded as an accounting activity. Now how do I record it since this is a owner to that extend my retained earnings has to be reduced because I have taken it. So, retain earnings equity reduction in equity is debit and what did I take inventory right.

So, inventory to that extend will be reduced, notice here–equity-asset debit, credit both minus we are trust trying to see different possible combination and that is why I am giving you different examples for each of the transaction. Now let us say Z pays the first year payment of the promissory note, the loan. So, to that extend my notes payable or the current liabilities that we recorded before gets reduced. And the corresponding credit entry will be I have paid cash, so cash 1000-asset here again notice–liability-asset.

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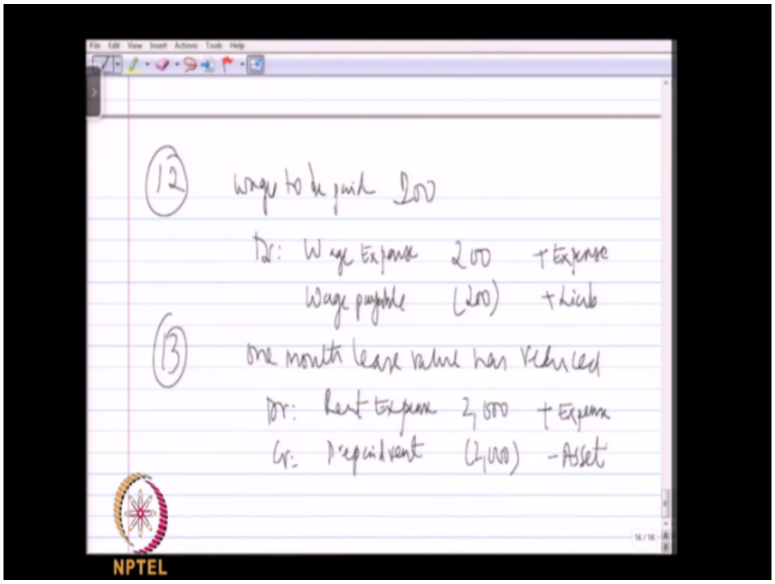

Now the end of the month the corporation, the company is suppose to pay it is employees salary and let us say the amount of salary that it need to pays rupees 200 wages to be paid 200. But let us say we are going to at the end of the month I want to actually create this balance sheet and income statement, but I am not paid I am recording this as an expense for the purpose of creating an income statement, because this is an expense that I want to record.

Because this I am reasonably certain and it is possible that this will happen the next month and the fact that I am not paid but I am going to pay definitely next month wages payable increases may liabilities 200 anyway I will paying it next month. So, what happens when I pay next month to that extend my liability it gets reduced and cash gets reduced by 200. Now let us say after this 1 month the lease, the building that we rented.

So, one month lease value has reduced, so what we will we do at the end of the month we treat that as rent expense and how much was that it was 2000, because it is a 24,000 lease. So, we record that as an expense and remember we record it as prepaid rent which was an asset at the beginning and in the end of the month that value gets reduced by 2,000.

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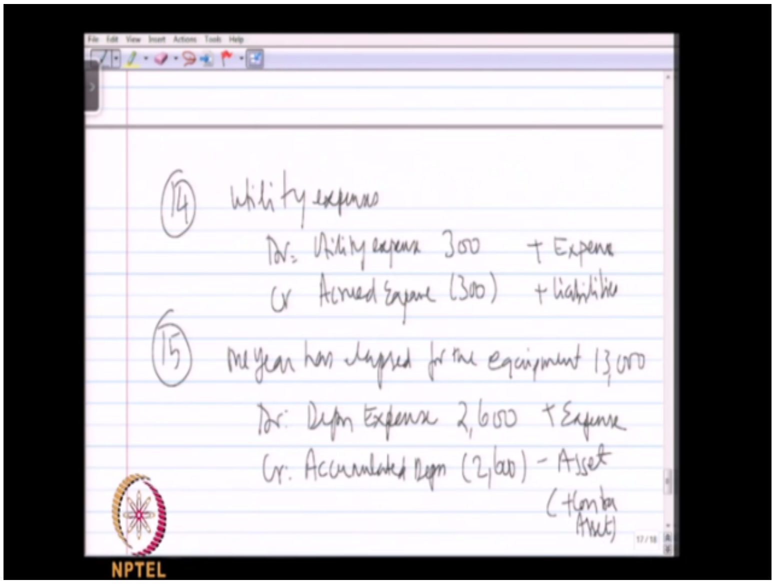

Then later I incur some utility expenses electricity, water and so forth. These things I will quickly go through because these are all standard accounting entries utility expense 300 and let us say I have I am not paid it I am screwing this expenses accrued expense 300. So, liability this one is an expense, suppose I paid it then again the credit will be cash 3000-asset. But I am just trying to give you different combinations.

Now let us say one year as elapsed now in the equipment that we purchase whose life is 5 years, so the 13,000 rupee worth equipment that we purchase is now at the end of 1 year worth less than 13,000. So, how do we record that let us say 1 year as elapsed for the equipment whose value was 13,000 right. So that one we treated as a depreciation expense. And the credit would be accumulated depreciation remember when we categorised assets liabilities and owner's equity I had put accumulated depreciation under the asset category as a contra asset.

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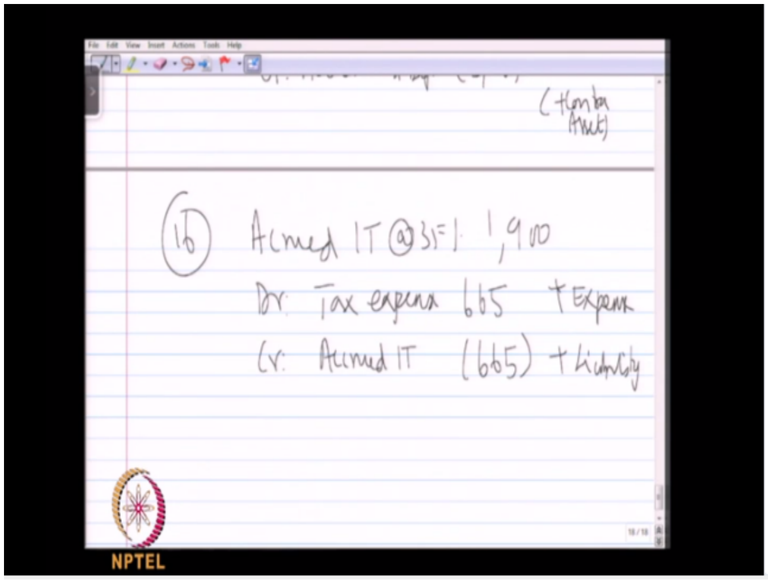

Let us say finally the accrued income tax let us say tax rate is 35% and your net income after all expenses was 1900 rupees then is accrued not yet paid. But you are treating it is an expense, because a principle of conservatism 665 is an expense and the fact that you still not yet paid, but you will paying it you can call it as an income tax payable or you call it as accrued income tax it is 665 you can also use the word payable as well.

So, these are let us assume these are the set of transactions that have happened and I would like you to prepare a trail balance and income statement and balance sheet from this transactions these set of transactions. And I will leave the class with some pointers one is that one tenth of the promissory note has now become current due within 12 months. So, you need to record that transaction and also try to zero out the income accounts to the retained earnings.

So what do I mean by that we know that a sale of 12,000 has happen, so I am zeroing out the income accounts to the retained earnings, so I am going to also identify all the cost of goods sold and expenses in this case the cost of goods sold was 5000 then one month rent was 2000 the utility expense we record it as 300, wage 200, depreciation expense 2,600 is what we recorded after 1 year, tax 665 and then you can calculate the retained earnings with this.

So, what I would want the class to do is with this transactions though from for the equipment I said 1 year as elapsed, you can for the purpose of closing all these entries. Let us say at the end of 1 month I want to look at the income statement and balance sheet and these are the activities it have happened in the last one month. And these activities i have recorded in a single column fashion where debit is positive and credit is negative that is also one way of recording.

But you please recording them as t accounts, number each of the accounting heads, aggregate them and create a trail balance make sure that your entries are correct and then create your own balance sheet and income statement. So, that would probably be a good assignment for you to understand the entire concepts the way in which accounting entries are recorded and the way in which you create a trial balance a balance sheet and then income statement.

So, with this I will conclude all the sessions on financial accounting with this illustrative example which I have just adjust partly completed and then leaving the remaining part for you to complete. And from the next class onwards as I had assured we will get into management accounting. So, I encourage you to finish this assignment that I am leaving midway and next class we will start management accounting thank you.