Business Analysis for Engineers
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Lecture-7
Introduction to Income Statement & Double Entry

Good morning class, in the last class we had covered the 11 concepts provide the framework on which accounting principle exists, and then we also understood how a balance sheet will look like and before I start explaining the double entry bookkeeping, you should also know various ingredients of an income statement. The class already knows that an income statement is a flow statement for a period of time used to measure the financial performance of an entity.

Just as explain that a balance sheet you will have asset and liabilities, current assets, fixed assets, current liabilities, long term liabilities and that the balance sheet is categorized under different heads and identical sets will fall under each of this categories. Likewise an income statement is a flow statement which will begin with the net sales, the sales revenue of an entity.

And then you will have to remove the cost of making the sales, the expenses incurred from the sales revenue from the sales revenue recognised to arrive at the net income of an entity, and only then you will be able to make an estimate how profitable that this sales revenue activities has been, so this is the purpose for which we create an income statement. Now just as balance sheet we saw that it was for a firm that it was as on particular date likewise the income statement will also be for particular firm.

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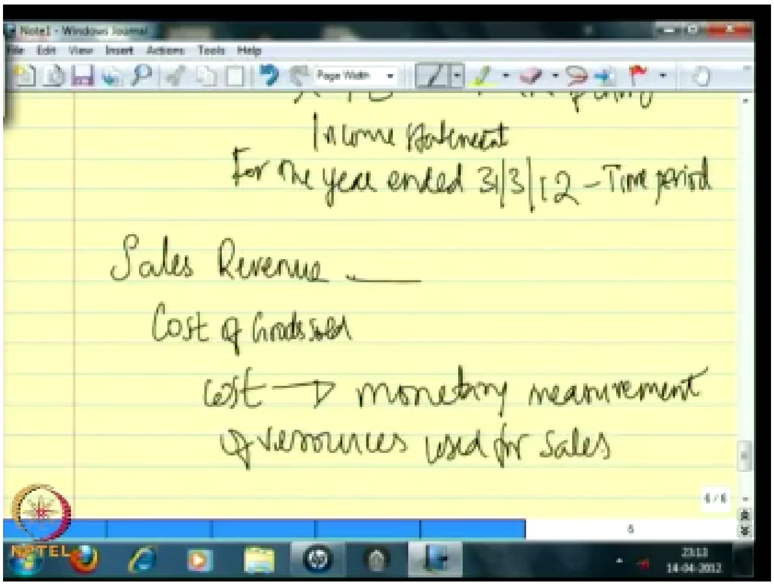

So that it adhere to the principle of the entity concept, so this is the name of the entity and that you will write that this is an income statement for the, year ended let us say 31/03/2012, so this gives you the time period. Now it begins with this sales revenue, the total sales revenue from beginning of the accounting period till the end of the accounting period and as I told before that generally the accounting period is assumed to be 1 years.

So let us say the first able to goes 11-31/03/2012 , they aggregate of all the sales just recorded as your sales revenue, so what it will be the total voice amount of all the product and services that have been sold or delivered by this entity during this particular period. And usually does not include some statutory taxes like a tax, excise tax. But it usually include these types of statutory access that is selected behalf of the government is not revenue to the entity usually it is ignored. So that is your sales revenue.

From the sales revenue you will have to detect what is call cost of good sold, what do I mean by cost of goods sold, the cost of goods or services that are being sold is called the cost of sale, would I mean by that, cost is the monetary measurement of the resources that have been used to the generate the revenue, let us say I consumed some level of inventory which got convert it into a finished goods which was sold for a particular price.

So the cost are in this case the economic resource the value of economic resource that got consumed before the sale was being made is the cost of good sold. Cost is the monitory measurement of resources used for sales and the aggregate of all the used for the sale is the cost of good sold.

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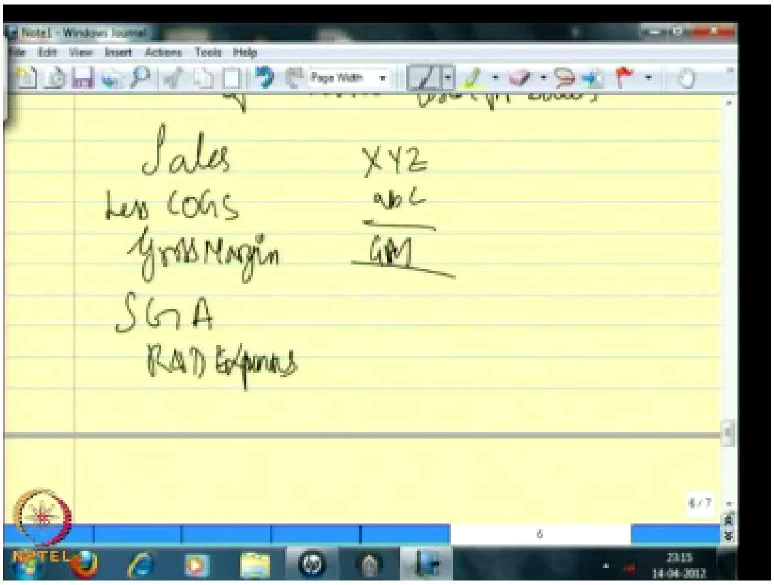

Now usually income statement begins with sales and then less cost of the sold, so x y z, a, b, c, this is call the cross matching, sometimes you will find an income statement of this time. There will be some entities in which there is something called cost of good sold every expenses, every expenses recorded in different headings wage expense, utility expense, rent expense, these are all the different heading and it is quite likely that you will see an income statement without the cost of goods sold.

Cost of goods sold will be there as long as we are able to match the economic resource of specific set of resources have been used directly to generate this revenue which can be easily identifiable to this particular revenue. So from sales you detect the cost of the sold that is your gross margin. After the gross margin expensive which is your let us say selling, general and administrative expenses usually it is called SGA.

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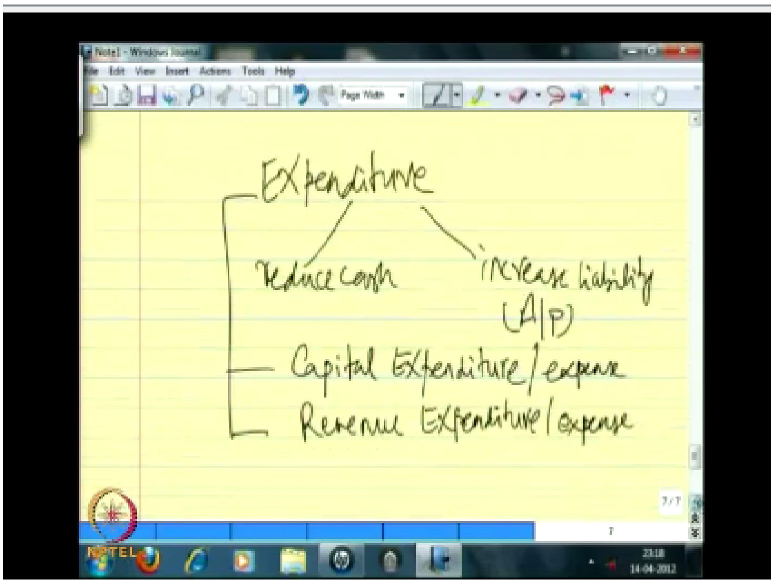

You have RND expenses, usually general administrative expenses typically you have utility, rent, wages and all that. So let me just pass here, so that you understand the different between the expense and expenditure. The purpose of the income statement is to call out from the revenue sir responsible for this revenue recognition and after doing that try to understand what the net income, the amount of money that is available for the firm after meeting all the commitments financial liabilities.

There is often this question how do I treat cash outflows, see revenue activities is an activity which generate cash or generate accounts receivable, the cash or source of cash inflow firm, expensive are activities that consume cash, cash moves outside out moves out of the firm. So does that mean that any activity that consumes cash is an expense that is the question. That question is relevant here because you need to understand whether activities that consume cash are to be reflected only in the income statement.

If income statement is the one that actually remove expenses from the revenue that is the definition. Now you have to look at the type of expenditure that is involved. It is easy to confuse and activity that consumes cash without creating asset with an activity that consumes cash that create asset, when you broadly defined expenditure as any activity that consumes cash. So expenditure will either reduce cash or increase liability.

How it increases liability you probably say I am going to pay cash later which means it increases accounts payable. Now this expenditure can be for two purposes capital expenditure or revenue expenditure or revenue expense.

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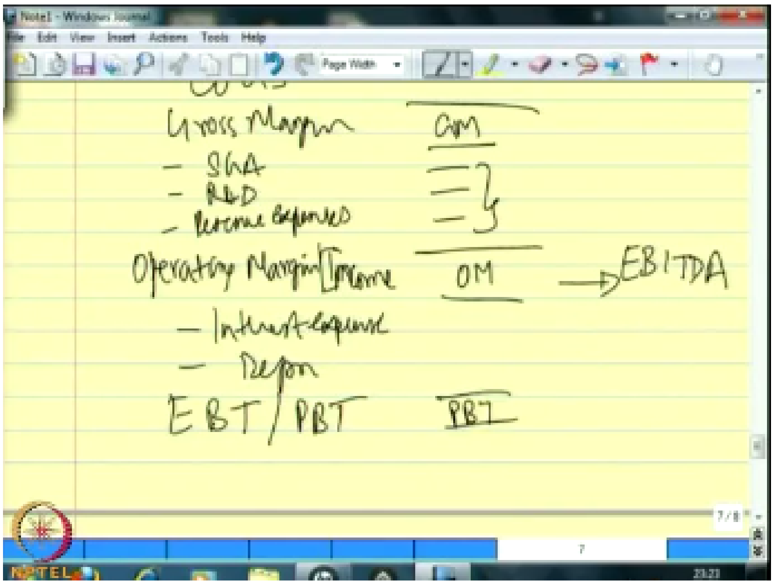

Now when do I say an expenditure is of capital it means that the amount has spent has been used to create an asset whose life is more than 1 year or the assets is going to be used for more than 1 year for the purpose of generating revenue. So your mind should immediately take you to your balance sheet where you find fixed assets and under that these capital expenditures are recorded at the end of every year where accounting period is depreciated.

And the new value of the capital asset gets recorded as a new book value of assets. So that expenditure find its place in the balance sheet. So you will not be recording it here in the income statement because it is a capital generating expenditure the life of the assets that is created out of this is more than a year and it so depreciated it finds its place in the balance sheet, contrast this with a revenue expense.

Example you go for let us say you entertain some of your customers there is a promotional event, the place of money that did not create any asset that is got expense for that particular year, you write it down as an expense that was created for the purpose of generating revenue which has not tangible value over period of time over 1 year when to promotional activity, incurred is expense paid it right away.

I paid rent for this building, I pay right away, I pay electricity bill for this utility I pay it right away, all these are expense remember these are consumed cash that not of capital nature hence we categories these expenses as revenue expenses and these expenses that will be recorded in your income statement. So your income as I said will have sales, cost of sold say minus cost of goods sold will be your gross margin, selling general RND expenses.

All your revenue expenses will be here, so your operating margin, your operating income will be your gross margin-all of this to the operating margin. Why is this operating margin, so I call this my operating income because from the sales revenue have detected all the expenses which are operating in nature what do I mean by that, they are not in other use which means these are expenses that are directly related to the day-to-day operations of the entity, utility, the rent, the RND, the selling expenses, marketing expenses, administrative expense.

They are operating not financial in nature, now these are operating expenses is that something call non operating expenses, yes there are certain expenses which are called non operating expenses which means they are not concern with the day-to-day operations of the firm but very much essential for the firm. This is also in some business conversations you got come across this terminology call EBITDA which means earnings before interest, tax, depreciation and amortization.

So after this you will have interest expense depreciation which is the cost of using the asset is an expenses and the extent to which you use the asset, the extent to which hence it is depreciated is the depreciation expense that is the charge of using this asset during this period. So this-this you will have your earning before tax are also called profit before tax PBT.

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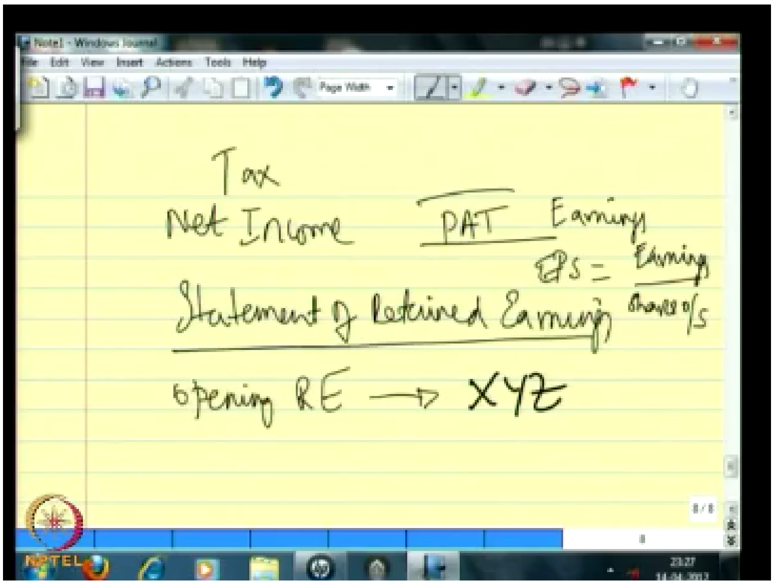

After this you will have your tax after you pay your tax your net income sometime is called profit after tax. So this is your income statement, it starts with the total sales revenue-cost of goods sold which is your gross margin from that you remove all your selling general administration and RND expenses. You will arrive at your earnings before interest, tax, depreciation and amortization and other words it called EBITDA or operating income.

From that you remove your interest expense interest expense is the cost of financing, the amount that you pay so banks interest and every assets that depreciated which means there is a chart, there is an expense using asset, after that you get your earnings before tax, the pay of tax and the net income is income that available to the firm after it meet all its liabilities that is the expenses liabilities to the banks, liabilities to the government income of tax, this is net income that is available to the firm which means to the shareholders.

An income statement stops with this, there is also something the statement of retained earnings. Now what is this mean from this income statement you know this is the net income, net earnings, this is also called net earnings. As I told you this is the total that is available to be given to the shareholders the owners of the firm, assume that there are 1 million shares outstanding you would often hear this terminology call EPS.

EPS is a earning for share should be your total earning/shares outstanding, typically the income statement will stop with this. The statement of retained earnings goes one step further when we saw the balance sheet we saw that on the liabilities with owner's equity side and in the owner's equity portion, in that after the paid in capital and additional paid in capital you had something called retained earnings.

And I told you that it is the total net income-the total dividend that have been triangle this point of time is retained earnings and that gets to the balance sheet, so when you have to prepare a statement of retained earnings where do we start we start with the opening retain earning for this particular year that you can get from the balance sheet of the previous year, let us say it is some x, y, z.

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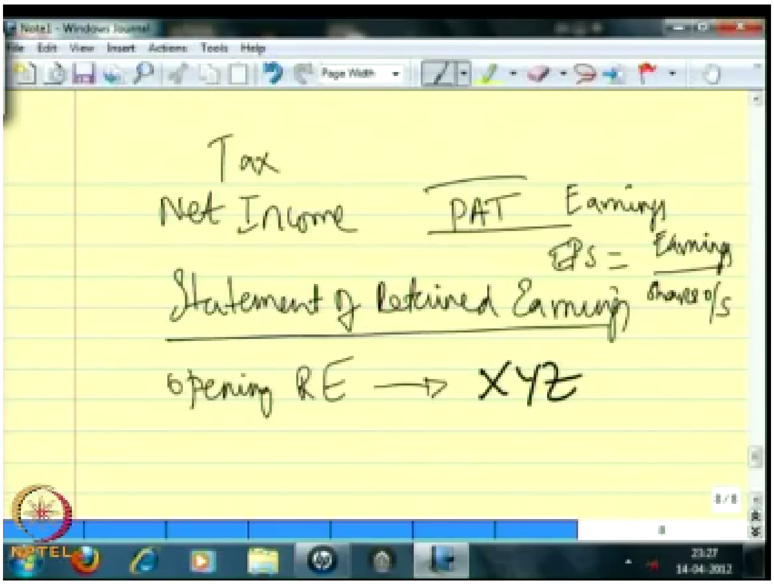

Then that is opening retail, now you know this year you had total net income or some amount. So total net income is a, b, company. Now this net income is the amount of money that is available to the distributed to the shareholders. You have seen some annual reports some AGMs, in the central board meeting they will announce that I am going to disburse dividend of 10%, 20%, 50% which means 10% of the total net income, 50% of the total net income.

So it is distributed dividend, how much you will get as dividend income depends on balance sheet of the previous year let status show some xyz ok then that is the opening retainers, now you know this year you had total net income of some amount, so total net income is a, b, company So this net income is the amount of money that is available to be distributed to the shareholders.

You have seen some annual reports some AGMs in the central board meeting they announce that I am going to disburse dividend of 10%, 20%, 50% which means 10% of the total net income 50% of the total net income is going to distributor dividend. How much you will get as dividend income depends on how much how many shares of the particular firm you hold, so from that you detect the dividends.

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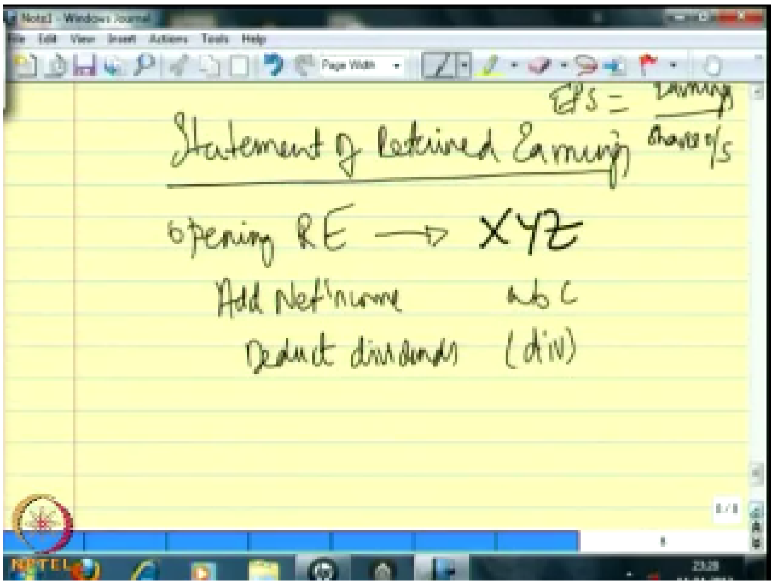

So let us say that dividend, so this will give retained earnings at the end of year.

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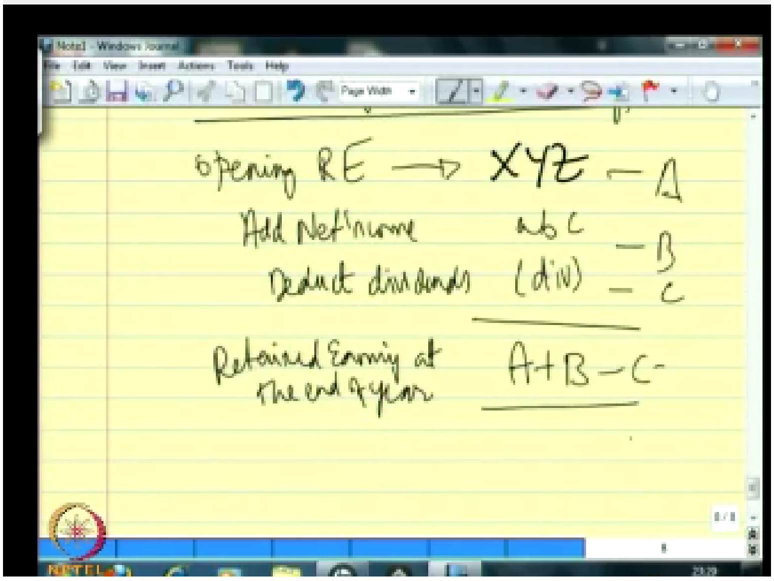

So A+B-C, now it is this retained earnings figure which will find its place in the balance sheet.

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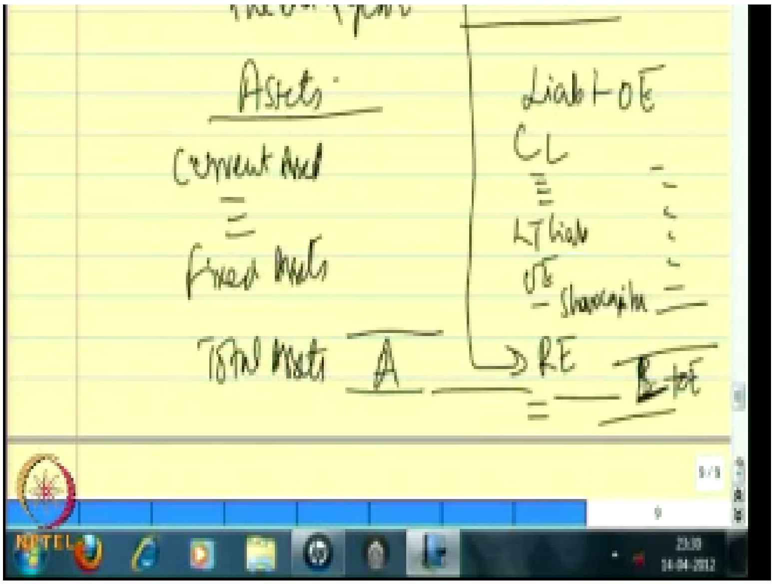

Your balance sheet will look like this assets liabilities+owner's equity, you will have current assets, fixed assets, all of depreciation total assets, net total assets, then liabilities will have current liabilities, long term liabilities any known as equity you will have share capital. So all this will be there, and then this retained earnings will come and sit here. And after this you will have B total liabilities, both of this will be equal.

This retain earning will form a part of your balance, so looking at this you can say that you are income statement in a way is subordinate your balance sheet is because from the income statement you calculated your net income, from the net income you remove your dividends, you reduce the dividend and dispose the shareholders, that from that you calculate the total retained earnings.

And it is that retain running that forms 1 part of your balance sheet which is here. So to that extent get your income statement is subordinate your balance sheet because retained earnings just one part of a balance sheet. So that is why I am always been telling you in class that balance sheet is one that is important, somebody ask you how are you measuring the performance of firm.

Of course you see the income statement to know the profitability but it is not just about profitability you also need to know about the financial strength of the firm, it is easy to just boost revenue, it is easy to just record revenue just like that and then expenses show lot of net income, but if you do not have strong financial position, to that all these revenue generation activities still it is a great issue of firm.

That is why we always see the balance sheet more meticulously than the income statement to understand whether the firm is highly leveraged to understand the total assets that the firm has created to see the capital structure and all these about which will be talking later. So such balance sheet that is more important. I am not saying income statement is not important it is electric subordinate to the balance sheet.

So now you will understand that the financial statement hence comprises the balance sheet and income statement which we have understood from the perspective of the concepts that govern this accounting principles. I think with this input we will now try to understand at the first place how did we arrive at these aggregate numbers, I showed you with examples of x, y, z and a, b, c.

So that x, y, z some amount sales revenue x, y, z, some amount, inventory a, b, c, some amount. Now these amounts are arrived based on some systems which recorded assignment, activities of that particular type happened in an entity and the aggregate and the net effect of all these activities is the amount that you see at the end of period either in your income statement and your balance sheet.

So this is important for you to understand the system based on which accounting records are being created and when these records are created how is that all these accounting records are aggregated and then presented the form of income statement and balance sheet. For in short how are these accounts maintained, you would often see that many company the finance department, the accounts department will say that this is the book of accounts.

It means yes it is a book of account today it is being computerised use Tally another thing, so tally is a digital book computerized with a digital book that still maintains some basic bookkeeping fundamentals, this bookkeeping fundamentals will provide you an analytical understanding of how this balance sheet and income statement is getting prepared, you are not being trained to be bookkeepers.

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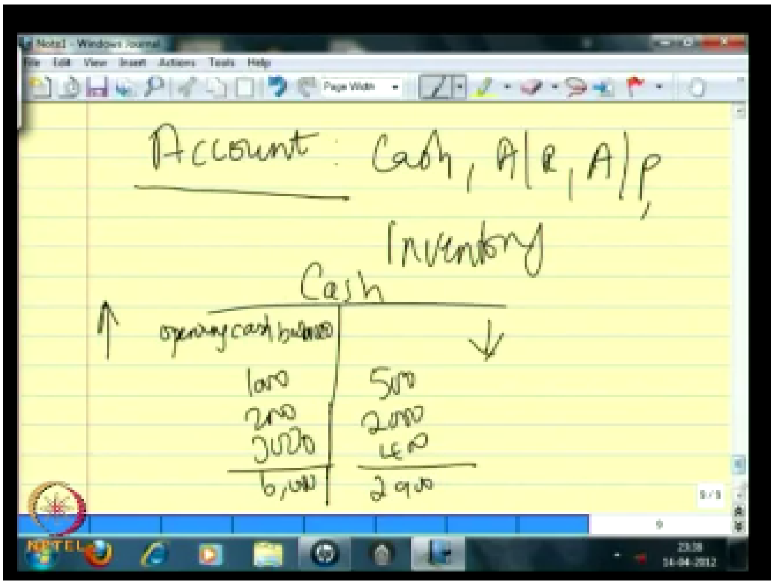

But you will be having an analytical mindset to look at the balance sheet and income statement and understand how were the first place this was created for which you need to understand the accounting record systems based on which is accounting records are very fundamental to this accounting record is the word account itself, now what do you mean by a title account. Now assume that an entity you get cash you get 10000 rupees the entity gets cash 10000 rupees, then 2 days later it spends 3000 rupees cash and then again you get 15000 it spends 3000.

So lot of activities that either a that generate cash consume cash happens in entity, but in a balance sheet you just see cash 100000 rupees that 100000 rupees is effect of many activities that either consumed or generate cash during this accounting period and I have record all these many activities I cannot write cash 10000 in the moment I get 20,000 I erase that 10000 and write 20000.

And then I consume 5000 I do not erase and then say 15000 is some process, hence our systems were you have a specific title to this activity in this particular cash and then you record all cash inflows you record all cash outflows, this sum of all cash flows and the sum of all cash outflows and the difference between these two is your 100000 cash that you see in the balance sheet, that is the opening balance of course.

So every such activities given a title account title namely cash or accounts receivable or accounts payable or inventory. So this device is called an account, this is an accounting device for easy identification and their identified in different forms was most often most popularly used from t account that is give a heading let us say cash and I told you the best way to record this is you let say you have an opening cash.

Opening cash balance let us say 0 and in this side you increase your record all the increases are in close and this side you record all out low and then you had 1000, 2000, 3000 total is 6000 and then you spend around 500, 2000 one day and then sometime later 400, so 2900.

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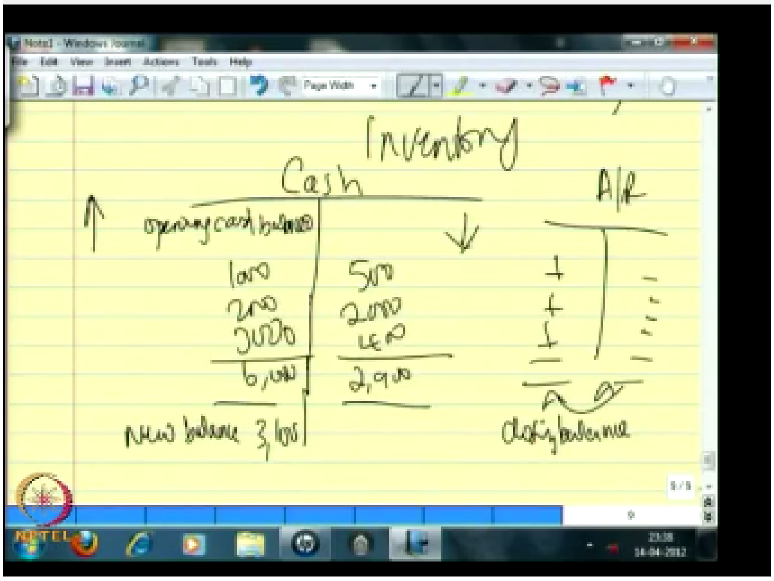

So looking at this account you can say that the new balance cash is 3100 in this side, that this is with respect to a account called cash, likewise you will have accounts receivable + + + - - - the net effect is your closing balance, likewise for each even transaction you will have different account items, identified in this particular format call the t account, all of this will find its place in what is called a ledger.

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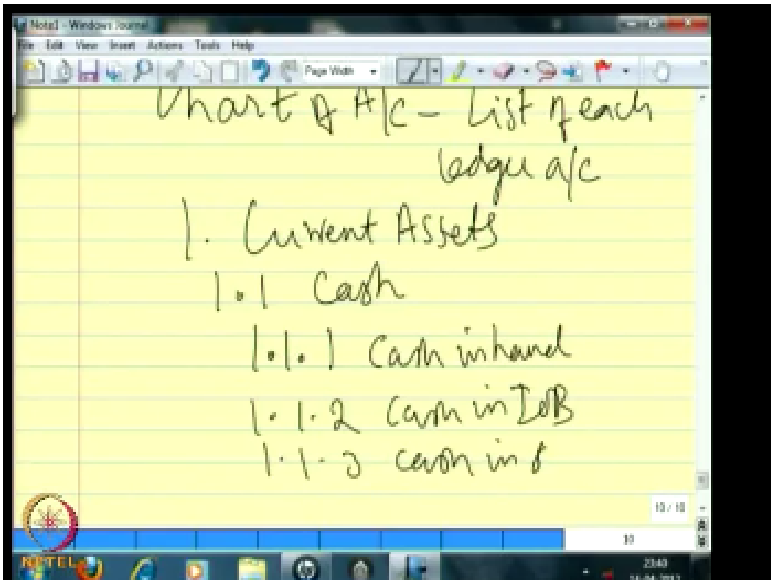

So this will be a book that contains all account titles, so this will have easily identify see a ledger book will have cash, accounts receivable and all this is the first page they will have the chart of accounts. We have the list of each ledger account, let us say 1, you say it has the current assets, the current assets 1.1 is cash. In the cash 1.1.1 is cash 1.1.2 will be cash in Indian Overseas Bank, 1.1.3 cash in SBI and so on.

So this is the last level if you are able to characterize accurately record this transaction till the last night you will be having a chart of account of this type. So what you will in a sense doing his yes that effects SBI will have a t account for cash in SBI, this IOB you will have the issue of an IOB cheque cash book out from this cash account, the issue of an SBI cheque cashing issue.

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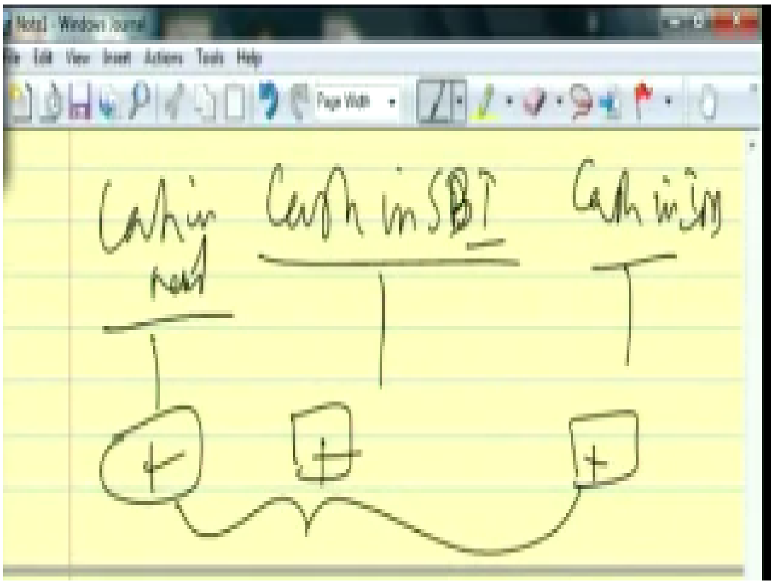

So ultimately what comes to your balance sheet as cash is the balance of this, that balance of this+cash in hand.

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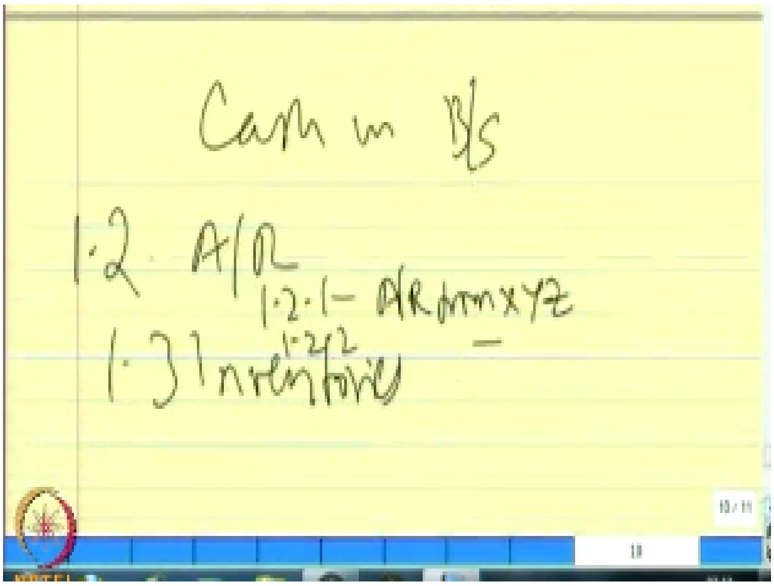

So this place this all these three will be your cash in the balance sheet, likewise you will have 2 current assets 1.1 was cash 1.2 could be accounts receive, 1.3 will be inventory, in accounts receivables also you can have 1.2.1 accounts receivable from x, y, z, 1.2.2 from different climate, so you will understand that each account will have a t account for itself which records inflows, outflows and aggregation of all this is ultimately what you find in the balance sheet or the income statement.

Now why is that for example if I get cash a record here, if I spend cash on this circum I record here why not I recorded here, if I get cash and 500 spend why cannot it be on the left side and likewise how different accounts are being measured and recorded and on the basis of what you desire whether it has to be in the left hand side or the right hand side for that welcome to the world of debit and credit.

This is the fundamental principle of double entry bookkeeping based on which each transactions which already has explain as the principle of duality and hence impacts two parameters which means minimum of 2 entries also needs to be recorded one each definitely on the left hand side the other on the right hand side, how do we do this, what is the nomenclature that is fall.

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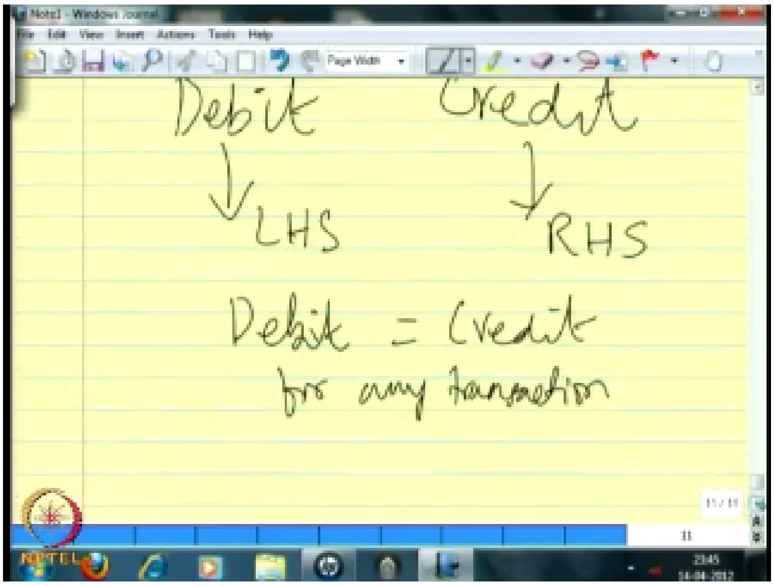

It is very simple let us first understand without questioning the debit means left hand side and credit is right hand side. So the amount entered on the left hand side is debit, amount entered on the right hand side is credit, this is the first non negotiable principal. So do not get guided by the English grammatical understanding, the accounting understanding to the verb to the debit means left hand side to credit means right hand side. That is the accounting definition to this verb.

In English credit is something good right so it is not that in accounting you credit all entries that bring in cash because bringing cash or something good it does not mean that you credit all the entries, so I forgot about the English understanding of the verb definite credit for the purpose of accounting debit means very clearly left hand side, credit means right hand side that is it.

Now the rule that is made for you to record transactions either on the debit side or credit side is important for you also to understand, the principle of duality says that each transaction has to necessarily affect has to have a two-dimensional impact and that impact must ensure that you debit is equal to credit for any transaction which means support your going to record a transaction such a way that at the end of the transaction after you have made after your recorded entry the debit is equal to credit.

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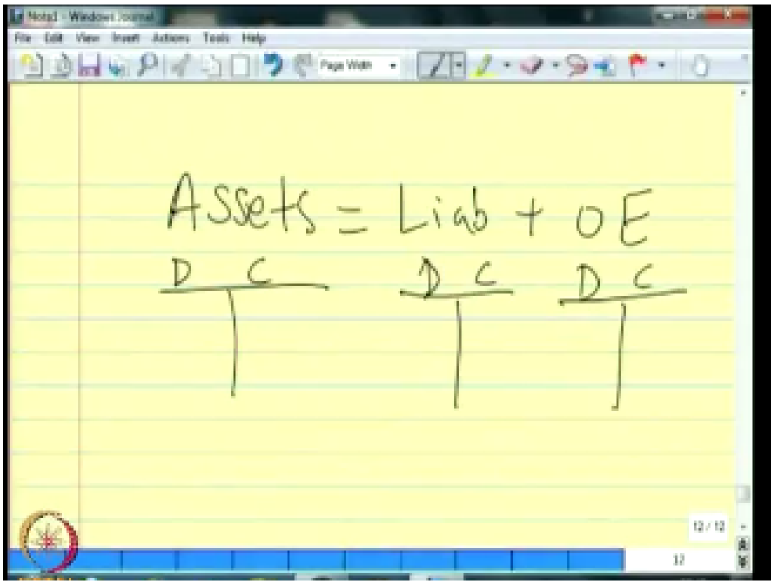

You cannot say that you have recorded a transaction in the debit and credit do not match. Now how is that we will ensure that this principle of duality is not compromised. This is something that I want you to understand very carefully. I have already told you that this is this fundamental accounting equation. Now if I am explaining this from the t account perspective remember assets will have a host of entities current assets till long term assets, in current asset, cash everything.

So you can assume that all the small, small, small t accounts in asset side will all be aggregated that is the total assets. And I told you left hand side is debit, right hand side is credit, left hand side is debit right hand side is credit, let hand side is debit, right hand side is credit, let us say for example say cash. The entity receives cash of 1 million rupees right.

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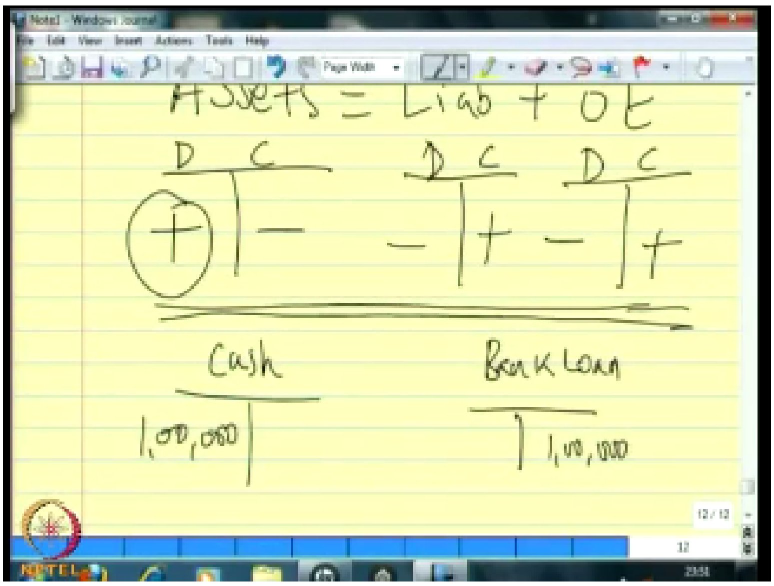

So what do I do, shall I say debit t account cash, and let us say the entity received this cash from bank as a loan, how do I record this transaction because cash is an independent t account, bank loan is an independent t account here in the liabilities side, but this is the activity that has happened. I just said that you ensure that debit is equal to credit, I can do it 2 ways say cash debit, bank loan credit debit is equal to credit or bank loan debit cash credit and debit is equal to credit but which is correct.

Now to understand which is correct here is the fundamental require, it says do not ask any question any activity that increases the asset is on debit any activity that increases asset is debit, so I put + here, and this is again a non negotiable principle of double entry bookkeeping and once this falls in place the rest is all simple, so any decrease in asset is credit any decrease in liability is debit any increase in liabilities, any decrease in owner's equity is debit craziness equity is credit.

Now again I can ask this question an entity got 1 lakh cash from the bank and there are 2 t accounts right one is cash the other is bank loan, now look at this equation here, now tell me 100000 whether it is debit cash, credit cash and as a result of this vise versa credit bank loan or debit bank loan, and the question would you should ask what has happened because of this transaction.

Cash is coming to the firm, what is cash, cash is asset, it was 0 now I have 100000 rupees from 0 cash has increase to 1 lakh, so increase in asset, increase in asset means debit, what does increase cash has increased 100000, so blindly you can put bank loan 100000 here because if debit is 100000 and you know this 100,000 from bank loan only then blindly it has to be credit.

That is one way of saying credit 100000 that reason I put it as credit, the other way of understanding through this equation is what has happened in bank loan before you got this cash you did not borrow money now you have borrowed money what is your outstanding to the bank is 100000 what was it out standing before 0 what is outstanding liability from 0 my liabilities 100000, my liability has increased means credit to 100000 bank loan credit.

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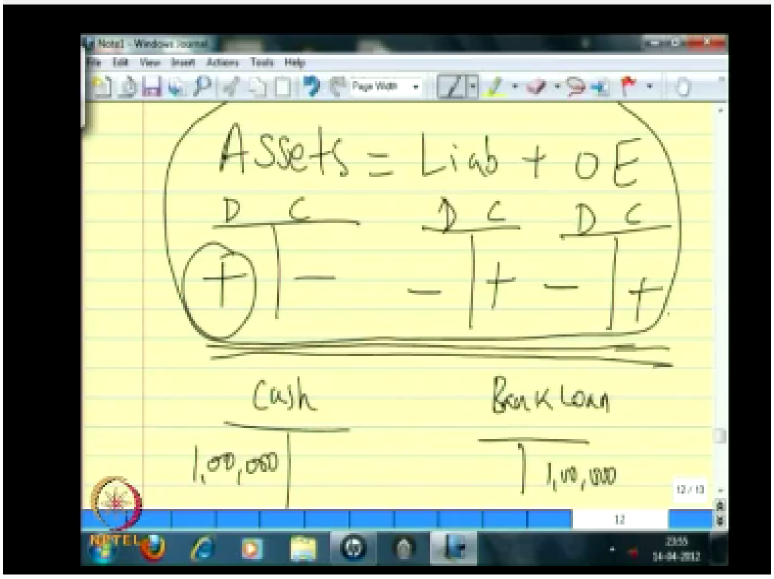

So this way every transaction can definitely be captured into this fundamental equation, every transaction can be captured in this fundamental equation assets is equal to liabilities+owner's equity and that any increase in asset decrease in asset is credit as a result of which any decrease in liabilities is debit, any increase in liabilities is credit in a decrease in owner's equity is added in increase in owner's equity is credit.

This has to be integrated embedded into all of your mind because this is the fundamental accounting equation based on which you will be recording transactions under different account categories t accounts, debit, credit and when you do this at the end of the transaction will be surprised that the balance sheet balances because you have followed a set of principles uncompromisingly as a result of which all of the segregated to ensure that your balance sheet balance.

I could give you a cash bank loan example to understand likewise revenues and expenses, revenue expense I sold some the entity sold something it got cash 1 lakh and revenue 1 lakh, how do I record this transaction. Now let us begin before this revenue happen cash was x after this revenue happen cash was X+100000. So what has happened to cash it is increased by 100000, so what is cash it is an asset it is increased by 100000 so it is 100000.

Why did increase not because I got a bank loan because I am going to sale, so sales of the t account relevant t account is sales, now I should put sales here, why should I put sales here two reasons one because I put cash here debit, debit must be equal to credit, so I put credit sale, so that is what explain, I want to look at the equation and explain this from the equations point of you.

Why did I put sales credit 1 lakh is a liability note is not liability can we explain from owners equity point of view I think so I can explain how because sales revenue increases owners's equity, how does it increase owner's equity it is from sales revenue you knock off all your expenses and then finally net income after the evidence we are retained earnings and retained earnings goes into your owners equity is part of an owner's equity.

So any sales generating activity increases the retained earnings, so any revenue is a retainging earnings increasing activity. So anything that increases the owners equity is credit and that is why sales revenue here is credit. The same thing if you look at expenses it is opposite any expense will reduce owners equity let us say I pay money as a electricity expenses, cash 1000 rupees, cash rent, rent expense 1000, how do I record this, cash has gone out before I paid the rent I was having 1000 rupees more after I paid the rent 10000 rupees is gone out. So cash went out reduction in asset is credit.

Why should I put rent expense debit here because cash is credit but that is not the explanation I want examination from this equation point of view is any expense will reduce owners equity expense, in this case it is rent expense it has reduced owners equity because it has reduced on owners equity it has to be recorded in debit side. So I have recorded it in debit 1000. So remember that the fundamental equation assets=liabilities+owners equity has to be viewed from the perspective.

Whether each transaction has increased or decreased assets or liabilities or owner's equity to decide whether the value of that particular transaction has to fall under debited or credited of that particular account. And if you are doing all of this based on this and aggregate all the account then you will see that you have a balance sheet in place, you have a good income statement in place.

Now to understand this better next class I will be giving you a series of transaction that happens in business entity and let us see whether we are able to record these transactions and then aggregate them to add meaning to this transaction and then construct financial statement as well, we will do that next class, thank you.