Symbolic Logic
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Lecture – 02
Claim
Propositions
Arguments: Components, Basic
Characteristics

Hello, we are now starting this module one. We have done the introduction in module one and this is going to be our foray into the basics of logic.

So, this Module 2 is about learning the basic components that we have and we are going to start by introducing you to this idea about *propositions*. But before we come to propositions, we will talk about *claims,* and through claims we are going to come to propositions. Why are we looking into propositions? Because our goal is to go towards Propositional Logic, which is our next step. We are also going to learn about something called *arguments*, and that is a logical entity. We need to learn what arguments are and then what are its components and what are the basic characteristics of arguments and so on. So, that is going to be our module 2.

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We will start by defining what a claim is. See, we have statements, we have assertions and so on, but it is a technical name and we have to get acquainted to it. We are calling a

statement a claim when the statement says something that can be true or false. I will repeat that. A claim is a statement that says something that is true or false. I will give you an example and then we will elaborate on this. For example, suppose we say, *Bangkok is in Asia*. That is a statement and it is true, which makes it a claim. This is the kind of entity that we are going to look into.

Now, we are using plain simple ordinary language English so that it is accessible to everybody, and this is the kind of entity that we will call a claim. Let us take another example *New Delhi is in Japan*. It is a statement and it is false; but it is still if we remember the definition of the claim, it is a claim. These kinds of things are going to be called claims. These are going to be our fundamental units on which we are going to do logic on in Propositional Logic. So, it is better to get acquainted with these entities thoroughly. Grammatically speaking, you can approach them as what you know as *declarative* statements. Remember, there are different categories of statements. These are declarative and they declare or assert something.

So, remember that claims are what they say something which is true or false. Then, you will understand what does not come under the purview of claims. So, what are the non-claims, or statements which are not claims?
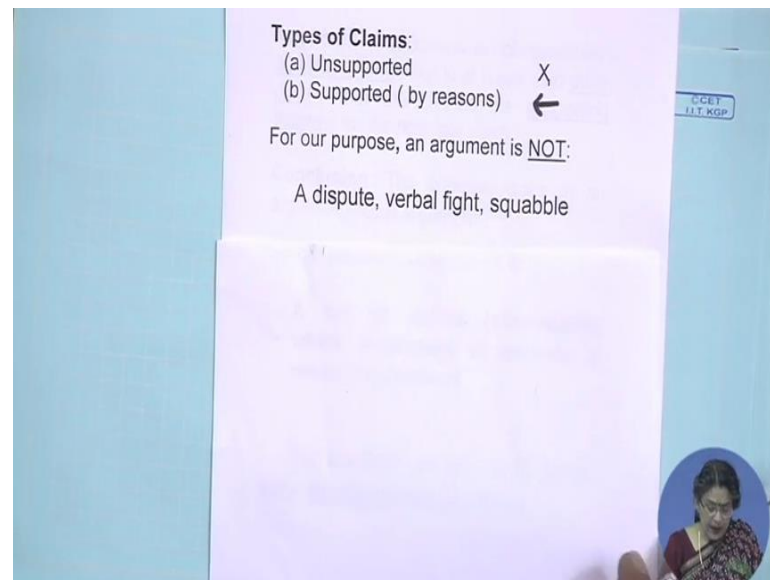
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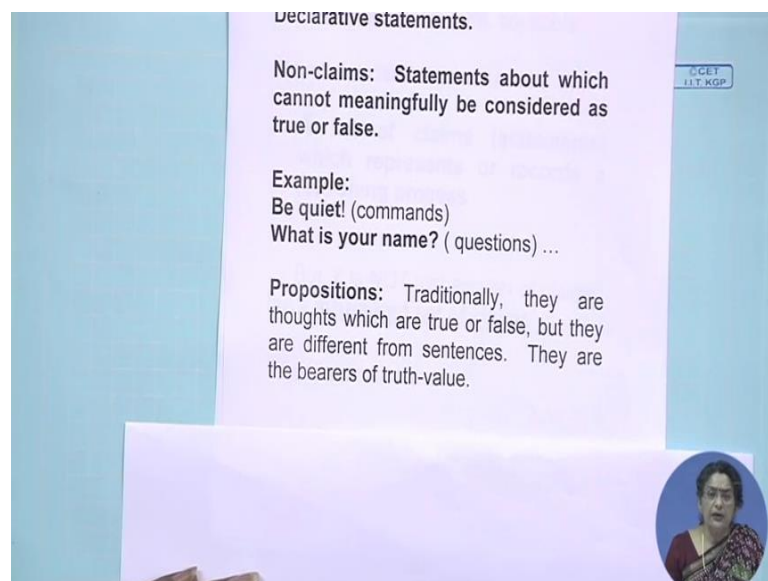
Let me give you examples also. Non-claims are statements and remember they are also statements except that they are statements about which we cannot meaningfully use the

terms true or false. They are statements first of all, but they are not that kind of statements about which we can meaningfully attribute these adjectives called true, false and so on. For example, *Be quiet*, it is a statement and type-wise we call it an *imperative* statement where you are commanding somebody to be quiet, but about this you cannot say it is true or it is false. It does not assert something; it simply commands. Consider for example, a question: *What is your name*? That in itself is not true or false. It is a question we call *interrogative* type of statements. So, remember these are statements, but which will not qualify as claims. Claims are, as we said, the declarative statements; they are stating something which can be assessed as true or false.

Now, here comes, what our connect to the propositional logic. Traditionally, our old understanding of propositions is that they are different from sentences or statements. In what way? Propositions apparently are thoughts. When you verbally, or in language, you articulate them, then they become statements. So, the thought behind those statements are propositions, and traditionally those propositions had been thought to be the actual truth-value bearers. Bearers of truth-value. So, if you ask what is it that is true or false? The answer is that the propositions are true or false.

Now, because it is a beginning course, and because we have students from various kinds of disciplines here, so, we are not going to make this kind of subtle distinctions very important for us. We will try to talk about claims *as if* they are synonyms of statements or propositions. So, remember that, this is our introduction to the very basic of propositional logic. We are going to see this in their logical form soon, but this is what we will mean by propositions, or claims, or statements. I am using them synonymously, but please remember that traditionally they are not synonyms.

Types of Claims:
(a) Unsupported
(b) Supported (by reasons)

For our purpose, an argument is <u>NOT</u>:

A dispute, verbal fight, squabble

I have introduced you to claims which are statements of a certain kind. Even those claims can be of two different kinds; one that can be unsupported, unsupported as in just an assertion, just a declaration of something, but there is no reason given why it has to be true or false. Now, we are not going to be interested in those stand-alone claims. They are claims, but we are not terribly interested in them. Rather, we are going to be interested in the supported kind. Why? We will tell you in a second, but this would be our link to understand the logical entity called argument. So, supported claims. Supported by what? Supported by reasons. Supported by other claims. To show why the original claim has to be true or false.

Argument. I have used the term argument, and the moment I say that, you are probably thinking that she is talking about some sort of verbal fight. Sometimes, you know, we talk about people are arguing with each other, or he is arguing all the time, and so on. What you mean, is some sort of a dispute, what you mean is r some sort of verbal fight that squabbling with each other and so on. Please remember that's *not* , that is *not* how we want to understand argument as. Then how shall we understand argument?
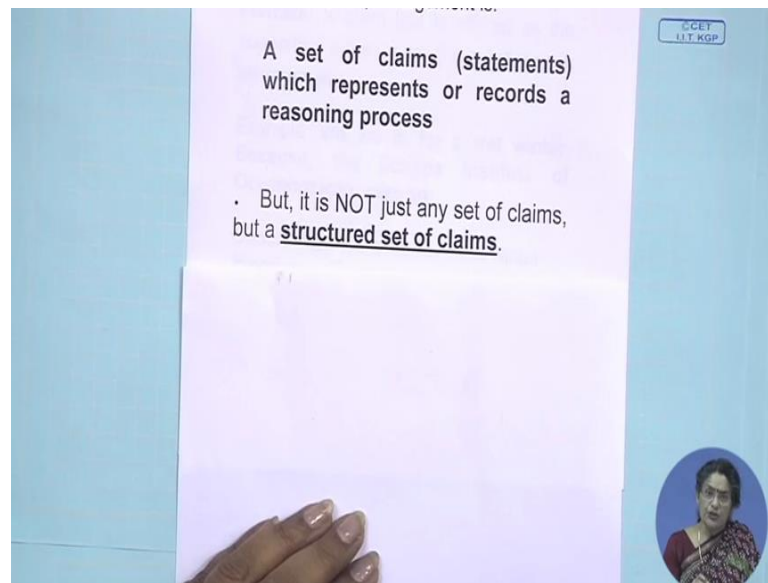
In logic, we are going to understand it, first of all, as a set of claims. Remember I have already told you what claims are. Arguments are a set of claims; that's the first point. Then I will further qualify that this set of claims represents some sort of reasoning process. Remember, we have already been through what reasoning is. So, this set of claims is going to represent or record a reasoning process. Our interest here is to look at this reasoning process, and when it is articulated as claims or statements, it is easier for us to see it, the reasoning process, and to give some comment about it. This is the reason why we are interested in this logical entity called argument.

I am going to refine this definition of argument in a second, but let us proceed through. So, remember, first of all, argument is a set of claims. But it is not just any set of claims. It has a certain structure; a certain structure. So, It is a special structured set of claims and that is what we will call an argument. What is that structure? Let me explain that to you.

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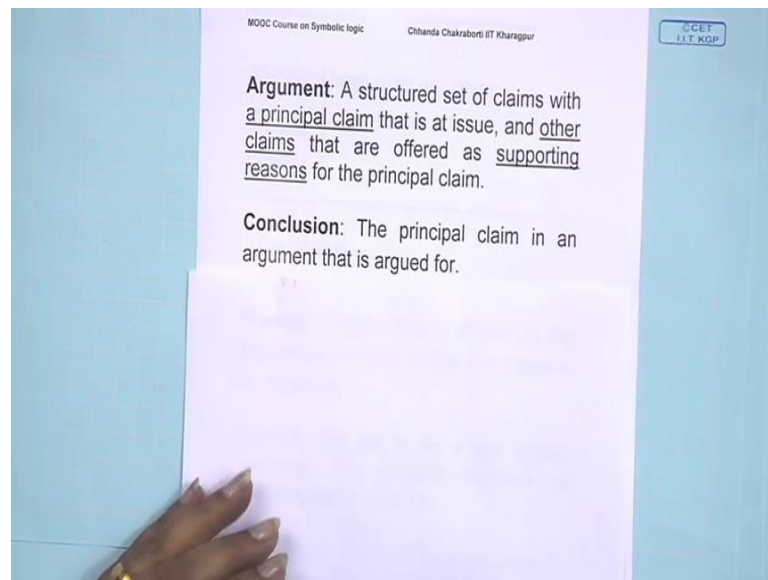
See, the argument as I already told you, is a set of claims, but then there is a logical structure inside that set. What kind of a structure is it? First of all, there is going to be a principle claim, or a main claim, that the whole set is trying to push forth. That the whole set is trying to advocate. There is a principle claim, there has to be. And the remaining claims in that set, their role would be to provide supporting reasons for that main claim. So, the remaining claims are going to act as evidentiary basis, or support base, for the principle claim. That is the structure that must be there in the set in order to make the set an argument. Alright? It is a set of claims with a very specific structure.

So, the main claim, or the principle claim, that has to be there and that the set is pushing forth, that is called the conclusion, The conclusion of the argument is the main claim.
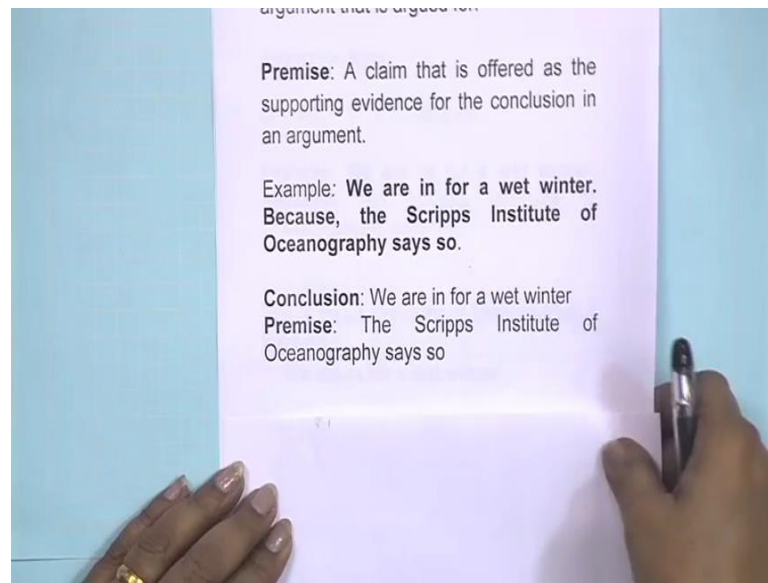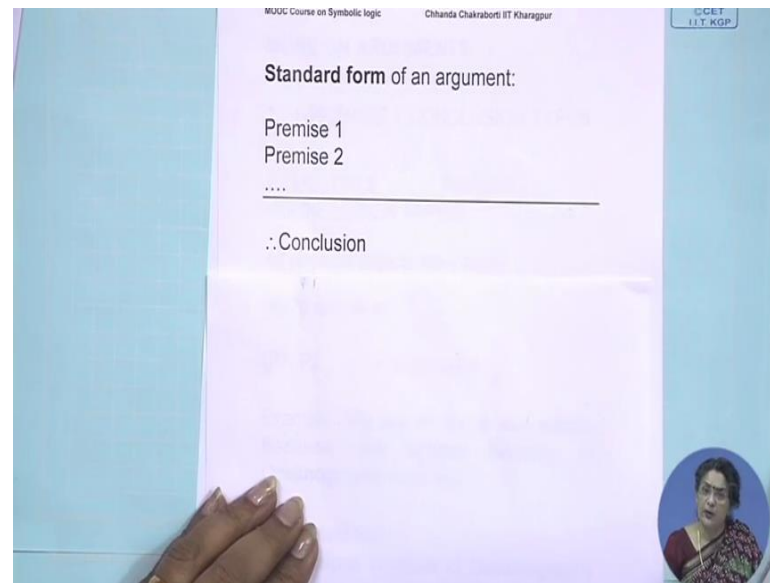
Then, the remaining claims, which are acting as the support base for the conclusion, they are called, as you may know, the premise or the premises. So, the role of the premise is to provide evidence why the conclusion must be the case, or must hold. That is the kind of structure that we get to see in an argument. We will soon give you an example. So, let me set it up. Here is a small example. 'We are in for a wet winter, because the Scripps institute of Oceanography says so.' Ok? It does not look like a set to you, but if you look through it you will probably see that it is a set of claims. How many claims are there? Well, here is one, 'we are in for a wet winter' and the second claim is 'Scripps Institute of Oceanography says so.'

So, it is a set of two claims. Now, let's ask ourselves what is the structure that we see inside th is set? Is there a main claim or a principle claim? The answer is yes. Which one? We are in for a wet winter. What is the role of the other claim? To provide support, or evidence, why we are saying that we are in for a wet winter. Because the Scripps institute of Oceanography says so. So, using the technical language, the first claim is the conclusion, and the other claim is the premise; which makes this set an argument. Ok? So, this is how you can identify what we have just said that there is a very specific conclusion here, and there is a premise also acting on it, which makes this set an argument.

The set of claims that we call an argument, remember, that there is a standard form of representing an argument There is a certain format in which you can place the argument. Let me show you how it goes. Schematically it may look like this. Suppose there are two premises, then you can lay it separately, the premises separately out, and here comes a line, a divider line, between the premises and the conclusion.

Note that the conclusion is preceded by this triple dots. Triple dots stand for *therefore*. So, you are saying: Look, this is the case,this is the case, and therefore, this has to be the case. And in order to make the whole presentation pictorially clearer, we have drawn a line. It is not necessary that every time you are going to have only one premise or two premises. There can be many more. If you do that, then you just lay it out like this. But after the premises there has to be a complete breaking line followed by the triple dot and then followed by the conclusion. That is how what is known as standard form for an argument.

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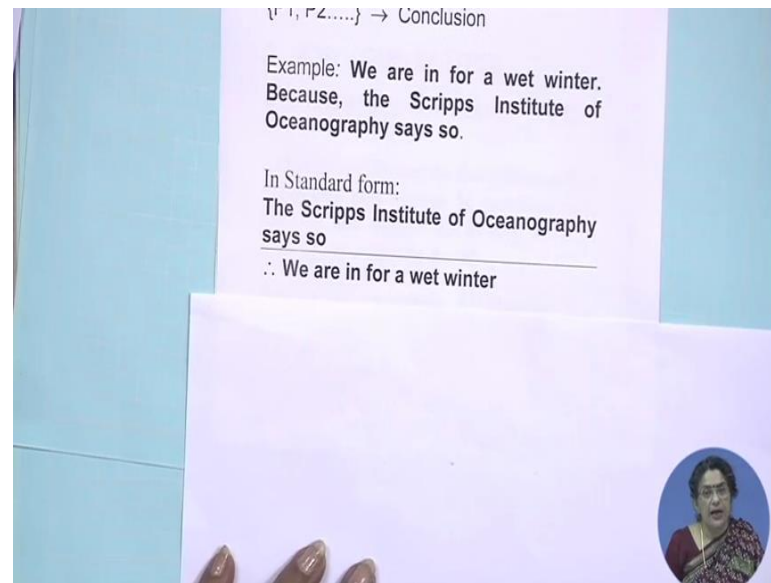
There can be an alternative form also. If you want, you can also write it like so. This curly bracket is known to be the set symbols. So, you can say that here is a set of premises and it is separated out by these curly brackets. This is premise 1, this is premise 2 and if you have more, line them up like so and here comes the conclusion. Before that there is an arrow, which works like the divider line that we have seen earlier. So, either of these forms is ok. But preferably because you are beginners and I suggest that you follow this standard form. If you are trying to convert an argument into standard form, this is the form that you need to make it into. So, now, you have this once more. This was our argument which we just saw. So, if you want to convert it into standard form, it is going to look like this. As simple as that. It is better to lay out the arguments in this kind of standard format, because otherwise their assessment and the structure which you want to see there, may not be so clear. So, we have learnt a little bit about what arguments are. But there is more, there is more to learn here.

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Note that we have just seen an example where there was only one premise and one conclusion. So, there can be one very simple type, one premise and one conclusion. But then you can also imagine that it does not have to be always like that. There can be multiple premises followed by the conclusion. So, remember, that the standard format applies equally to both the types.

Here is a small sample of two premise, one conclusion sort of, which says that the premise number one is 'all physical objects have mass', 'this table is a physical object', note the dividing line, here comes the triple dot, and here comes the conclusion that 'this table too has mass'.
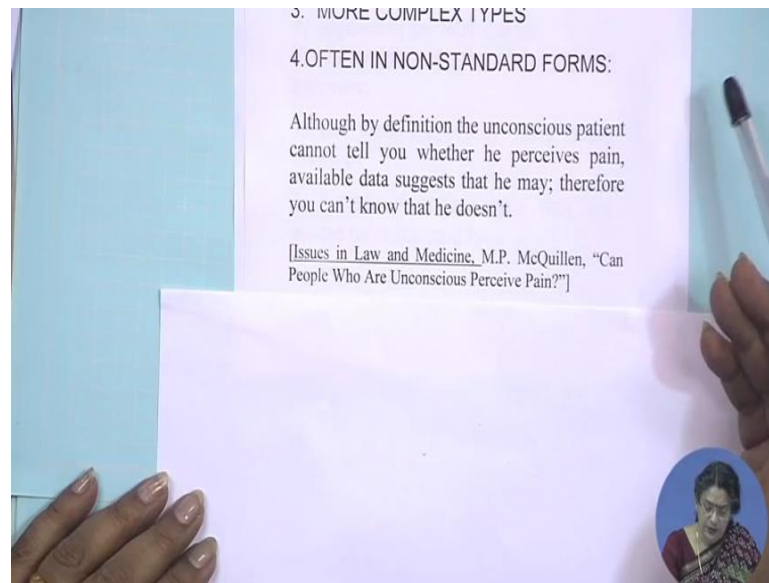
There can be obviously, you can imagine and we will try to see as we go along in the course, there can be many more complex types of arguments. But as we come to them, we will try to talk about them, Then, there can be arguments which are not at all in the standard format. So, take a look into that.

Often, they come, in fact, often people present arguments in rather non-standard format. Here is an example. This is a passage from the journal called 'Issues in Law and Medicine.' And from an article published in that journal. It says 'although by definition the unconscious patient cannot tell you whether he perceives pain, available data suggests that he may. Therefore, you can't know that he doesn't.' A rather, sort of terrifying possibility. We are talking about an unconscious patient and by definition, the patient is not supposed to feel any pain. But when people come out of operations, when people come out of coma, there are reports from the patients that they perceived pain, or they felt pain. So, you cannot conclude therefore that you can't know for sure that the patients do not feel pain. That is what the argument is.

Now, this is an example. Look at the way it has been placed. There is no standard format given. But, there is one *therefore*. So, whatever follows the *therefore*, that is your conclusion. Now,if you are trying to put it into standard format, you need to read it closely. And you will find that there are two premises in this part, and we will try to

separate them out just to show you and then we will try to get the conclusion out. „Just to bring out the structure clearly.

In standard form, the same argument which I showed you is going to look like this.

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There is going to be two premises lined up, and here comes the conclusion. So, premise number one is 'By definition, 'the unconscious patient cannot tell you whether he perceives pain' and premise two is 'available data suggest that he may'. Here comes dividing line. Here comes the conclusion 'You can't know that he doesn't'. The separation is something that gives you the clear structure of an argument here.
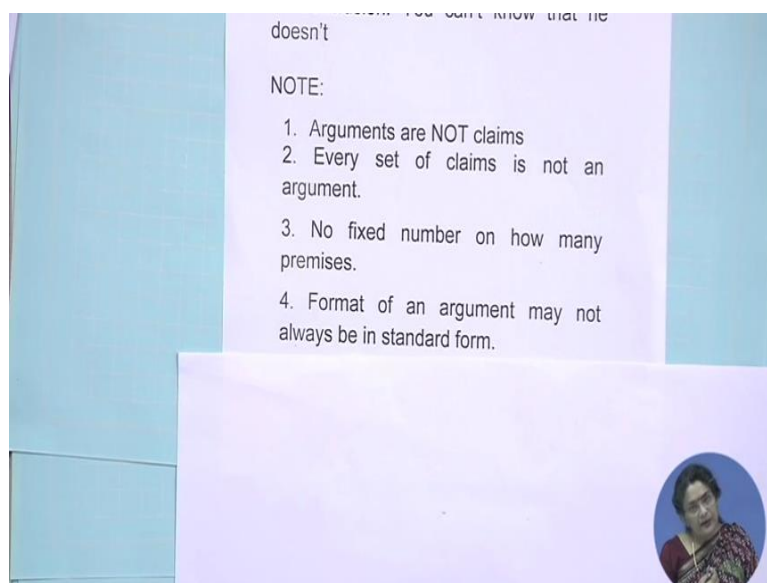
I am going to conclude by giving some basic characteristics of arguments, now that we have introduced this entity. First point is that, note that arguments themselves are not claims. Arguments are set of claims, but they themselves are not claims. Alright? So, the components of the arguments are going to be claims, but when, in an, when we are taking the argument as a whole, it itself is not a claim. And we will not treat them as one. So, we cannot say arguments are true or false. Claims are true or false, but arguments are not true, not false. They are of a different kind.

Second point, I have already said this, but I'll make it clearer, is that every set of claims is not an argument. There can be different sets of claims, but not every set of claim is an argument. Why not? Because, remember what I said that in order to be an argument, a set of claim must have a certain logical structure. There has to be a principle claim, there has to be supporting claims or premises. Unless you have that, that set remains a set, but it does not become an argument. Remember that.

This should be also obvious to you by now that, we have mentioned this, that there have to be premises, but there is no number, fixed number of how many premises there have to be. So, there can be variances. You can see one premise, you can see more than one.

Finally, what we have just learnt, is that there is a standard format for arguments, but every argument may not be given in that standard format. So, when that happens, as a trained person in logic, you should be able to convert it into standard format. I have

already explained what the standard format is. So, this is how far I will go in the second module. We have learnt about claims, we have learnt about propositions and we have also looked into what arguments are. Ok? This is where I will close the second module.