

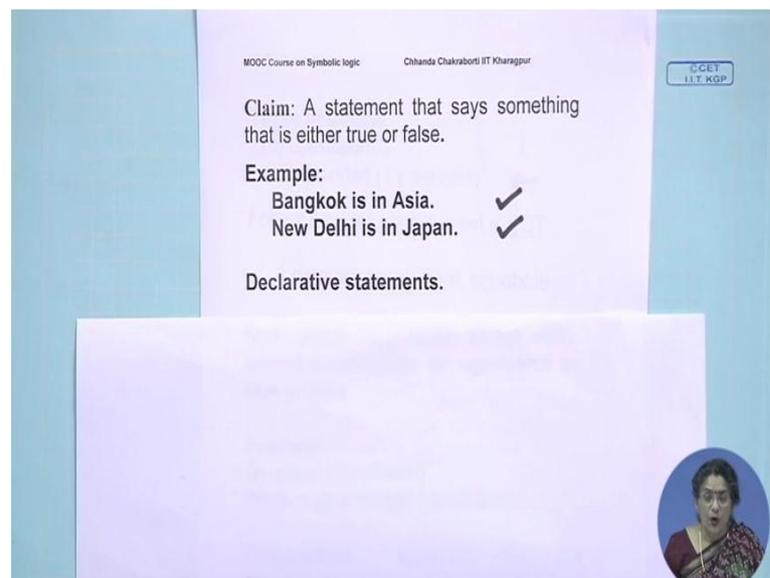
Symbolic Logic
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Lecture – 02
Claim
Propositions
Arguments: Components, Basic
Characteristics

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 and 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. So, that is going to be our module 2.

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Claim: A statement that says something that is either true or false.

Example:
Bangkok is in Asia. ✓
New Delhi is in Japan. ✓

Declarative statements.

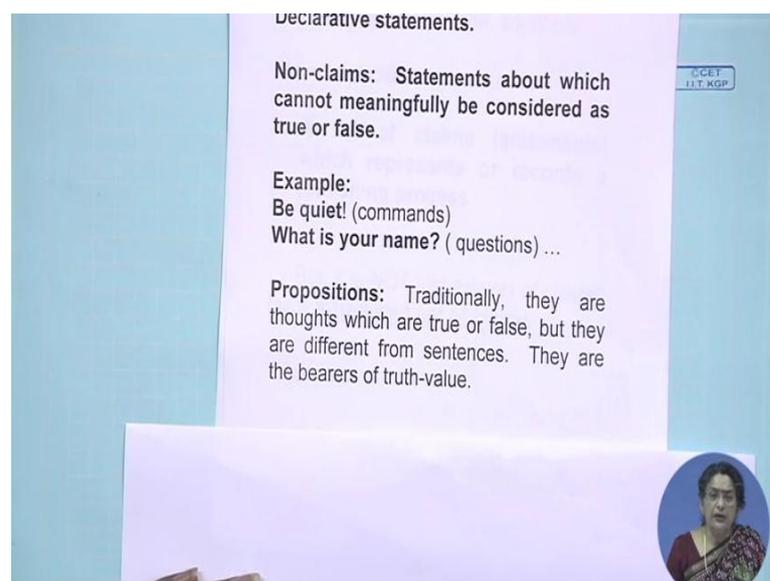
We will start by defining what a claim is and see we have statements, assumptions and so on, but it is a technical name and we have to get acquainted to it we are calling a

statement claimed 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 which is true and 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 and these are going to be our fundamental units on which we were 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 and 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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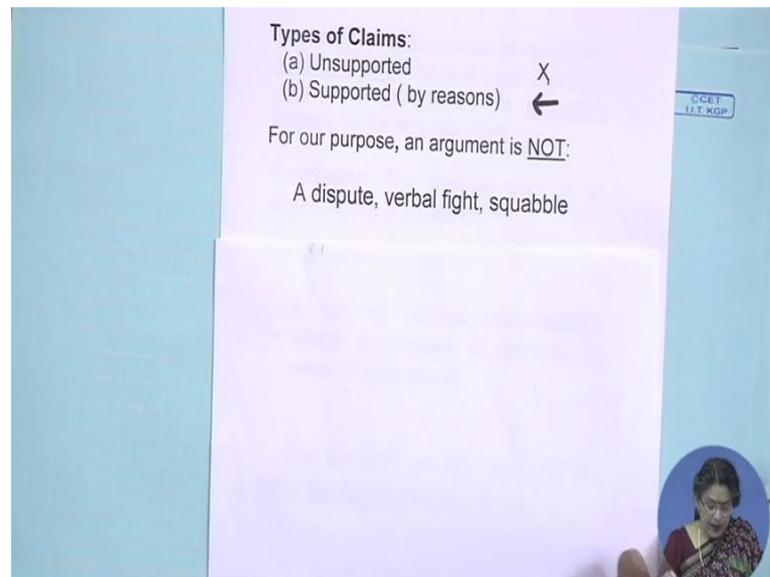
Let me give you examples also. Non-claims are statements and remember they are also statements except that they are statements about which we cannot meaningfully use the

term 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 combining somebody to be quiet, but about this you cannot say it is true or false and it does not assert something, it simply combines. Consider for example, a question what is your name? It in itself is not true or false and it is a question we call interrogative type of statements. So, remember these are statements, but which will not qualify as claims. Claims are the declarative statements and they are stating something which can be assessed as true or false.

Now, here comes our connection to the propositional logic that traditionally our whole understanding of propositions is that they are different from sentences or statements and in what way propositions separately are thoughts and 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. So, if you ask what is it that is true or false? The answer is the propositions are true or false.

Now, because it is a beginning course and we have a student from various kinds of disciplines here. So, we are not going to make this kind of settle 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 and we are going to see this in their logical form soon, but this is what we will mean by propositions or claims or statements and I am using them synonymously, but please remember that traditionally they are not synonyms.

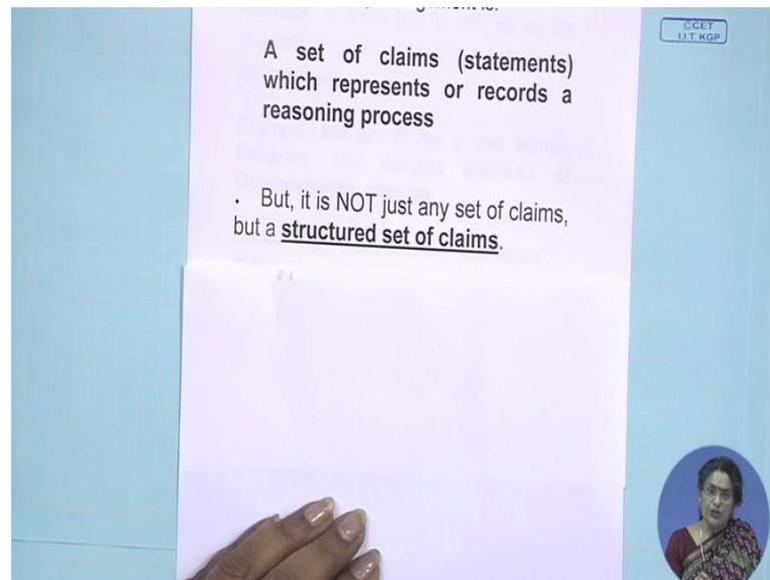
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I have introduced you to claims which are statements of a certain kind and even those claims can be of two different kinds, one that can be unsupported as just a declaration of something, but there is no reason given why it has to be true or false. 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 and why will tell you in a second, but this would be our link to understand the logical entity called argument. So, claims supported by other claims to show why the original claim has to be true or false.

I have use the term argument and the moment I say that you are probably thinking that she is talking about some sort of verbal fight and sometimes we know 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 with dispute or some sort of verbal fight of squabbling with each other and please remember that is not how we want to understand argument as, then how shall we understand argument in logic?

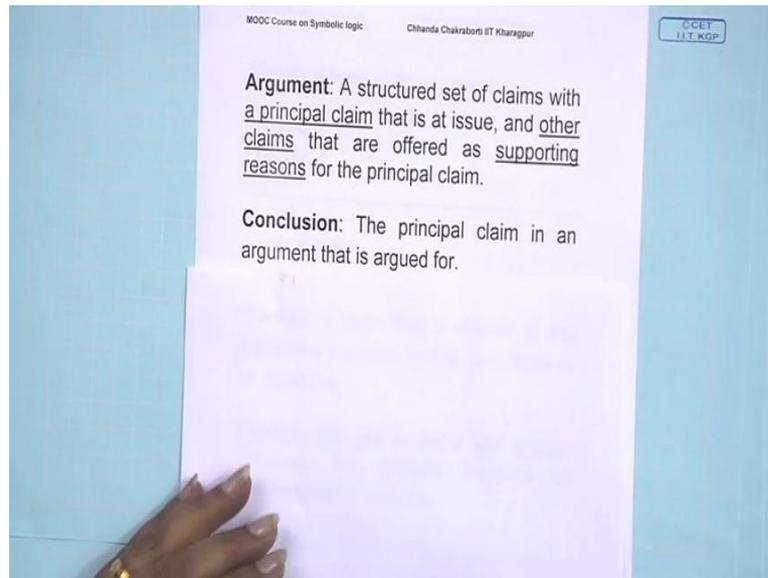
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We are going to understand it first of all as a set of claims. Remember I have already told you what claims are. Arguments are a set of claims and then I will further qualify the set of claims that represents some sort of reasoning process. So, this set of claims is going to represent or record our 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 and it has a certain structure. 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.

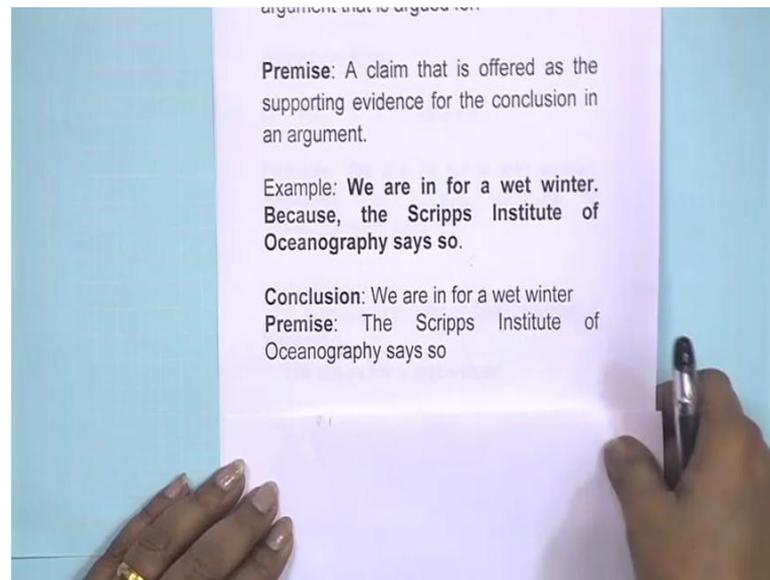
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See the argument as I already told you is a set of claims, but then there is a logical structure inside that set, what kind of a structure is it. First of all, there is going to be a principle claim or a main claim that the whole set is trying to push forth which the whole set is trying to advocate. There is a principle claim, there as 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. 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 status is pushing forth which is called the conclusion and the conclusion of the argument is the main claim.

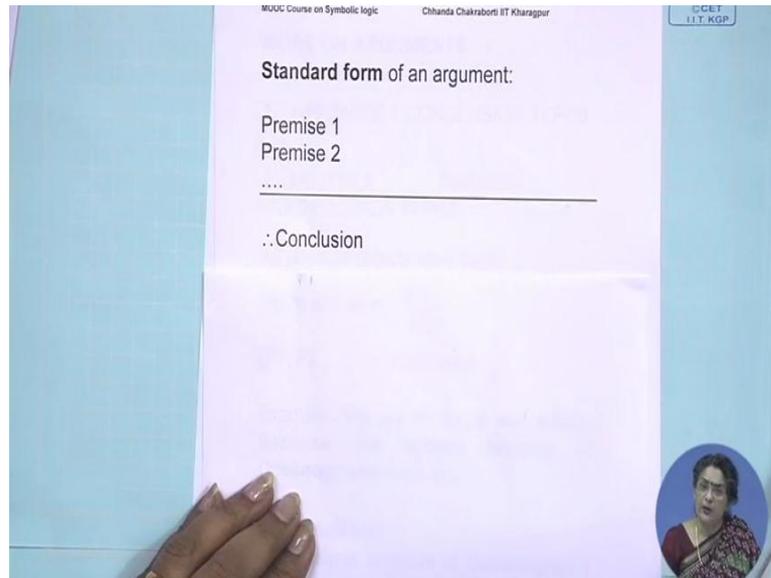
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Then the remaining claims which are acting as the support base for the conclusion, they are called as you may know the premise or the premises. So, the role of the premise is to provide evidence why the conclusion must be the case or must hold and that is the kind of structure that we get to see in an argument. We will soon give you an example. Here is a small example. We are in for a wet winter because the Scripps institute of Oceanography says so. 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 and how many claims are there? Here is one, we are in for a wet winter and the second claim is Scripps Institute of Oceanography says.

So, it is a set of two claims and what is the structure that we see inside this set and is there a main claim or a principle claim? The answer is yes, which one, we are in for a wet winter and the role of the other claim is to provide support or evidence that why we are saying that we are in for a wet winter because the Scripps institute of Oceanography says so. Using the technical language, the first claim is the conclusion and the other claim is the premise which makes this set an argument. So, this is how you can identify and we have just said that there is a very specific conclusion here and there is a premise acting on it. So, this makes this set an argument.

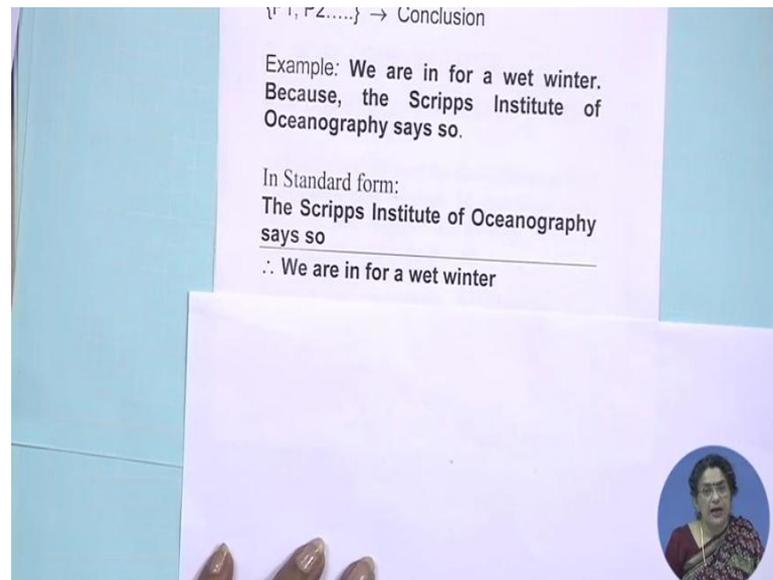
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The set of claims that we call an argument, remember that there is a standard form of representing an argument and there is a certain format in which you can place the argument. Let me show you how it goes schematically and it may look like this. Suppose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

Note that the conclusion is preceded by this triple dots and triple dots stands 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 and 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 and that is how what is known as standard form for an argument.

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There can be an alternative form also and if you want you can also write it like so. This curly bracket is known to be the set symbols. 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 and if you 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 and 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. 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 to learn here.

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MORE ON ARGUMENTS

1. 1-PREMISE 1 CONCLUSION TYPES
2. MULTIPLE PREMISE/ 1 CONCLUSION TYPES:

All physical objects have mass.
This table is a physical object

∴ This table (too) has mass.



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 and there can be multiple premises followed by the conclusion. Remember that the standard format applies equally to both the types and 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.

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3. MORE COMPLEX TYPES

4. OFTEN IN NON-STANDARD FORMS:

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.

[Issues in Law and Medicine, M.P. McQuillen, "Can People Who Are Unconscious Perceive Pain?"]



There can be obviously, you can imagine and we will try to see as we go along in the course. So, 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. 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 and available data suggests that he may and therefore, you cannot know that he does not. 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 and 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 it cannot know for sure that the patients do not feel pain and that is what the argument is.

Now, this is an example look at the way it has been placed and there is no standard format given. So, whatever follows the therefore, that is your conclusion and 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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In Standard Form, the argument is:

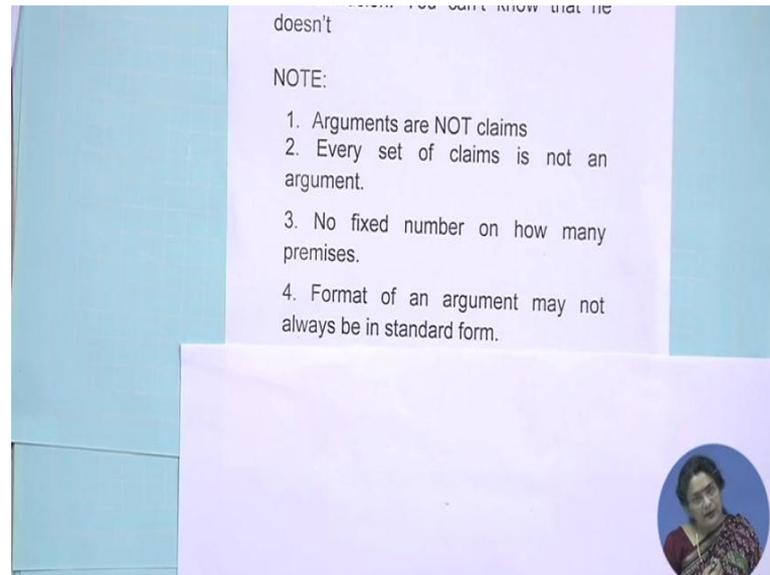
P1. By definition the unconscious patient cannot tell you whether he perceives pain

P2. (But) Available data suggests that he may

∴ Conclusion: You can't know that he doesn't

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 and here comes dividing line, here comes the conclusion. The separation is something that gives you the clear structure of an argument here.

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I am going to conclude by giving some basic characteristics of arguments now that we have introduced this entity. First point is note that arguments themselves are not claims. Arguments are set of claims, but they themselves are not claims. So, the composition of the arguments are going to be claims, but 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 nor false, they are of a different kind. Second point is that every set of claims is not an argument and there can be different sets of claims, but not every set of claim is an argument and why not because remember what I said that in order to be an argument, a set of claim must have a certain logical structure and there has to be principle claim and there has to be supporting claims or premises. The set remains a set but it does not become an argument.

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

finally, we have just learnt 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. This is how far I will go in the second module and we have learnt about claims and propositions and we have also looked into what arguments are. This is where I will close the second module.