Module - 01
**Lecture - 04**
Elements of User Experience

Hello everyone, welcome to lecture number 4 of module 1. Today, we are going to discuss about Elements of User Experience. Now, this is important for us to know and understand the elements as stated by Jesse James Garret because in this course, our intention is to learn and devise strategy for designing usable systems; systems that satisfies the basic parameters concerning usability and therefore, it is important that we must know the structure of these systems that we want to design and build.

In order to understand the basic structure of these systems, Jesse James Garret has proposed elements of the systems that influences, what we call as user experience; that means, the experiential perspective of a user when he or she uses a system. So, user experience concerns the experiential part.

Now, in order to ensure that we deliver an experience that is just, that is appropriate, that is satisfying and that is error free or your users can recover from these errors. We must understand its elements its structure so that we can devise strategies to design for better usable and experiential states.

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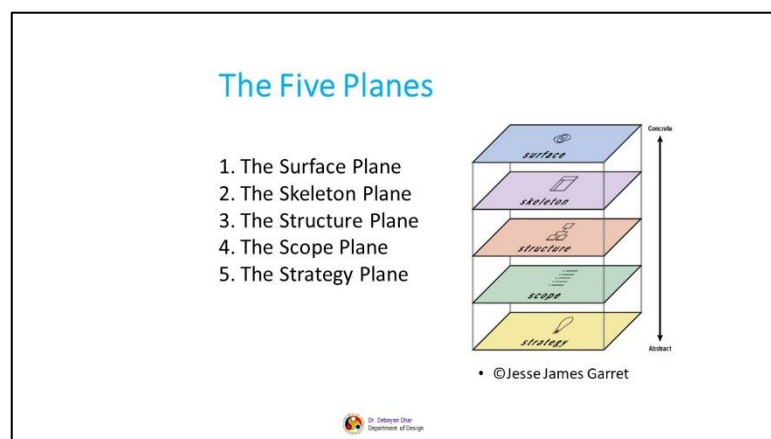
So, let us begin. Now, what you see in this slide are the five planes discussed in detail in his book 'The Elements of User Experience Design' by Jesse James Garret and these five planes are strategy plane, the scope plane, the structure plane, the skeleton plane and the surface plane right. So, it starts from being abstract the strategy plane is something that is more abstract in nature and as we move upwards the abstraction changes into being concrete.

So, what we mean by abstraction is something that is not quantified or that cannot be observed directly. But as we move to the surface level, we realize things that can be observed, things that can be touched, things that can be interacted with right. So, these are the five planes. In this quick lecture on the elements of user experience design, we would now discuss in detail about these five planes.

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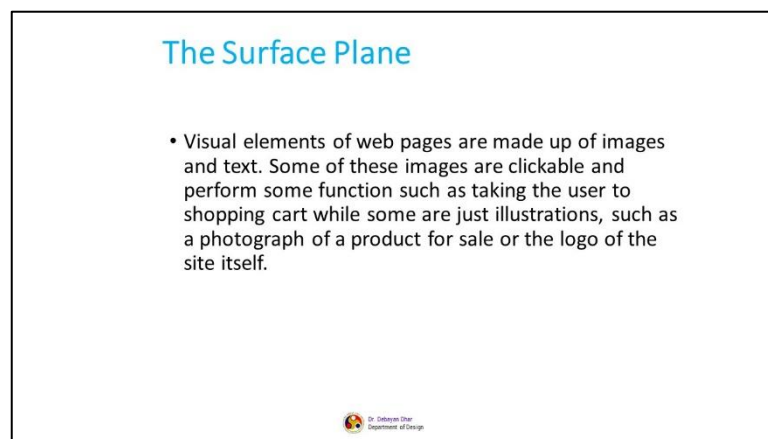
Let us start with the surface plane. Now, the surface plane consists of visual elements of web pages that are made up of images and text. So, whenever you see a interface or a web page, you would realize that it primarily consists of the layout what you see and it consists of images, illustrations as well as text, textual data right and some of these images are clickable and perform some function such as taking the user to the shopping cart.

For example, if you are using an Amazon or any online, Flipkart or any other online B2C web applications like Bharathi Commerce or Amazon or Flipkart or any other services, you would realize that there are visual buttons and menus, where you click and it takes you to the cart. So, that is what we are referring to as functions.

Now, there are some apart from this kind of functions, where you click and move on to a different page or a different directory, there are some illustrations that are not clickable. These are only illustrations, these are only images meant to convey information to the user.

Like if you are in a buying page, you would see the photograph of the product or the logo of the web page and these visual elements constitute the surface plane. So, if you remember the structure that we have discussed earlier that from abstraction, it comes to the level of concrete presentation right here.

So, what we mean by concrete is that we can see those elements directly through our eyes. We can see the photographs, we can see the visual elements, we can see the layout, we can see like if we click on a particular clickable image that is a button, we see that the page gets changed and it moves from one state to another state. So, all these are visible states that are at the surface level of the web product or of the web page or the web application.

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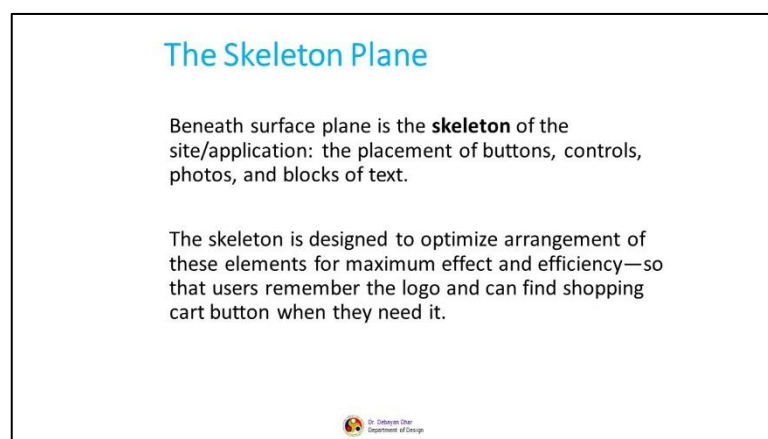
Now, beneath this surface plane, what we have is the skeleton plane. Now, the skeleton plane means the essential structure that builds up this surface plane right. The placement of buttons, controls, photos, blocks of text. So, the structure, I mean the layout; instead of structure, we can use the word layout here. Layout would be much more prominent when we talk about the skeleton plane and the skeleton is designed to optimize arrangement of these elements for maximum effect and efficiency.

So, whenever you look at a web page, you would realize there is a particular way through which the menus are designed and the menus are placed, you would see there are ways through which buttons are positioned, boxes are positioned. So, all these ensures that your
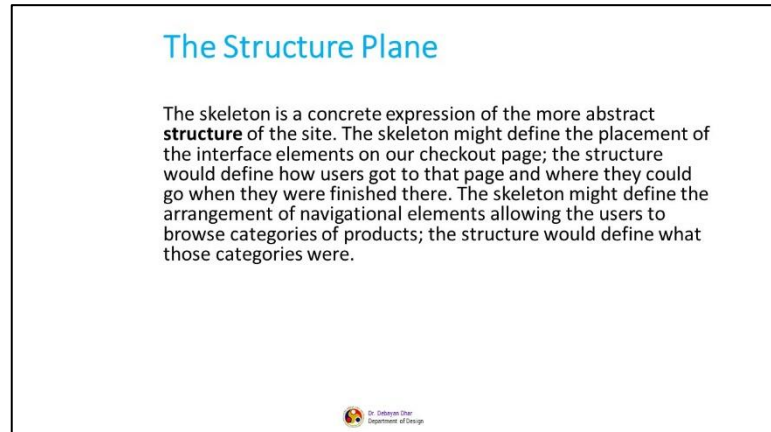
user realize with where to go for a particular requirement and there are some standard practices in this layout also that is followed across the World Wide Web consortium.

Now, users remember all this information, remember logo and can find your executable options like the buttons whenever they realize that it is in a particular layout, in a particular format and that is what we refer to as the skeleton plane.

So, while the surface plane, we see the elements that are visual in nature, we see the illustrations, we see the photographs, we see the visual elements like buttons and menus. At the skeleton plane, we see a more underlying layout and way through which these elements are structured.

There is a hierarchy through which these elements like buttons, photographs, icons, images, menus are put together in a layout so that your user or customer realizes where to find what and this follows a convention and the convention that we follow are the standards put forward by World Wide Web consortium.

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The Structure Plane

The skeleton is a concrete expression of the more abstract **structure** of the site. The skeleton might define the placement of the interface elements on our checkout page; the structure would define how users got to that page and where they could go when they were finished there. The skeleton might define the arrangement of navigational elements allowing the users to browse categories of products; the structure would define what those categories were.

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Now, beneath this skeleton plane what we have is the structure plane. Now, the skeleton is a concrete expression of more abstract structure of the site. So, what is the abstract structure of the site? The skeleton might define the placement. So, if you remember, we talked about where to put which element in the skeleton plane. So, the skeleton might define the placement of the interface elements in many pages; for example, in login page or in checkout pages for example.
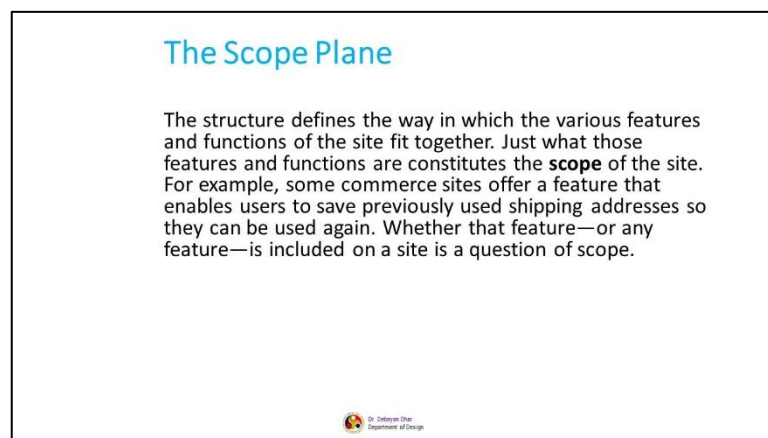
But the structure would define how users got to that page and where they could go, when they are finished there. So, the difference between the skeleton and the structure is the way through which your customers reach that page.

While in skeleton, we are concerned about the layout or the position of the elements or the visual elements in a web page; here, we are more concerned about how your users reach to those pages. So, we are talking about something kind of navigational entity or elements here.

Now, the skeleton might define the arrangement of navigational elements allowing the users to browse categories of products; but the structure would define what those categories were right. So, essentially if you see or if you realize what we are discussing, all about we are moving now towards more abstraction. Initially, we had seen what we call as the surface plane. Then, we moved on to the skeleton plane, where we discussed about the positioning of the elements.

And now, we are moving on to a more abstract concept which is the structure plane, wherein, we are focusing more on how do our users get to those pages. So, it's more like the navigational aspect of how our users or customers move from one place to the other.

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The Scope Plane

The structure defines the way in which the various features and functions of the site fit together. Just what those features and functions are constitutes the **scope** of the site. For example, some commerce sites offer a feature that enables users to save previously used shipping addresses so they can be used again. Whether that feature—or any feature—is included on a site is a question of scope.

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The fourth plane is the scope plane. Now, the structure defines the way in which the various features and the functions of the site are fit together. See if you realize about what we discussed in this structure, we discussed that its more towards navigation and when we talk about navigation, we must understand this that users can navigate when things are put together in a relational way.

So, things mean information, content are clustered together. It matches their mental model which we will discuss later as we proceed in this course. But it matches them and they realize where to find what. So, navigation is always informed, is always a function of the information that is clustered around and put together in a hierarchy.

Now, so structure defines the way in which the various features and functions of the site fit together. That is what we call a structure. The position of the contents the hierarchy of the contents through which our user is ensuring that he gets to the content and reach to those websites. Now, what those features and functions are constitutes the scope of the site?

Now, we can take an example to understand what is the scope. Here, we are referring to these specific features; that means, say for example, login activity is a feature right. More example I have listed here. Some commerce sites offer a feature that enables users to save previously used shipping addresses so that they can be used again that is a feature right.

Now, whether that feature or any other feature is included on a site is a question of scope. So, you can see that in many e-commerce platforms, we see features where you would be able to compare across a range of similar products, you would be able to compare across you know see the products across various brands, you would be able to use features like if you can have the addresses saved whether you can be able to use that addresses later.

Now, these are very very important features that defines how your user's or customer's requirements are met. Now, whether as a designer, you choose to provide those features are what being decided at the scope plane? So, that is what we defined a scope.

Are we as designers interested in providing these features, while we are in the design process? So, the decision-making part of what kind of features are to be provided to satisfy the requirements that we have gathered are being decided at the level of the scope plane you know.

So, from the surface, where we all look about the visual elements, the logos, the illustrations, these photos, the visual menus governs the surface plane, then we have the skeleton plane right. The skeleton plane is more concerned about the layout, about the way elements are put together. The structure plane is more towards how your users reach towards those pages.

So, it governs more into how the hierarchy and elements are put together, these pages are put together, the contents are put together and features and functions essentially are put together. And while we come down to the scope plane, here, at this state, we are more concerned about whether we would like to give features, these features. So, the concern is more towards deciding whether a particular feature is to be given or to be provided in the interface or in the product.

So, that it meets requirements right. So, as you see we are moving towards more layers of abstraction. What we see in the surface plane as we move towards the scope plane, its move towards what we start as a designer in our mental processes about thinking what we need to do. So, that aspect is what we are now gradually entering into.

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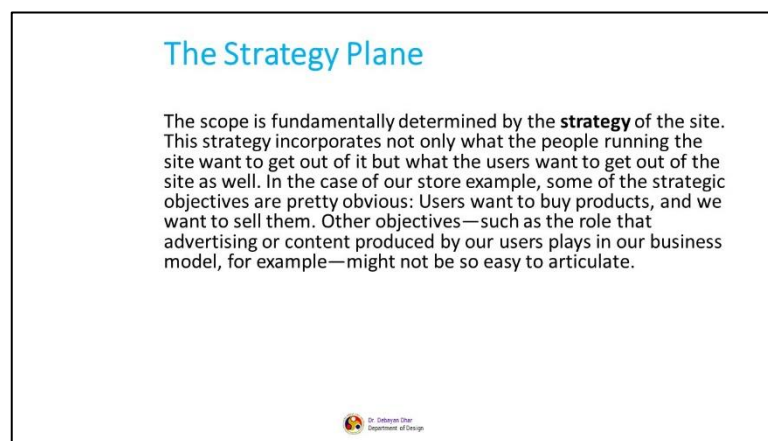
The final plane, the lowest plane of the entire structure that we have seen is the strategy plane. Now, in the strategy plane, the scope is fundamentally determined by the strategy of the site or the web application or the web product or any applications per se that we are trying to design for. Now, this strategy incorporates not only what the people running the site want to get out of it; but also, the users want to get out of the site as well right.

So, it is a it has to it is a match between what the stakeholders, we call it stakeholders they want because they are the people, who have put in money in developing the product that application of the website; you will have a host amount of people who have initially you know decided to address the kind of product that you are trying to build upon and they are the people who own that product.

So, therefore, there should be a match between what they are what their visions and their goals are and what their requirements of the end users, your customers are right. So, in case of the kind of example that we have been discussing, some of the strategic objectives are pretty obvious like users want to buy products and the e-commerce platform that we have been referring to the stakeholders they want to sell them.

So, other objectives such as the role that advertising on content produced by our users plays in our business model, all these things are governed at this strategy plane ok and these are not very easy to articulate. So, the match between what the stakeholders would prefer to have and how it is being articulated as if a content and a feature driven product which meets the requirement of the user has to be matched at the strategy plane.

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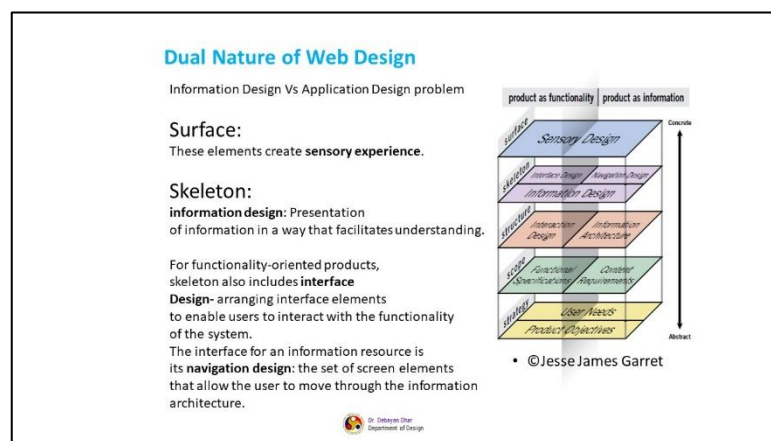
Now, what we will do here is that now we will understand about these planes in a more detailed way in terms of how it relates to the design process. So, you must understand while we discuss about these elements that when this model was proposed by Jesse James Garret, there was a kind of debate or discussion emerged in the context of HCI literature that it was often termed as a process or a work between people, who are focused in information design versus the groups of people, who are focused on application design problem.

Now, what does that mean is that whenever you look at a site, there are two components to it. Essentially, there are two components to it; one is the content driven part, the other one is the feature or the product the kind of features that the product provides with to its

customer to its end user. Now, that is a constant debate between the advocates of these two groups.

People say that literatures you would see people or researchers across the field would say that web is more towards how do you design the information, put together information and present it in a way that is more palatable to the end users or the customers. While the other group will say that its more towards how you provide the features, the kind of features that your users require and how you conceive as a designer those features that would address the requirements of your users.

So, that is a constant debate in these lines. So, considering both the aspects, if you realize the structure that we have discussed; the structure, the five-plane structure, Jesse James Garret tried to combine these two by incorporating the structure that we see in the slide. What he has done is that at every plane of this five-plane structure, he has devised how both these paradigms of work mixed together from surface to the strategy.

So, from the surface what you see are the aspects of both product as a function and product as an information. That is what we have discussed at both the paradigms and both paradigms focuses on the surface as something related to the sensorial experiences, something related to the sensory design aspect of the product.

While you if you move down little bit to the skeleton phase, you realize that its more reflection of how the information design has happened, how the interface design has been put together and how the navigational design has been put together.

As you move down to this structure, you realize the aspects that are related to product as functionality are more towards interaction design. While as information, it is more towards information architecture. So, these are the ways through which things have been tied up in the planes proposed by Jesse James Garret.

As you move down to the scope plane, you realize that product as a function is more related to the functional specifications of the products of the features that have been designed. While as an information, the focus is more towards the content requirements of the product. And finally, we will have the strategy plane, where both product as a functionality and product as an information focuses on the user needs and the product objectives. We will discuss this in detail in these slides.

So, when you see the surface element; that means, when we are talking about the visual layer of the web page that is the images, the illustrations, the menus, everything that is visual to us, all these visual elements trigger a sensorial experience right; that means, we see it right and if its aesthetic, if its visually appealing, then we feel happy about it. There is a level of satisfaction, there is a level of persuasion that happens and that is all what we are referring to here as sensorial.

Because it is the five senses through which we take information about the first layer of engagement of the web page that is more visual. That is what we are referring to and we have an experience about whether we like it or dislike it. And as we move down to the skeleton plane, we focus first of all more on the information design aspect which is towards presentation of information in a way that facilitates understanding.

So, the goal and the objective here is to focus on how do you present information through your web page or through your web application so that its users are able to relate with it ok. The content allows the user to understand what it means right. So, it should facilitate understanding. Now, for functionality-oriented products, skeleton also includes interface design right.

So, now we are talking about the structuring of the or the layout of the elements, arranging interface elements, to enables to interact with the functionality of the system. How are you arranging the visual elements; what is the layout that you are using for them to for your users to understand and use those functional aspects. The interface for an information resource is its navigation design, the set of screen elements that allow the user to move through the information architecture.

So, you have something called information architecture and the way that you have designed the navigational aspects allows the user to move from point a or site a or the feature a to the feature b or site a to site b or location a to location b in the web space.

That is what we are referring to the navigational design aspect. Now, the scope is given structure on the functionality side through interaction design and we know what we are referring to when we are using the word interaction design. In our last lectures, we have discussed about that.

So, in this we define how the system behaves in response to the user. So, we are here, we are referring to the dialogue that the system has established or is establishing with the user. There is a trigger, there is a query from the user side and there is a response from the system. That is what the dialogue we are referring to; that is what we mean when we say that we define how the system behaves in response to the user.

Now, for information resources, the structure is the information architecture, the arrangement of content elements to facilitate human understanding. Remember the goal is to facilitate human understanding; the goal is to relate to the prior experience of our customers because if it does not facilitate what they already know, then what happens immediate there is a disengagement between your user and the product.

So, they understand any new design based on the cues that you provide and these cues should be related to what they know from the past. That is how they understand; they can relate with what is happening with the presented to them, even if the interface or the product is very new to them and they are the first-time adopters for the product.

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So, what do we mean by functional specifications? We mean a detailed description of the feature set of the product on the information side, scope takes the form of content requirements. So, functional specifications relate to features, product features that are being provided; while on the information side, scope when we talk about the scope plane it is related to content requirements.

Content as in what kind of text, what does it mean, those kinds of contents. A description of various content elements that will be required right. It is very important descriptions are provided so that they can understand it. See, focus is on understanding.

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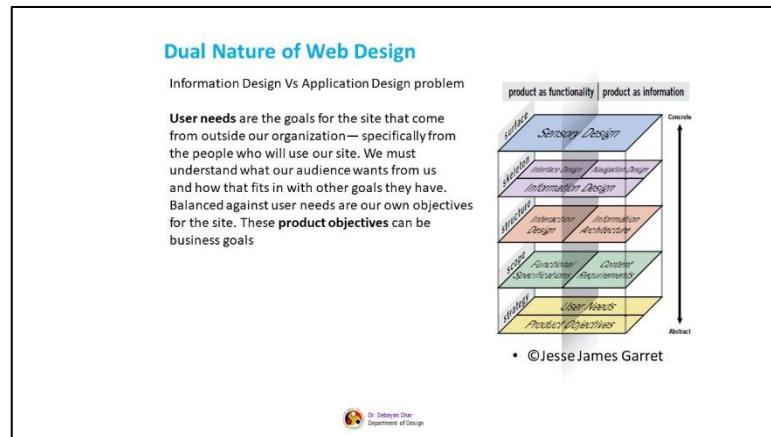
As we move towards the last plane that is the strategy plane, now here what we realize is we start with focusing on the user needs right. We here at this stage, we are more concerned about the goals that your users have in mind and based on which they start interacting with your product because they are here to reach the goals.

So, user's needs are the goals for the web application of the site that come from outside our organization that means once we are aware or we conduct extensive user study, we define what are the requirements are.

So, this comes beyond this design group, who is designing for the product. It only comes if you conduct a good ethnographic study; a study that would allow you to understand your users more closely. In a way that would help you to realize that this is where my users, my customers have or face issues.

That is what they have problems in addressing, their frustrations, their pain points, their motivations right, all these information's are important for us to get to what we know as user requirements or to realize what our requirements for our customers are. Now, we must understand what our audience wants us wants from us and how that fits in with other goals they have.

Balanced against user needs are our own objectives for the site. These product objectives can be the business goals. So, what does that mean is that essentially, we are focused on addressing user requirements and that is possible if we conduct a user study, understand their issues and extract their requirements and bring it to the table.

It is also important that we realize what the objectives of our stakeholders are and that is when we can work towards the interface or the match between the user requirements and the product objectives because the stakeholders are there to ensure that they get return on investment right. They are going to invest an amount of resources so that there is a benefit for them and they want to return against their investment.

In order to ensure that there is a return for investment, we must ensure that the user requirements are defined accurately, user requirements are defined in a way that is valid and that exists for sure; that means, we do not conduct anything just for the sake of conducting user studies.

We need to go to the place of the users, we need to interact with them so that we understand their requirements. And then, once we have that we also need to understand our stakeholders, their strategies, the kind of objectives they have and we must ensure that these two gets married together.

So, the users' goals and requirements have to get married with the product objectives which are essentially the business goals for any organization or any group. Now, that is what you see or you realize when you understand Jesse James Garret these five layers of user experience and why they are called as layers of user experience?

Because you would realize that as we move from the abstract plane which is the most abstract plane that the strategy plane which is the first stage of our design process, where we define the user needs and define the product objectives, as we move towards the more concrete surface, we gradually shift this convert this user needs or product requirements into a visually appealing web application website.

So, this is the conversion of the abstract requirements, the user needs the project of the these are abstract elements in terms of these are like these are just statements that have been gathered by the design team and these statements gradually gets migrated towards the surface, where we see the interface and if you follow each of the plane, you would

realize the objectives at each plane. So, from user needs and product objectives, we move to defining the functional specifications and the content requirements.

Then, we move towards defining the interaction design, designing the dialogue between the system and the user. The information architecture that allows how contender clustered and the hierarchy is being defined. We move from here to interface design navigation design and information design right and from there, we finally, move on to get the interface that we see in front of us through which the user interacts with the system.

So, understanding the Jesse James Garret model allows us to understand the structure of how user experience is modelled. It also allows us to understand a bit about the design process, its goals, its objectives, its requirements and it will allow us to also understand how should we ensure that a good usable product can be designed because that is what essentially, we are learning in this course.

We are trying to ensure that we engineer features, we engineer ways through which our products become usable that is what this course is called as Usability Engineering. So, with this what we would do now is that we would now finish this module 1 and we will move towards the next module, where we talk about the software design process and the role of usability in the software design process.

Thank you.