

**Visual Communication Design for Digital Media**  
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**Lecture - 11**  
**Design Semiotics and Visual Perception Part-III**

Welcome students to the online NPTEL course Visual Communication Design for Digital Media. And in the previous two lectures, we have discussing on a design semiotics and visual perception, we did an elaborate discussion on visual semiotics what are the different segments of semiotics and how do they work and with examples. We have learnt them. And right now let us move on to more detail of how people how the user perceive different icons or photographs, and what is the visual perception process or the visual cognition process cognition means when the user sees photograph or image or icons, and what is the mental processing happening and how their perceiving, and how what kind of analysis is happening within the brain. And after that what is the meaning making happens and that is the process of total visual communication.

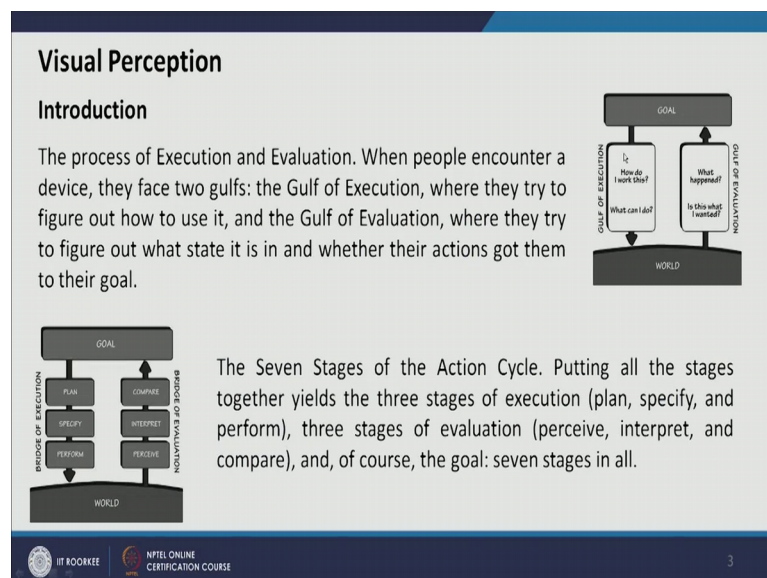
So, visual stimuli and then perceiving or seeing them and then mental processing and then coming to a meaning; so, we will come to the visual perception part and we will discuss that. So, in this visual perception part we have we will discuss about the what are the visual design principle perceptions and how this happens and we will discuss this from the base basic book what you can concert is a Donald Norman's design of everyday thing from that we are going to discuss; we are going to start of a discussion and the stages of actions as design aid; what kind of actions user take after seeing something and then we will come to the different theories of visual cognition what are the; so, these theories which we will discuss in the end are comes from on psychological testing.

So, this there are ethnographic survey with lot of people and this is the generalized theory. So, these theories happen with most of us. So, there would not be much variation about those theories. So, so it is better to know those kinds of theories and how people perceived if you make some kind of imagery or some kind of composition how people perceived them. So, initially in the previous two lectures while we are discussing designs semiotics and the theories of semantics pragmatics and syntax we were discussing about

a particular icon and particular image and particular photographs, right. Now we will more or less discuss about the composition.

So, how we look at the composition where the focal points where are the different emphasis rhythm harmonium all these principles; so, design principles what we have read earlier and with the help of elements of design even with the with the help of typography and other things. So, how a holistic composition holistically appears to a user that will come to the theories of visual cognition; so, first in the introduction you can see in this diagram the process of execution and evaluation how it happens.

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So, here the goals are on the top it is from the designers end and the world is like a when the when designers are designing and give it to the world or its open to the; for the user and the view or.

So, there are two way of communication one is the designer is designing and its design is being executed. So, this is the process of execution. So, how it works; how do I work these and those are the questions designers think in their mind and then what can I do and what will be the final design and that is and that goes to the world and then the questions, the users think in terms of the designed in terms of the interaction with the design in their mind is this what I wanted. So, first they think that and then what happened. So, that is the interaction part of it and then can they achieve to the goal and can they find out what the design is for is useful for them or not. So, the Donald

Normans this is the photographs and imageries are taken from the Donald Normans book I have mentioned the design for everyday thing.

So, the seven here also says the there are seven stages of action cycle which goes from users to this to a parameter one is the goal which is the designers end and to the; to the world to the users or the receivers end. So, that we all we will also discuss and he is also telling that there are 3 different levels of perception.

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**Visual Perception**

**Three Levels of Design Perception**  
Three Levels of Processing: Visceral, Behavioral, and Reflective.  
Visceral and behavioral levels are subconscious and the home of basic emotions. The reflective level is where conscious thought and decision-making reside, as well as the highest level of emotions.

**Three Levels of Processing**

- Reflective
- Behavioral
- VISCERAL

Design of Everyday Things, Donald Norman

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So, one is the three different levels are one is visceral and one is the behavioral and another is reflective visceral and behavior levels are subconscious. So, it happens instantaneously without any much level of cognition and then the reflective level is where the conscious thought and decision making and process is involved as well as the highest level of emotions are also involved and all this socio cultural background and every cognition will be involved in the reflective level of cognition.

So, the first is whenever we look at something and the first impression we get is a wizard level of impression. So, without any much mental stress or mental cognition or mental processing we perceive something and then with after certain level of mental processing we come to the behavioral experience of the visual or the product and then reflective is much more when we start thinking. So, it is more like denotative meaning. So, sorry connotative meaning and all the perception and thinking and reasoning and these things are involved in the reflective perception.

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## Visual Perception

### Three Levels of Design Perception

Levels of Processing and the Stages of the Action Cycle:

**Visceral response** is at the lowest level: the control of simple muscles and sensing the state of the world and body.

**The behavioral level** is about expectations, so it is sensitive to the expectations of the action sequence and then the interpretations of the feedback.

**The reflective level** is a part of the goal- and plan-setting activity as well as affected by the comparison of expectations with what has actually happened.

Design of Everyday Things, Donald Norman

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So, the visceral response as it is written is at the lowest level or the control of the simplest muscle and the sensing a state of the world and the body as we are saying the it is a instant instantaneous perceive. So, the process involved here is just perceiving and then there is the next process is interpretation. So, after that; so, there are some interpretation of meaning can happen within a very quick time frame. So, it is about expectation. So, it is the sensitive at the expectation and the action sequence level and then it is then we start thinking and comparing based on our previous mental model. So, the way we are a programmed and way we have seen the previous things. So, that come stays in our memory and we start comparing with our previous experience and then we start thinking in terms of reflective layer.

So, that is the process of user's perception. So, two hours from the designer send to the user sense. So, there will be first planning. So, a first designer has to plan and that designer has two things first and thinks about all this processing user will do in their mind. So, first designer should think about the reflective layer. So, what is the highest level of thinking? So, the most complex thinking and meaning making process should be first thought and sorted a sorted. So, that is how Donald Norman is dividing the thing and then we should specify the designer should specify the smaller integral parts that is the specification level and that is corresponding to the behavior behavioral experience of a design and the next is the perform how things perform.

So, for example, the e y transitions and all these things the small things like when you click and something pops up and the weight pops up or the way it the one bread crump comes again and in a drop down menu the weight comes. So, these can be the performance and a very wizard level of design and the then specifications like colors and minor specifications of buttons what kind of look and fill it generates like whether it has sharp age like may a Google’s material design or be willed and more skeuomorphic experience that kind of things; we will come in the specify of behavioral level and then reflective level will be the total information architecture; how things work and how what is the execution process of the webs in case of web application and the holistic total formulation that will be the reflective layer of design.


And then as we were discussing this there are seven stages of actions and design aids that happened between the user and the designer. So, that also corresponds from the same diagram, but this has been taken from the design of everyday things Donald Norman. So, we can look at this these are the 3 actions happening from users sorry from designers end to the users end. So, designers first plan then specify and then the things about the kind of performance it will give. So, these 3 things are from this direction and the other 3 things are from receiver's end to the; or the target audiences end to the design. So, how it performs performance towards the performance is visceral the perceiving first and then interpreting and then compare. So, from that we have what happened.



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## Visual Perception

### The Seven Stages of Action as Design Aids:

Each of the seven stages indicates a place where the person using the system has a question. The **seven questions** pose **seven design themes**. How should the design convey the information required to answer the user's question? Through appropriate constraint and mappings, signifiers and conceptual models, feedback and visibility. The information that helps answer questions of execution (doing) is feedforward. The information that aids in understanding what has happened is feedback.





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That is the perceive level and then what does it mean that is the interpretation level and is this.

So, how whether the goal; goal is fulfilled or whether other things are in the right direction or whether the complete process is achieved. So, that is the comparing and the highest level of perceiving and then towards the designer to the users end its like planning is what are the alternatives that we have to a plan and what are the different ways to achieve goals. So, that is the planning and the biggest on the border or the holistic problem solving and then specifying what can I do how what specific path can designer take to achieve that goal that is specifying that is corresponding to the behavioral level and then how do it how do I do that.

So, that is the minor fine finest specifications of the way it happens the; for the example the U I transitions and the overall experience of the web application that is this that is corresponding to this. So, it is feed forward and that is the designer and towards the that is the feedback. So, users experience and towards the product and together it is what do I want to accomplish that is the goal. So, that is the highest level of that is the whole holistic the level of action. So, that every other 6 actions comes under the umbrella of the; what has to be accomplished what is the goal or the product. So, what designers give to the world that is the under that action all this other 6 actions are under this umbrella.

So, again different stages; so, each and every stages the questions raised for each and every stages like what each and every stage does he have given each terminology for each and every stages.

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## Visual Perception

### The Seven Stages of Action as Design Aids:

The insights from the seven stages of action lead us to seven fundamental principles of design:

1. Discoverability: It is possible to determine what actions are possible and the current state of the device.
2. Feedback: There is full and continuous information about the results of actions and the current state of the product or service. After an action has been executed, it is easy to determine the new state.

The diagram illustrates the seven stages of action as design aids. It starts with the question 'What do I want to accomplish?'. This leads to a cycle of questions: 'What are alternatives?', 'Is this okay?', 'What can I do?', 'What does it mean?', 'How do I do it?', and 'What happened?'. The cycle is labeled 'FEEDFORWARD' on the left and 'FEEDBACK' on the right. The entire process is situated within the 'WORLD'.

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So, discoverability is it is the possible; it is possible to determine what actions are possible and the current state of the device and that is the possibility that that is the planning level. And then feedback there is full and continuous information about the result of action. And the current state of the product or service after an action has been executed it is easy to determine the new state. So, that is that corresponds to what can I do that that is the process of this.

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## Visual Perception

### The Seven Stages of Action as Design Aids:

3. Conceptual model: The design projects all the information needed to create a good conceptual model of the system, leading to understanding and a feeling of control. The conceptual model enhances both discoverability and evaluation of results.

The diagram illustrates the seven stages of action as design aids. It starts with the question 'What do I want to accomplish?'. This leads to a cycle of questions: 'What are alternatives?', 'Is this okay?', 'What can I do?', 'What does it mean?', 'How do I do it?', and 'What happened?'. The cycle is labeled 'FEEDFORWARD' on the left and 'FEEDBACK' on the right. The entire process is situated within the 'WORLD'.

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And the conceptual model the design projects all the performances needed to create a good conceptual model and of the system leading to understanding the feeling of the control the conceptual model enhances both are discoverability and evaluation of the result.

So, conceptual model is also like a designer has a conceptual model and user has a conceptual model. So, these two conceptual model should blend to each there and should overlap and the weight is the more they are integrated to each other and more they are matching to each other the better the user experience will be and then its affordance does the proper affordance exist to make the desired action possible. So, it means all actions that are physically possible. So, those all the options those are opened to go to go to the goal is all affordance I will give the example of this then the concept has applied to design it start is also referring to only those actions possible in which we were aware of as we are discussing that the mental model of the conceptual model.


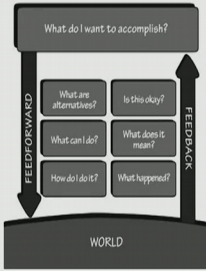
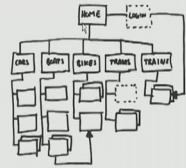
So, in design in case of design and actual definition of affordance all the possible paths of going towards goal is affordance, but in terms of design like all the possible paths which are acceptable which are commonly acceptable are affordance for example, if you take an example of an information architecture. So, here you can have a look at this. So, information architecture generally looks like this.

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**Visual Perception**

**The Seven Stages of Action as Design Aids:**

- Affordances: The proper affordances exist to make the desired actions possible. It means all actions that are physically possible. When the concept was applied to design, it started also referring to only those action possibilities which one is aware of.



The handles on a tea set provide an obvious affordance for holding.

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So, you reach on to the home page and then there are for example, here there are 5 options. So, 5 tabs are there under each and every tab you can go to the other different pages if you are click on to the dropdown of each and every tab. So, here from one tab you can go to the other tabs one link; so there linked. So, for example, one possible way of physical possible of going towards this section is straight going towards this menu and going next and this is the possible path.

And another possible path is following this path and going back to this menu another other possible paths will be you can go to the other menu explore and then come back to this menu and then again reached this. So, these are the various possible ways of information architecture and it depends the user friendliness depends on how quick you are reaching towards the information architecture that depends on how well the information architectures are laid and how well they are how much comprehensible they are towards the user for other example.

You can see there is a handle of when we look at the teapot we understand; the tea will be there and we will hold the teapot from this side and that we will 4 tea from this side, but in case if you; if the proper planning is not being done and the proper a possibilities of affordance has not been established, then they can be wrong and absolutely impossible design of a teapot where we can hold holding the teapots; the system of holding the teapot and the from where the tea will come out is on the same side.

So, this is an design which communicates that this not in useable design this is this just communicates there is not possible this kind of designs are not possible to deal with. So, there is no possible way of affordance to a particular to go to the particular goal. So, next is signifier. So, signifiers; this signifiers is different from the signifiers we were discussing in under the chapter of semiotics and under semiotics. So, here its effective use of signifiers ensures discoverability and that the feedback is well communicated to towards the intelligible. So, the signifiers has to be; we can discovered the proper use of the product.

So, if we look at a product; it should communicate the meaning towards the user. So, that they can use that and even the visual communication and the web architecture the information architecture of a web should communicate the user and the proper after proper action from the user; it should go; it should give expected outcome and then there

is mapping the relationship between the controls and the actions follows the principle of good mapping.

So, if there is a control and the actions are coherent and then the mental mapping; so, what user perceives because the information architecture what we are showing; user do not see that they perceive the in information architecture and though we are like this; we perceive the information architecture first and then we work out the detailed model. So, we are going towards this process and you users are going towards the reverse process.

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**Visual Perception**

**The Seven Stages of Action as Design Aids:**

6. Mappings: The relationship between controls and their actions follows the principles of good mapping, enhanced as much as possible through spatial layout and temporal contiguity
7. Constraints: Providing physical, logical, semantic, and cultural constraints guides actions and eases interpretation.

What do I want to accomplish?

FEEDFORWARD

What are alternatives? Is this okay?

What can I do? What does it mean?

What happens?

FEEDBACK

WORLD

AA BATTERIES

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They start looking at the U I transitions they start a deciphering the meaning and then finally, they understand the information architecture of a web page. So, they understand the holistic plan later. So, how will they understand? So, the better they will navigate through the website. So, this final processing of all this informations and correlations happen later and with higher degree of visual cognition and next is the constraints.

So, providing physical logical or semantics and culture cons constraints guides actions and k is interpretations for example, if you take a physical product design. So, there are particular batteries and battery slots. So, they are shapes and they are signage science like we have a positive and negative signs in the battery we also have the positive and negative signs in the slots. So, and also their shapes and everything matches to a user understand this must be the battery slot. So, is a very trivial example and another in terms of web design we can have that there are through colors shapes textures and

illumination we can highlight which buttons are clicked for example, if you look at this image. So, here there are four tabs one is file home share and view.

So, with the help of different color and different color of the text and different color of the background we can understand this file button is the main button, but the home button is clicked over here because it is the line continues from here and everything all these buttons are under home button. So, home buttons are different differently dealt in terms of visual design. So, everything has been designed by a designer and then it has been coded. So, this; in this Microsoft office this application; so, here the home button is written in a different way all these lines and everything are different in this button, but here in the share and view button they are different.

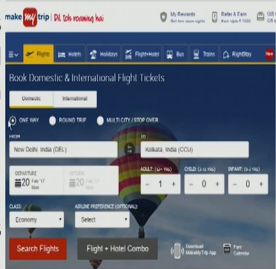
So, this line does not continue over here and the file is the main button where you will look you can understand the location of the file and everything. So, it is treated differently in the button. So, we can understand this home button cannot be clicked again because it is already clicked and the other buttons we can click. So, the constants says because of the different visual style and our previous knowledge that this means something that we cannot click on this button because it is already clicked and this kind of informations are already are perceivable be based on our previous experience. And another example is when we are booking a flight sometimes you must have seen there are options in most of the flight booking applications web applications.

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**Visual Perception**

**The Seven Stages of Action as Design Aids:**

6. Mappings: The relationship between controls and their actions follows the principles of good mapping, enhanced as much as possible through spatial layout and temporal contiguity
7. Constraints: Providing physical, logical, semantic, and cultural constraints guides actions and eases interpretation.



The screenshot shows a flight booking application interface. It features a search bar with 'New Delhi, India (DEL)' and 'Kolkata, India (CCU)' entered. Below the search bar, there are filters for 'CLASS OF SERVICE' (Economy), 'CARRIER' (Select), and 'FLIGHT TYPE' (Flight + Hotel Combo). The interface is designed with a clean, modern aesthetic, using a color palette of blues and greys.

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So, we can look book one way flight or you can book around trip or multi city trip. So, if we click on the one wave trip button automatically the arrival or return date is the color of this date and the calendar icon becomes lighter and only the departure date; the calendar icon and the dates become highlighted. So, we can understand that this cannot be clicked because this, but already, but the information is important for the user. So, that they know that there is a possibility of round trip and so that we can have a return date as well. So, this kind of information is also given, but based on our previous experience and the theories of semantics theories of a visual perception because this is highlighted because of the contrast color contrast and value color value contrast we can understand only this part is active right now and the other thing is the constant we cannot do this processing and we cannot go to ours this line of information architecture.


And as we I was discussing. So, finally, the user's conceptual; user's mental model and designers conceptual model the way from where in the weather it is going from these directions in this direction this is user's mental model. So, user is having some particular set of mental thought and based on that they are constantly evaluating the design and constantly perceiving the design. So, that is through happening through the user's mental model or what is already there and then analyzing and comparing the design and then this process the designer's conceptual model. So, design designer first conceptualize some model and give it to the world or give it to the user.

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**Visual perception**

**The Designer's Model, the User's Model, and the System Image**

The designer's conceptual model is the designer's conception of the look, feel, and operation of a product. The system image is what can be derived from the physical structure that has been built (including documentation). The user's mental model is developed through interaction with the product and the system image. Designers expect the user's model to be identical to their own, but because they cannot communicate directly with the user, the burden of communication is with the system image.



Design of Everyday Things, Donald Norman

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So this designer's conceptual model if that matches with the user's mental model or users conceptual model then the system image or the complete holistic image of the product or the experience the user experience of a product or user experience of any website web application game design or animation or visual communication is enhanced or better.

So, all these outcomes; it can be in a domain of animation it can be in a domain of web application or just communicative poster digital poster all these have some user experience. So, user it cannot have. So, user without any user experience it cannot big communicative it cannot be the product cannot communicate with the user with without and experience. So, always people will user will pursue something and they will experience something and they will memorize if the experiences; I mean drastically good or it can be drastically bad. So, they will memorize the thing and that will eventually at to there a mental model. So, in the when they say look at the next design all this previous experience of user experience will be accumulated as a mental model of the user.

So, based on that framework they will evaluate the next design. Now we come to the visual design principles as we were discussing that these principles are based on lot of survey and lot of; after considering the similar kind of pattern in different user's behavior. So, there was there were user be behaviors and similar kind of patterns are followed in their behaviors.

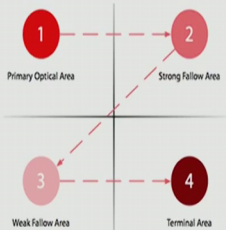
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**Visual perception**

**The Gutenberg Diagram**

The Gutenberg Rule is used to show a user behaviour known as **reading gravity**, the habit of reading left-to-right, top-to-bottom. It is represented by dividing the visible content area in 4 quadrants:

1. Primary optical area;
2. Strong fallow area;
3. Weak fallow area;
4. Terminal area;



The diagram illustrates the Gutenberg Diagram, a 2x2 grid divided by a vertical and a horizontal line. The quadrants are numbered 1 to 4. A dashed red arrow starts at the top-left quadrant (1), moves right to the top-right quadrant (2), then down to the bottom-left quadrant (3), and finally right to the bottom-right quadrant (4). The quadrants are labeled: Primary Optical Area (1), Strong Fallow Area (2), Weak Fallow Area (3), and Terminal Area (4).

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So, these kinds of laws are laws came from that perspective. So, this is essentially bottom of the theories came from a bottom up approach of or qualitative method of research and looking at people during ethnographic survey or finding the bottom up or inductive way of research not from not coming to a theory and then validating, but looking at people and looking at their behavior finding a pattern and then arriving at a theory.

So, first we will talk about Gutenberg's diagram as we were discussing earlier Gutenberg first invented the press. So, after that there was bible was first printed and then there was a lot of newspapers and other pamphlets for printed during the industrial revolution and renaissance era of Europe. So, that time based on lot of pamphlets printing and the users reading pattern Guttenberg theory of reading gravity is derived from that. So, reading gravity means where we start looking at and; however, I moves in a text heavy composition. So, here we are not king about lot of visual and text there can be a mix of a visual and texts and, but mostly homogeneous and where we have to read start reading. So, here preconceived notion of reading habits are translated.

So, in most of the cases apart from Urdu and Arabic scripts who are more predominantly Urdu and Arabic scripts reader; we start reading from left to right. So, we if in a image we start looking at the left to right direction we start reading from that and we start reading from top to bottom always. So, first is the first heavy primary focal optical area is left and top. So, here we our eyes go first if you start reading this and then it follows to was a strong follow area. So, we start reading this. So, this is the next thing, but our I does not stay there much and then it goes towards this week fellow area and here is the terminal thing because of two different direction one is this way left to right and another is this way top to bottom.

So, this is the heaviest line. So, one to 4 is the most important diagonal line which is created because of two different vectors one is from left to right another is from top to bottom. So, one is the most important area and then 4 is also heavy because from here we turn the page. So, we look at what it is written at the end of the page and that also gets a second priority in the hierarchy and then the strong fellow area what from one we have our eyes will be drag towards this. So, this is the strong fellow area and this part generally in the 3 the segment 3 we overlook lot of information.

So, we know in our rectilinear composition which parts are most informative and people can devote more time in this kind of areas. So, here most important function buttons should be there. And most important actions which we want the users to be performed should be there and most important informations in terms of visual communication has to be there. And the least important things can be there in the this zone which is marked as tree.

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**Visual perception**

**The Gutenberg Diagram**

The Gutenberg Rule is used to show a user behaviour known as **reading gravity**, the habit of reading left-to-right, top-to-bottom.

It is represented by dividing the visible content area in 4 quadrants:

1. Primary optical area;
2. Strong fallow area;
3. Weak fallow area;
4. Terminal area;

The slide includes a screenshot of a Snapdeal product page for a 'LG 43LA5N7T 108 cm (42) Smart Full HD LED Television'. A red box highlights the 'ADD TO CART' button, which is located in the terminal area of the page layout.

Footer: IIT ROORKEE, NPTEL ONLINE CERTIFICATION COURSE, 15

So, here if you take an example of a snap deal webpage here the snap deals brand logo the name and all the information search buttons which is very important because it is a product e commerce site and we have to search products. So, these buttons are there and sign in and these buttons are important you might not even sign in and start purchasing. So, these are also important, but not as much as the icon of the brand and the name of it and the search button and add to cart is here, but the most important thing is you can look at it is by now or add to cart which is written in bold and has bigger tabs. So, here these are the same things, but here because of this is in the fourth.

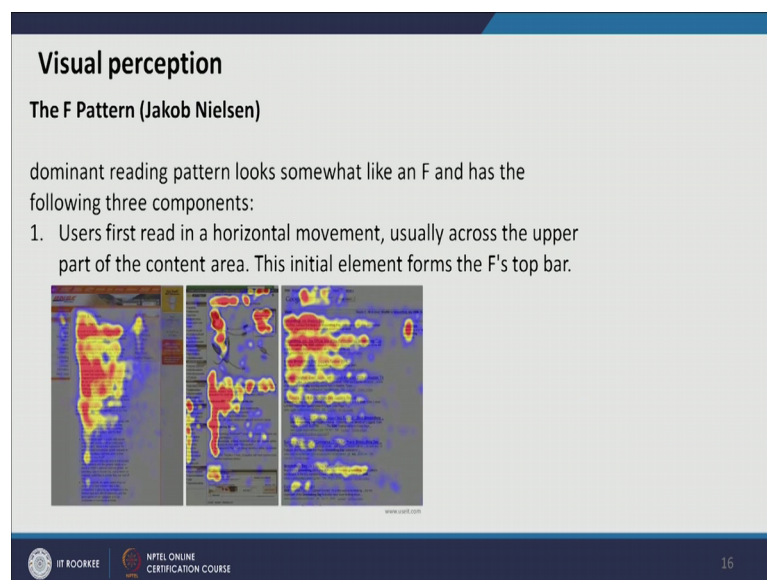
And most and the next important zone this is highlighted and from here they will our eye will end here and because of the and also the process of purchasing matches with our eye movement.

First we start here looking at the products and products names and everything and we go into detail and look at the how much what is the price of this and if you look at this the as

we were discussing the third quadrant more or less it comes here it is almost vacant most of the informations are not there. And the informations are here there are no such information is which are processable and which needs users attentions, but here there are more important informations like add to cart and purchase now which is persuasive and e commerce site has to the add two cart button. And purchase button has to be very very much visible, but that comes after checking out the products detail and all this things. So, forth button or the buttons it off add two cart and by now is there in the fourth quadrant it could not have been the other way round. So, it could not be placed here first you can you cannot add to cart and then look at the product.

So, that does not happen. So, this also corresponds to our user's eye movement and the way we look at. So, we will also introduce you to the one equipment that is eye tracker you must have hard about this. So, the way this is like a glass and user where is it and user testing can happen based on that and we can take the data of where people are looking at. So, in which directions user a looking at and which are the more interesting areas it can it can tell you in terms of and it can generate a heat map and from the heat map in you can decipher the areas which are more most important.

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**Visual perception**

**The F Pattern (Jakob Nielsen)**

dominant reading pattern looks somewhat like an F and has the following three components:

1. Users first read in a horizontal movement, usually across the upper part of the content area. This initial element forms the F's top bar.

The slide includes three heatmaps showing user eye movement patterns on a webpage layout, illustrating the 'F' pattern. The first heatmap shows a strong horizontal bar at the top. The second heatmap shows a vertical path down the left side. The third heatmap shows a combination of horizontal and vertical paths. The source 'www.usability.gov' is visible at the bottom of the heatmaps.

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So, similar things has been done by Jacob Nielsen is based on Guttenberg's diagram and he have tasted some of the informative page layouts Jacob Nielsen has been is tested with some users.



So, we have given 3 different pages and he has tested with eye tracker and this is the heat map generated from this eye tracker testing. So, here we can see the heat maps here the blue and the lighter of the cooler color depicts they are less amount of time devoted on this area and the higher the hotter colors is depicting there are more amount of time devoted here. So, a thesis has higher attraction values. So, from here it is also says. So, this part is important and here in this case there were no such information over here. So, it is not visible in this case you can see one this is highlighted and this is also highlighted. So, first quadrant and second the fourth quadrant is also highlighted and we can see some in the second two refund fellow areas there are also some spots.

So, here from here he is saying because our reading habit and we scan the informations and we read some lines and then jump and again start reading there. So, Guttenberg's diagram happens in multiple segments and multiple breaks. So, here we start reading and then we skip some areas and in then again start reading from here. So, that we do not miss lot of information. So, we start concentrating and then concentrations again starts after few lines to here you have given a model of f shaped diagram. So, we start reading then skip something and then again start reading. So, that in terms of scanning in terms of fast and quick scanning.

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**Visual perception**

**The F Pattern (Jakob Nielsen)**

2. Next, users move down the page a bit and then read across in a second horizontal movement that typically covers a shorter area than the previous movement. This additional element forms the F's lower bar.
3. Finally, users scan the content's left side in a vertical movement. Sometimes this is a fairly slow and systematic scan that appears as a solid stripe on an eyetracking heatmap. Other times users move faster, creating a spottier heatmap. This last element forms the F's stem.

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So, this is described here the next is rule of third we some of us we are also associated with photography and visual communication might have seen that in camera also this kind of grid appears.

So, that it develops the complete rectangle into 9 different segments and here after the dividing; so these kinds of segments. So, these 4 dots if you place our main subject or focal points in these 4 dots or composition looks interesting and interesting in terms of like if you if you put your composition if you put your main focal point of the composition directly at the centre all the other background become stall because our eye in a in a victorial composition before we are discussing about the Guttenberg's principle and f shape diagram was text heavy. So, when we are reading text our mind behave differently and when we are looking at a picture and image we know that we do not need to read it and we do not we just perceive then our eye behave differently we look at the centre first.

So, if our main focal point is at the centre we skip lot of things which is there around the main subject. So, other part of the image it does not have it; does not get much emphasis and our eye does not move. So, one of the criteria of a good composition is the users eye should move around the composition and all the information should be red. So, if we give our main focal point of the centre. So, the a rest of this part gets does not get the highlight and our eye does not go, but if you give our subject areas at these 4 points we

start moving the users start moving they raise because they are not at the centre and they are the corner.

So, they start moving in a different direction and the complete composition gets a holistic understanding and it is also perceive that if we put our main subject here and the composition looks balanced and it is also give some interest towards the user and there are some leading lines if there are different lines if they are leading towards one line and if they are diagonally leading towards one corner it adds to a some dynamic dynamism in the composition.

And then we know the golden mean proportion if we find if we establish a golden mean ratio in our composition in our graphics.

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**Visual Perception**

The Golden Ratio

$$\frac{a+b}{a} = \frac{a}{b} \stackrel{\text{def}}{=} \varphi,$$

The slide features two images illustrating the Golden Ratio in architecture. The top image shows a set of stone stairs with a white railing, overlaid with a white circle and a vertical line that aligns with the Golden Ratio. The bottom image shows a view of a city with a large cathedral and other buildings, also overlaid with a white circle and a vertical line that aligns with the Golden Ratio.


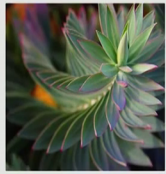
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And in our photography then it looks interesting because these kind of shapes Fibonacci series and golden mean ratios looks interesting and perceives as a good composition and people feel this compositions are aesthetically in better even in the architecture Greek architecture pattern and these kind of proportions has been established and because this proportions are interesting because these kind of proportions are found in nature.



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## Visual Perception

Patterns and Repetition



Patterns are aesthetically pleasing. But the best is when the pattern is interrupted



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So, you can think about a conch shell which also has this similar kind of pattern and even this kind of rectangle golden mean rectangle the ratios can be found in human body you can check vitruvian man by Leonardo Dale Vinci his (Refer Time: 39: 05) man is derived from this golden mean ratio and also if there are animally if there are some interesting animal is and different things in the pattern then things looks interesting for here you can a perceive this as a pattern and here only one color is different only one element of design is strange over here. And so it looks interesting and it give some elements of a sum focal point in the composition.

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## Visual Perception

### The Gestalt Principles

*Gestalt* is a psychology term which means "**unified whole**". It refers to theories of visual perception developed by German psychologists in the 1920s. These theories attempt to describe how people tend to organize visual elements into groups or unified wholes when certain principles are applied. These principles are:

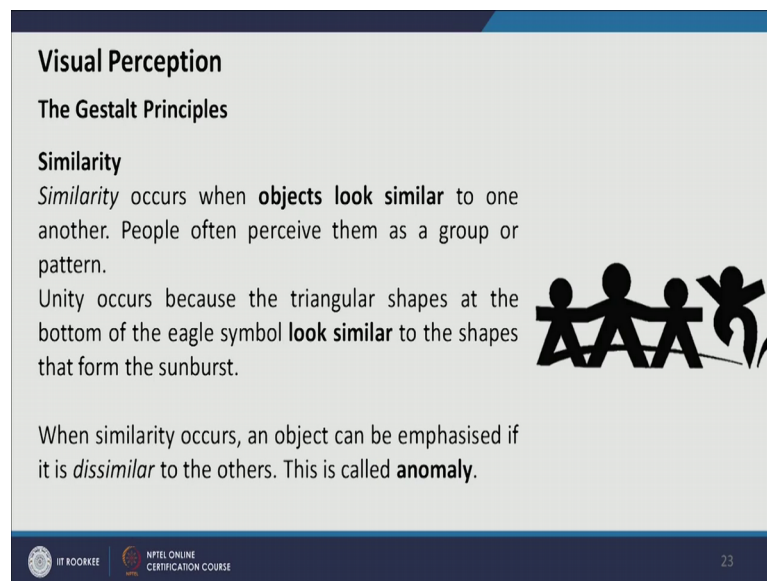
1. Similarity
2. Continuation
3. Closure
4. Proximity
5. Figure & Ground

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Then we come to the Gestalt principle of similarity. Gestalt is a Gestalt principle evolved from the psychology and it talks about the unified whole and perception of whole to part or part to whole perception. So, these principles are evolved from a German; if a psychologist Gestalt in the nineteenth century. So, there are 5 things: one is similarity, then continuation, then 3 is closure, then 4 is proximity, and the 5 is figure and ground relationship.


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**Visual Perception**  
**The Gestalt Principles**

**Similarity**  
*Similarity* occurs when **objects look similar** to one another. People often perceive them as a group or pattern.

Unity occurs because the triangular shapes at the bottom of the eagle symbol **look similar** to the shapes that form the sunburst.



When similarity occurs, an object can be emphasised if it is *dissimilar* to the others. This is called **anomaly**.

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Gradually one is similarity is like objects which look similar are perceived similarly; perceived as a group and if there are some something which is different and perceived as anomaly and which is the other thing.

So, here if we look at this image; so, these 3 all this icon (Refer Time: 40:41) explain explains are abstract form of human gesture. So, these 3 things has a visual similarity. So, they are in a group and the other thing is other iconographic depiction of a abstract depiction of a human figure is represented differently. So, he is not the part of the group of these people the similar thing happens over here. So, this is the anomaly of the other thing.



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**Visual Perception**

**The Gestalt Principles**

**Continuation**  
Continuation occurs when the eye is compelled to **move through** one object and **continue** to another object.

**Closure**  
*Closure* occurs when an object is *incomplete* or a space is not *completely enclosed*. If enough of the shape is indicated, people perceive the whole by filling in the missing information.



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So, these all things are based on their colors are group together and these are perceived as a different entity the next is the continuations. So, if there is a continuation of line continuation of color and then we perceive things in a continuity.

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**Typography in Visual Design**

Leading Lines

Diagonals



Photographs by Steve McCurry

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All these line small human beings and all these linear in imageries which is like a boarder they are in a continuity they are leading towards the same line. So, we were also talking about the same fate and if there are felt lines occult felts lines are there. So, those are also leads us to a perceiving holistically. So, those things are also discussed in

principles of design earlier then we have closure based on the theory of closure we perceive things together for example, the dodge logo all this shapes are different they are not joint together.

So, this one and the this shape they are different, but together they communicate the head of the bison even the WW of F logos a panda if you look at that the pandas all this black patches they are different shapes only, but together we can perceive that that has a; even the formula once logo the one is written over here based on the free figure ground relationship the white part is also perceived as f. So, we read the letter f and digit one together based on the figure ground relationship of and disclosure.

But if we if you mentally delete this part and make this white shape and these white shape far then we cannot perceive this one as the backgrounds does not communicate as a the letter the digit one. So, it based on their closure. So, the digit one is perceived.

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**Visual Perception**  
**The Gestalt Principles**

**Proximity**  
*Proximity* occurs when elements are placed close together. They tend to be perceived as a group.

IBM  
Paul Rand

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Even in proximity we can also thing about IBMs logo. So, IBM's logo; these are nothing, but rectangles, but based on the proximity they together communicates the letter IB and M other than otherwise they are just some assortment of rectangles and how they are sequentially arrange there that is also important here.

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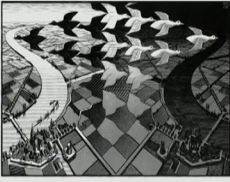
**Visual Perception**

**The Gestalt Principles**

**Figure and Ground**

The eye differentiates an object from its surrounding area. A form, silhouette, or shape is naturally perceived as **figure** (object), while the surrounding area is perceived as **ground** (background).

Balancing figure and ground can make the perceived image more clear. Using unusual figure/ground relationships can add interest and subtlety to an image.



Maurits Cornelis Escher

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So, in terms of figure ground relationship we can think about Escher's painting which has been again discussed earlier we can think about the figure and ground and their dual existence. So, here we can see this acts as a ground and this black birds act as a figure, but this gradually transforms into the white birds here the figure ground actually changes from this line. So, here the white patches are becoming figure and black patches are becoming the ground gradually this way and if you go towards the left the white areas of the composition are becoming the background and the black areas of the composition are becoming the figure.

So, after discussing the semiotics and the principles of visual perception in the next class next module onwards we will move on to more detail about visual trends we need to also discuss the visual trends how did evolve over the time.

So, in the next two lectures we will discuss about the contemporary visual trends. So, what are the visual languages of today's time and then after that we will also discuss the different digital media platform what are the different technology advancement is happening.

Thank you.