Visual Communication Design for Digital Media
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Lecture - 07
Usage of Typography in Digital Media Paradigm Part-I

Hello students. Welcome to the NPTEL online course title Visual Communication Design for Digital Media. Today, after discussing principles and elements of design and also we have discussed different kind of digital media platforms in the previous lectures, right now we will start with the typography.

So, today we will discuss the usage of typography in digital media paradigm. So, because in digital media paradigm, you can take web design from graphics design, animation, game design, everywhere typography will be an integral part of design. So, with graphics with all other information, visual information, typography the text will be there will be present in the any kind of a generous of visual communication design specially in digital media paradigm.

So, in this lecture on typography, this will be divided into two module. First we will discuss about background of typography, we will discuss the evolution of typography in digital media, how it evolved, and then the morphology of typography, how we will identify a particular typography, how the different typography has a different kind of morphology. And then based on this morphology, we will try to classify different typefaces. We will see how this evolved different classifications of typography evolves through ages, and how their morphology changed.

Then, based on that knowledge of typography, we will come to the design come to a visual communication design that will be the second module of under typography. There we will understand the quality of typography of the legibility and the pictorial quality, how much legible that the typography is how much earn it or aesthetics it has. So, there is a function and form both aspects of typography we will discuss. Based on that next will be a selecting on typography for a particular design that we will discuss. And then we will discuss if we are designing a new type spaces from some inspiration board or some mood board, how we can design it face which we will have some visual identity

and visual clue of a particular style, so that we will discuss. And then we will discuss the functional aspects of typography that is how we achieve hierarchy in design.

So, as we discussed in the principle of design there is the hierarchy or emphasis or there will be a visual line, when observe the user is looking at a visual, be it web design or be it a graphic design, there will be a there I will follow up a particular guideline. And there will be an emphasis of focal point into that, so how typography can create that. So, we discuss this with shapes, colours and other things, but with the different morphology of typography with the variance in the typefaces we can also create that, so that will be the discussion and then impact of colour. Because colour is a very contrasting very colour fades away contrasting and rustic impact on typefaces we will also discuss that in the second module.

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So, coming to the first module, so we will discuss the evolution of typography. So, initially the typography if we go back in history it was we started with stone carving. So, the first in ancient Rome and Greek we started the Latin fonts, and even in Egypt and other areas Mesopotamia, there were clay tiles and on the clay tiles, they used to engrave the clay styles and then sun right, so that that was the initial phases of typography. So, it was it came from that paradigm.

And the if we come back to the Eastern side then the Chinese we know they used paper they invented paper from bamboo and other things, and then they used to use ink on

paper as a calligraphy ink, so that was their mode of first typography. And then after that there was a metal casting, copper letters engraved on that, and then cut using stylus on something like wood on wood or on stone cut with chisel that was the initial paradigm of writing paradigm of communication. So, here also we have Devanagari script and the here in this photograph you can see. So, it is engraved on stone that is this was found in India, this was there in ancient India as well.

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So, these photographs are taken from (Refer Time: 05:34) typography. So, this is a very good book on typography you can refer to that. Then we all know during (Refer Time: 05:45) in Europe Gutenberg are made a press. So, well that was when the there was a transition from handwritten typography to printed media. So, a this press give us a opportunity to print the same book in the multiple copy of the same book or the mass production started. So, for that it was not it was very difficult to write a same book again and again. So, using the Gutenberg's press it was much more easy. So, the first thing as we all know it was the bible which was printed in Gutenberg press. So, there was a paradigm shift from handwritten or engraved communication process to print it communication process.

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So, here we can see some examples of handwritten typefaces where we can see the first three rows where hand written typefaces, and the next was printed typefaces which was created in that era. And when we look at the first typefaces, it was evolved from the calligraphy handwritten typefaces. So, here in this picture which is placed in the middle it is actually handwritten gothic style of typefaces that time the good calligrapher used to write something write the book the several these to copy the book by usage of calligraphy. So, this was the style of gothic calligraphy, and this is the Gutenberg's bibles first printed Gutenberg's bibles one page I have shown you. So, this resembles that typefaces which was printed resembles the handwritten calligraphy calligraphic style of that era.

So, in this scenario also we can discuss what was the process of the printing, the designers of the typeface is used to a design the typefaces, they should draw the typefaces, then artisans used to curve the typefaces out of wooden blocks. Then there will be a small letters and there will be capital letters, there were two drawers on the press. So, one drawers use for the small letters, and the other drawers were used for the capital letters. Eventually the small letters were kept in a lower drawer, and the capital letters were kept in a higher upper driver that is why uppercase the name uppercase evolves from that thing, because it was placed in the upper drawer. And the lowercase was placed in the lower drawer for ease of use that is how the name uppercase and lowercase evolved.

And after that these all these typefaces where will be placed on a wax block. And the first print will be done that and after that there will be a proofreading. So, if the print is proper then they will go with the proof, go with the setup or if there is some errors they will pick up the blocks wooden blocks and place it again on the wax mold. And after it is final they will put laid on that, so laid will be casted and that will be the mold of one page that was the process.

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So, yeah that was a process. So, then we come back to the evolution. So, in 15 century Italy, it was initially it was a gothic influence. So, the Lettera anti covers the first style which was evolved from a classical handwritten style. Then Nicholas Jensen of French person he made another print he learned print and printing technology from Germany Gutenberg was a German. So, it started with Germany and then he came to Italy. And Italian style of aesthetic style was little different than German. And from there that typeface is the style of typefaces changed and it became more rounder and lighter inform. So, from that first Roman typefaces generate.

Then there was a many other different fonts including Garamond, Bembo, Palatino, Jenson which was named after the printer the printer who generated this kind of forms with this kind of typefaces. And each and every printers has their own typefaces and people is to recognize the book by looking at the typefaces. So, each and every printer has their own different kind of typefaces and they used to a design their own typefaces. So, these typefaces were generally called humanist. Why these the term humanist that we will discuss under the classification when we will discuss the classification because it has some it has easier legibility and more abstract in nature.

So, if you look at the previous typefaces there were lot of ornate decorations, which was there in because it evolve from the calligraphy style. In humanist form, because it evolved from that Renaissance period that time it was much more simplified. Before Renaissance if we look at the art movement which was also parallel to the typographic movement, there was Baroque and Rococo. So, if you look at Baroque Rococo art style and architectural style it was very ornate and from that the typography initial typography was also very ornate. And later there was a lot of simplification happened in art movement and as well as architecture movement and same reflection also we can see in typographic movement. So, humanist typography movement was derived from was contemporary and derived from that.

So, there was a contemporary revival of historical fonts and it was much more simplified and each revival was respond to a reaction against the as we discuss the ornate style of the old classical style. So, here on the right hand side we can see a lot of juxtaposition of different kind of styles, and how it changed. There they were two more important things, one is the Roman typefaces that were evolved first, and then we know the italic typefaces which were even the same typefaces can have an italic version which is the slanted version which looks again more calligraphic. But it evolves later because of the functional use of it.

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Because, if you see a particular type faces and it is italic version italic version is much more sleek in nature and it is easy to cast. Because as we discussed the first it has to be caused it has to be chiseled on a wood block to make the first block. So, chiseling a straight up right later is was difficult because the artisan is to hold the chisel and chisel it with the hammer.

So, chiseling a italic letter was much more easier because it has a particular slant, and also it was light and it has less material. So, the production cost of a book was less. So, italic font was derived from a economic perspective because of its less material and ease of use and it was definitely faster than the creation process of creating italic font was faster than the roman up right font.

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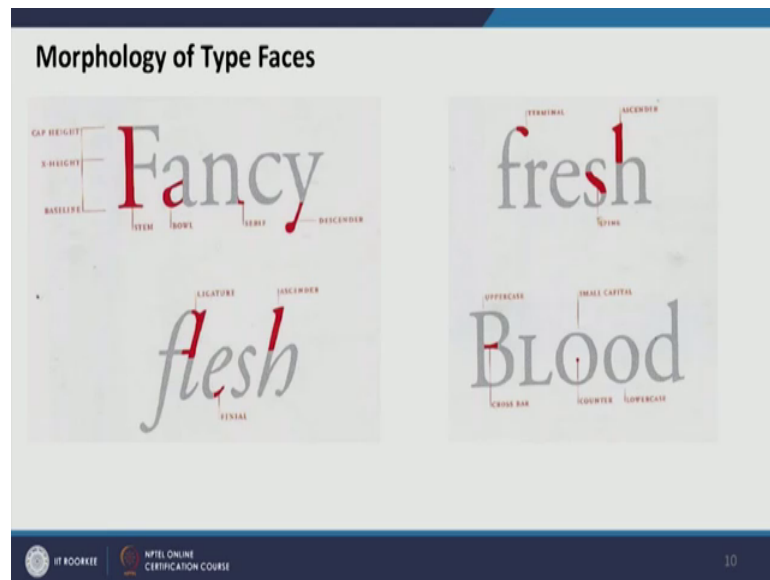
So, in 16 century printers began to integrate roman and italic forms into type families. So, as we right now have the italic and as well as the roman version, so some part of highlights will be in italic or some point of if the body is completely italic, then some part of highlight can be in roman. So, this there was a mix and match of italics and roman were there, but keeping in mind that the x height matches because if x height does not match then it will look like a different type faces or different size will be different. So, each and every if you take one type face and change it to into italic and then again start writing it in roman in you can do that in Microsoft word, then you can see that the x height is always constant, it does not change in italics and in italics version as well as in roman version. So, that is how the integrity of italics and roman of particular typeface happens.

So, right now we come back to the come to the morphology of typefaces. So, how we recognize a typeface by its different part of one font? So, now we can discuss; what is the difference between font and typefaces. Typeface is like times new roman is one type face, but Times Romans each and every alphabet will be one font. So, font and typeface has a slight difference and a while we use in design will there is a slight difference typefaces and fonts.
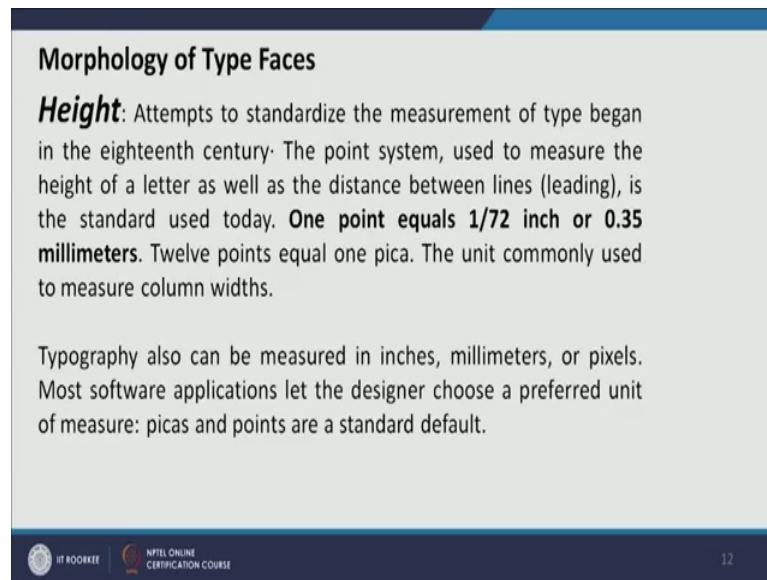
So, here we can see in the photograph that its different morphological parts are described properly. So, here if you look at the F that is capital or uppercase F the top from the top

to the bottom the complete this distance is a cab height. Now, you can see the x height is the small letters top part to the bottom part that is called the x height. If we type x in a particular typefaces the x will have small x will have done this height. So, this is called the x the small x height. This is the base line from where the typefaces bases are apart from the y p and which fonts has a lower descender. So, the y p f they are lower parts are called the descender. Descender starts under the baseline and end still the lowermost point.

A has a particular feature which is called bowl, and then e c these fonts has a particular ending which is called finial. And sometimes we can see that some letters which comes very close joints together and create the different kind of form. So, here also in print media there were these fonts get chiseled together these are special cases where they is to make their for this two fonts together. Because if this fonts are separate then there will be a larger blank space between in between these two. So, this is called ligature. And similarly f also has a terminal end point which is not called finial in like c or e, it is called a terminal, and s as a spine which joins the upper part and the lower part of the apes. And all these letters like h, d, l they have the ascender the small letters, but which goes until the cap height that is called ascender. Similarly b has a cross bar even the r will also have a cross bar.

Right now we can all the definitions are region over here. So, we can go through this and this will be also circulated you through notes. So, you can read what is the definition of x height, what is the definition of baseline cap height, and everything is region over here. So, you can go through this. So, now, in height there are many other things to discuss because in height it differentiates the visual impact of a typefaces. If we change the height at to create more emphasis or like headings and other things we change generally we change the height. So, then we can see in what it is denoted by p. So, what is that. So, we will discuss that this right now.

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So, height attains to standardize the measurement of a type design of different fonts. So, this is a measurement of typefaces heights. So, height of a particular eight points Helvetica and eight points times new roman. So, they will be more or less similar there will be different insets, but it will be more or less similar it will not match with a twenty four points Helvetica will not match with eight points sentora like that. So, there is there is a need of standardization to understand what should be the height of a particular print or digital media.

So, it is the pointing systems. So, one point equals to one point in the typography which is generally denoted by p is one inch is divided by 72 parts and each one part is equals to one point in typographic measurement. So, it is almost equal to 0.35 millimeter. So, twelve point equals to one pica. And then this is a this is an another unit of typefaces, but typefaces can also be measured in inch millimeter or pixels, but generally the measurements used for pica and points.

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So, here is a relationship of picas and points. So, eight p what we see in this word pad it is a actually 8 picas I denoted as 8 p and then points which is like 12 points equals to 1 pica. So, if 1 pica is divided into 12 small equal parts, so each one part will be 1 points. So, it is denoted by p 8, p will come first and then 8. So, in case of pica the pica is denoted after the digit how much is it. So, if it is a 8 pica plus 4 point it will be denoted at as 8 p 4 because p again stands for p is after 8. So, it is pica and p is before 4, so it is 4, so 4 point. Pica Helvetica with nine point of line spacing will be 8 by 9 Helvetica.

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Now, we also discuss the width of typefaces. Even in some cases the typefaces with without changing its own visual style, it might change its width. So, in some typefaces, we can see a single typeface has a wider variation and a single typeface can also have a narrower or condensed variation right. So, these wide, narrow, condensed, extra black, black, these variations can differentiate typefaces visual dominance. So, more the wider the wider the typefaces are it will have it will create attract users eye. And if it is condensed and narrow it will it will blend with the background, and it will not have a visual emphasis.

And then we come back to the next step stages is kerning. So, right now we were discussing about morphology of single font. So, how these fonts with different parts of the font size are and how to change this different fonts. Now, we discuss the spacing of two different fonts, how is juxtapose two different fonts in a word that is very important; otherwise if the spacing is more, then it will not be proper it will be loosely connected; and if the spacing is very tight, then it will seems like it will overlap. So, the term kerning depicts how what is the horizontal spacing between two pairs of letter in a particular word. So, the main motto of kerning is the text should look homogenous and it will eventually create increased readability of the text.

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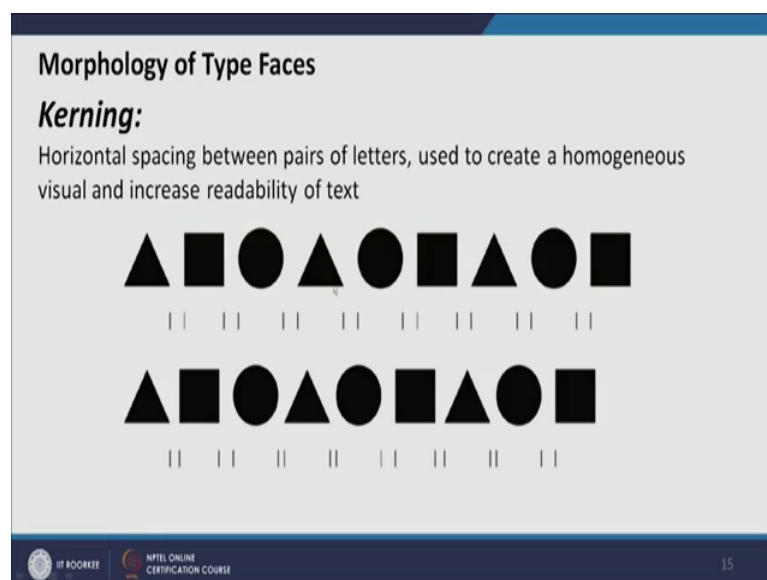
If you look at the figure, the first top figure there are equal spacing between different shapes. So, first let me tell you if we look at the English typefaces, each and every

typefaces has can be depicted in a abstract geometric form like first a, v, these are triangles a is up right triangles; v is a reverse triangle; o is a circle, c and d their half circles; h, t these things are likes squares. So, we can understand a figure ground relationship with the typefaces and their background with black and white combination of abstract geometric patterns.

So, if we look at the first series where these different shapes were juxtapose with equal spacing in between. So, the endpoint and of the first form and the starting point of the next form has a equal spacing in all these cases in cases of triangle to a square, square to circle and so on and so forth. But in these cases, if you look at the free the first series, it does not look equally, if you look visually that each and every shapes juxtaposition does not look equally spaced. But on the other side, if you look at the lower image it looks equally spaced. Because what happens here, but in the next series the spacing between them are not equal they are difference, but still it looks equal. Because in the cases of kerning also this happens because the space in between the void between the area of the void has to be equal not the distance.

So, in case of the first scenario if you look at this the void between the triangle and the square is this much and the void between the square and the circle is this much. So, in the case of triangle, it is only having one sided void; in case of circle, it has a two sided void. So, in case of circle, the area the void area is more. If we have a equal distance the void area is becoming more because there is the void area is distributed equally distributed in both the sides, so that is why we need to reduce the area in between them and this space it can be more clear.

So, the void area increases because there is a triangle, triangle is also shrink on the top and circle is also shrink on the both the sides. So, the same thing because of the shrinkage is more the void area is becoming more over here, and because of shrinkage is less the void area here and here are less that is why we need to decrease the spacing over here. Similarly, it is happening over here. And again the similar cases are we can see over here, so that that is how the kerning has to happen.

So, first it has there was an experiment by David Kinder lee. So, he experimented with the abstract geometric forms and idealized what should be the spaces between different fonts. So, for kerning also we need to a look at the spaces in between the particular fonts because some fonts has a totally enclosed white spaces like for example, O. So, this is fixed, but for example, for example of if we take the cases of Z, this is not fixed because this is a serif font, which is serif and sans-serif will discuss later. But if you look at the font in the first the Z, Z has the extended end. So, here the white spaces here in the Z is more defined, but here in this case this is called sans-serif font which does not has a end it is not so defined.

So, here the white spaces are merging with the other white spaces. So, it has less define white spaces. So, if you count the spacing between these two, here the spacing is more you count the great the spacing is more, because this white space is already defined. So, this space what we read the background backgrounds area is becoming l less because it is divided into two different part here and here, but here in case of this part it is not divided into two different parts. So, if we increase that if we provide the equal space of this what we have provided in the first cases, so the area will look more because this is a one unified whole white space. So, we have two position O and Z closer in this second cases.

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So, they had different methods of different designers have the experimented with kerning. So, three of the most three of the examples will be a Robust Slimbach's and Walter Tracy's method and Miguel Sousa's method, you can go through the their works in these are available this will be available online, and look at their kerning process and their experiments.

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So, now we come to the classification of typefaces. So, the broader cast classifications of typefaces while serif. And a sanctuary as I was just discussing the serif is a small

decorative extension at the end of each font of typefaces of serif style, so that was the example of serif. So, this is Bhaskar will which is the serif font we can look at the first example which a has a extended ornate end. So, this is a serif font and this is definitely an older version of typefaces. It evolve from calligraphy and evolve from the chiseled stone, because initially when the engrave the artistes is to engrave with a chisel creating a sharp bend was difficult with the chisels, so that is why the end use to create a better finish of the end they used to have a border. They is to have an extension of the end that is actually translated into the print media and that become the serif font of print media.

And also during chiseling there is to hold the chisel and chisel has the flat end and they is to hold a hammer to chisel that. So, when they are chiseling and they use to hold the chisel on the left hand and use a hold the hammer on the right hand. So, when chiseling this side of A used to become narrower because they used to hold the chisel like this. So, when it comes like this it become narrower, but when it comes like this, it becomes wider. So, when you they use to chisel they hold the chisel and hold the hammer on the right hand side, so eventually this side of all the fonts will give a thicker stroke. So, this is a transition from stone engraving and handwritten calligraphic thing to print media.

So, later there was a sans-serif font which develop later on the more usage of digital media and print media. So, sans-serif font does not have ornate end. So, it is it looks more modern and looks more minimal in style. So, sans-serif etymological sans means without. So, without the serif is a sans-serif. So, this is an example of feature font which is a sans-serif font.

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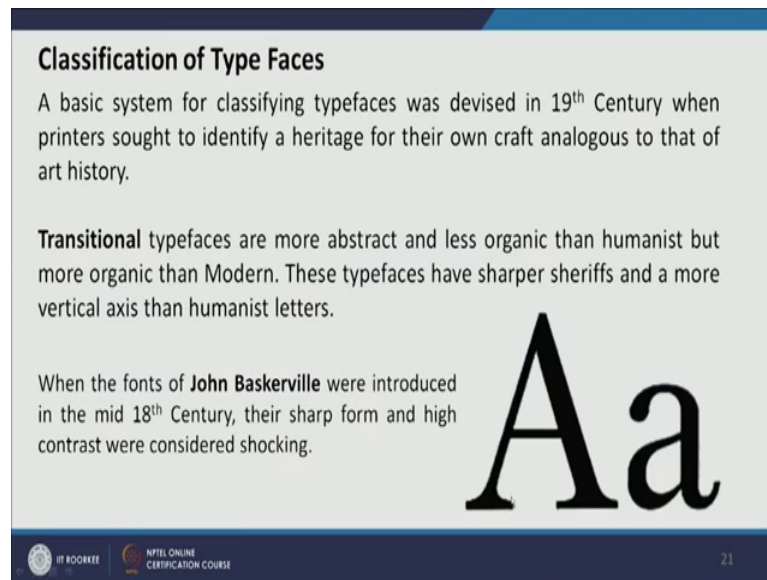
Now, if you come go deeper into the broader classification. So, there is a basic system of classification of typefaces which evolved in nineteenth century because there was a lot of different types of faces are available by the printers. So, first was the humanist or old style which evolved from director calligraphy. For example, there was a Sabon which is the designed by designer in 1966 which evolved from Garamond, Garamond you must seen he is a very famous old style typefaces, which has in these typefaces you can see if you closely look, so the thickness of each and every letter, it does not is not constant.

If you look at the a very carefully this is thinner and when it goes towards the towards the bottom, it is becoming a little wider, because it and that shows the direct transition from hand painted posters and hand painted calligraphy of a typography. So, there is a they wanted to mimic the handmade style of calligraphy. Even in the A, if you see this end is thicker, and then it goes thin, and then it again becomes thick. So, again in the bawl of the a, this is thick to generally it is becoming thin.

So, the next is a transitional. So, for example, of Baskerville typeface is a transitional. So, there was a atom to modernize atom to minimize this kind of variations in a particular font to make it more minimal and has a modern it has a modern look.

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So, here we can see the a throughout has a similar distance here from top to bottom here also which has a similar distance. And even the serif edges also is not so drastically different. If we come back here so see serif edge is also not equal to this main stem. So, even in the serif edge the bottom part is a not flat, it is curve. Here we can see it is absolutely flat. Again the there is a less variation of thickness in the small letter as well.

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So, the next one is absolutely modern and this was this is an example of Bodhini typefaces this is this was more modern than the previous one. Here we can see it is

absolute straight line. So, in the previous one there was a gradual transition from the top to the side, but here there is a drastic difference and this is absolutely modern. And here also if we say look at the top part of the edge chiseled, and here in none of the transitions are gradual. So, it is just some straight line.

So, if we also look at the art movement, so what happened is during the art movement and architecture movement, it was borrow rococo then there was a industrial revolution and modernization started, and gradually there was more move towards the international movement. In international movement, we started designing a very minimalist we adopted minimally style and very move towards organic to more geometric. So, similar thing is happening in typefaces. So, it was moving from organic style to gradually it is moving towards the geometric more geometric fashion.

So, the next was then after that there was a evolution in the typefaces. So, there was a change in typographic style. So, people use to exclude the extra ornamentations and that become the sans-serif typefaces. So, sans-serif is actually more modern than all serif fonts. So, all the sans-serif movements, all the sans-serif classifications came after serif mostly after serif typefaces. So, say towards the modernization process and towards the decreased ornamentations of visuals visual ornamentation, serif fonts evolved.

And another functional need of serif font was there was a change from pleat media to digital media. So, there was different digital displace were there. And depicting a serif font was very difficult in old versions of digital media because that time the pixels were more. So, there was a larger pixel. So, depicting a typefaces like this or rather this through a larger pixels were absolutely impossible during that time because here this curve was very difficult to depict in a pixelated format.

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So, in that cases these kind of straight lines, angles were easy to depict in a pixelated digital display, so that was another need to design a sans-serif fonts. In sans-serif movements also there was is a humanist sans-serif. So, here as we know that there is a human touch. And here Gill Sans is an example, so Gill Sans in Gill Sans if we look at the give san has a very different thickness if you look at the small a more visible a is bowl is thick over here and when it joins with the steam, it is thinner.

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Then there is a transitional it is going towards the more and more geometric form of the sans-serif itself. So, sans-serif transitional are also called a grotesque and then there was neo-grotesque which is the revival of modified grotesque. So, Helvetica is one of the famous typefaces design under this typographic styles design in and around 1950s. So, if you look at Helvetica and if we compared with the Gill sans the differences in the smaller case is more visible, the difference of thickness is minimized.

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And next if we go back to the more geometric form for example are the Futura which is very these things are very late modern and more minimal in style. And here the Paul Renner Futura font is if you look at its absolutely geometric, if you look at the a resembles a triangle and even the top edge of a is appointed peak in case of Helvetica and Gill Sans it was again chisels. But in case of Futura, it is absolutely appointed peak and if you look at the o of a Futura, it is a perfect circle. So, it does not the thickness does not change. But if you look at a, it is also a similar to a circle which is which does not have any slant. In other fonts, you can see the some of the o s has a particular slant it does not have.

Here there is only there is little change in the thickness, because if the thickness is same over here on the right hand side and in the joining point, then this part will look black. So, this part will have when this is printed in a small paper. So, it will be with the small

type height. So, this part will appear as a black spot. So, to avoid that, this part is only decreased as less as possible.

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So, there is another classification which is the Egyptian or we call it a slab serif. This was derived more on a postmodern style, this is after modern, but if we look at the postmodern movements and postmodern art and architecture movement postmodern historicism also went back to history. So, there was a repetition of history and there was a trained in postmodern to use more ornamentation, more ornamentation and more adding more aesthetic value, more aesthetic or elements into a typefaces. So, this came after modern after this sleek design of typefaces.

And then we again went back to serif styles, but serif style here are not the same as the previous one. So, here we can see the equal emphasis of the serif ends, the ornamentation had a equal emphasis on the body of the fonts. So, it is these are very thick and almost as equal to the main elements of the font. So, this cross bar of the a is of main element of a distinguishable feature of Patna the font a. So, here if we see the ornate serif and which is also equal to the almost equal to the thickness of this crossbar. So, we can see the importance of ornamentation again in postmodern era was growing after modern minimalist style. So, for example, Clarendon was one example of Egyptian slab serif font.

So, here we have all these fonts different fonts together, so that you can have a better look at each and every fonts and how they are different. And they have a similar height. So, here the roman typefaces are basic fonts and we will discuss about the type families. You must have heard about the types families. In particular font, for example, Helvetica universe and the most of the famous fonts has a type families. So, they are the same fonts, but they look different.

As we were discussing the width of a font and we also discuss the Italians version and the roman version of the font. So, roman version typefaces were the designed first basic type fonts when it was slanted and translated into italic fonts that the font does not change because the visual identity of the font was similar, but just its a slanted or italics. And then again you can make it bold, you can make it condensed, you can make it extended. So, all these things without disrupting the visual identity of a particular typeface creates the type family for example, universe.

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Universe which is designed by the famous typeface designer Adrian Frutiger who also designed the time type face Frutiger that is also a very famous typeface. So, here we have all the typeface family of a universe. So, universe family has a normal roman type this is this it, and the second one is the italic version, then we have this bold white versions, bold and italic, and then we have condensed over here, very condensed and

then the other condensation dilutes and then we have a very thick or black versions of a particular typefaces. So, they all together create a type family.

So, here we have discuss the basics of typography, we discuss the evolution, we discuss the classification, and how to distinguish of typeface from other typeface using the morphology. In the next part, we will try to implement that into your design through various examples in the next module.

Thank you.