**Internet Technology**
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**Lecture No #17**
**HTML Forms**

In this module that we are going to start now, we will be having four lectures.

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And here we will be talking about the different ways of designing interactive web pages. Here in the first lecture, today I will be talking about html forms. The next lecture we will be talking about something called image maps. After that CGI scripts or Common Gateway Interface followed by some other technologies which are also similar and competing. First let us try to understand what is meant by an interactive web page. See, normally the conventional webpage whatever we see, we type in a URL or click a text which points to a URL. The page from the URL gets fetched and it is displayed on my screen. I am sure all of you are familiar with the search engines people use.

Means, we need something I do not know where it is I use the search engines. Google, Yahoo, these are very popular search engines search engines today. Now what I am trying to say is that, suppose I give something for search to Google. Suppose I say I want to search for html. So there is a small white box. I type html, I press search and after some times Google gives me a big list of places where I can go for more information about html. Now what I see on my screen? Now is a page which Google has sent to me, that page contains a number of information all containing information about html links to html. But is it the case that this page was stored somewhere in the Google server and after my request that page had been sent to me? See this is not possible.

Because what the user will be giving for searching that Google cannot predict. There can be millions of possibilities. I can give searching html, I can give hypertext markup language, I can give html form I can give so many things. So a more logical approach would be that Google stores this somewhere in a database. Depending on the users requests that get fetched from the database the information and they get dynamically formed into the html document and sent it back to me. This is what interactive page means. That the page is not residing as it is on the server. But depending on the request it gets created and it is sent back.

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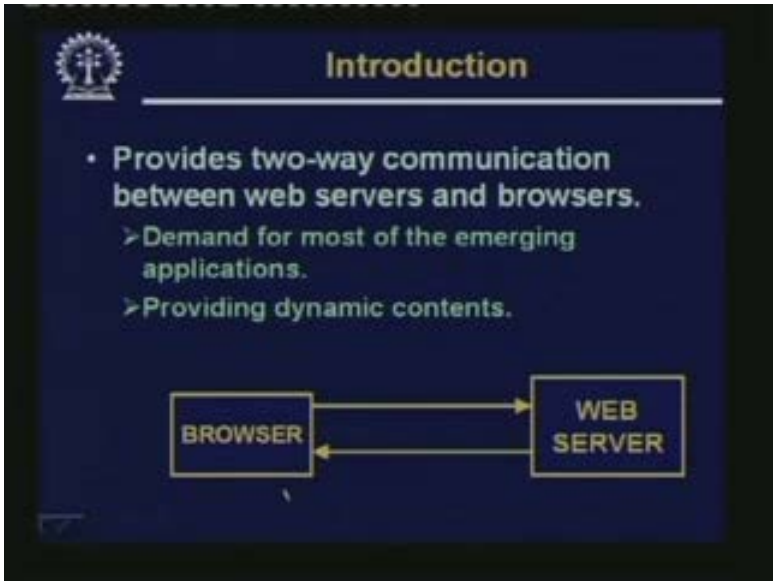


Html forms which is the topic of our discussion today, is one way to achieve this kind of a thing. Now html form provides two way communications between web servers and browsers. Now when I say 2 way communications, I mean 2 way communications of information. It is not what is done conventionally in web pages where I click on a URL and http request goes to the web server. The web server sends me back a document. This is data transfer in one direction in the other direction that was control request. But in web in case of interactive web pages, in case of html forms you take that example of Google once again, I type something I type html say press enter or search a request goes with a data item saying that the user has asked to search for html.

Html is the data. So some data is flowing from my computer to Google. Of course Google will be sending back the result page to me. So it is the two communications here. So, for most of the emerging application today we need this kind of two way communication. And as I mentioned, this also provides dynamic contents. But everything cannot be present statically on page. Suppose, I create my home page. And unless I update that page regularly it will become stale. But a better way would be I update a database and automatically there is some other program which will create the html page. From there that will be much easier for me with just some examples.

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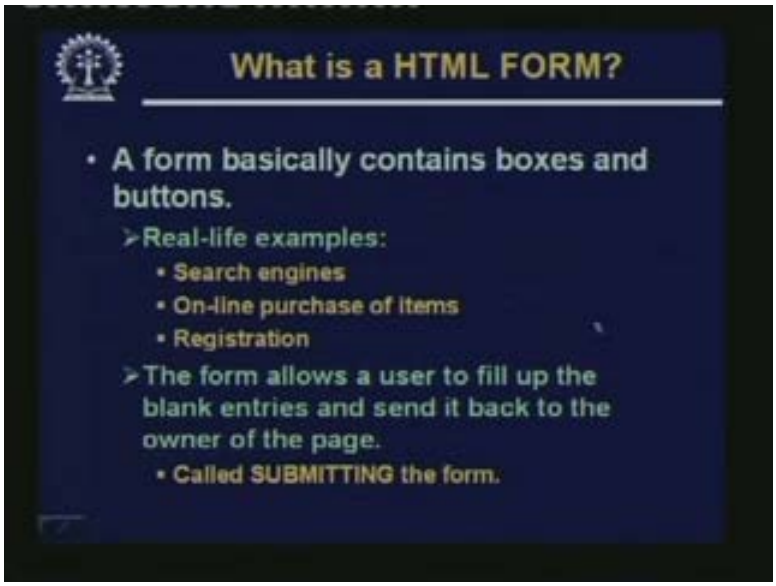


Now let us see what is an html form? A form is basically a part of the web page which contains boxes and buttons. The Google search page that is an example of a form there is a box where I could type in that html. There is a button which I could click search. There is a box, there is a button. There can several such boxes and buttons in a page. This is what a form is. Some real life examples search engines I have already talked about. Today we purchase items online. We book tickets online, we do registration. Say suppose I enroll for a course, many of the courses, many of the institutions have online mechanism for submitting our registration requests. We can say that these are courses we want to take this semester or this year and so on.

So if you look at the search engine example again there was a box which was appearing and there was a button. So after filling up the box I press the button right. So the form basically allows the user to do two things. Number one to fill up the blank entries in this case the box and click that search button or submit button whatever you call to send it back to the owner of the page. Well here owner of the page means I am referring to Google. In general this will be website from where the page was brought the page containing the form I had brought from somewhere I submit it. It will go to the same place to the same web server. This is sometimes called submitting the form. Submitting the form means whatever I filled up in the form that data will go back to the server.

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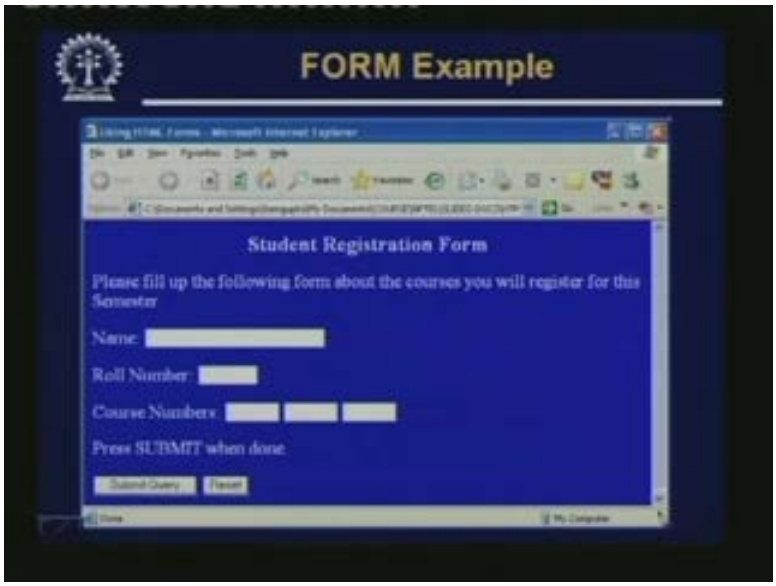


This is one small example of a student registration form. This shows you can see there are 4 boxes; you can see 1, 2, 5 boxes. One, where the student is supposed to fill up his or her name. Second one roll number, in the third one there are 3 courses, he or she can take the course numbers and after finishing filling up the course numbers. The student can press on this button submit query. Submit query button will allow the data which is entered to be sent back to the place from where this form was fetched, the particular website. Typically in many such forms there is another button called reset which if you press the contents of the form will be cleared. Everything whatever you have typed will become blank again. You can type in something new. So this is how a typical form looks like.

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Now let us look into the details. That means what are the tags and attributes that you can use to create a form. Broadly there are four sets of tags form, input, textarea, select. So let us see how this can be used.

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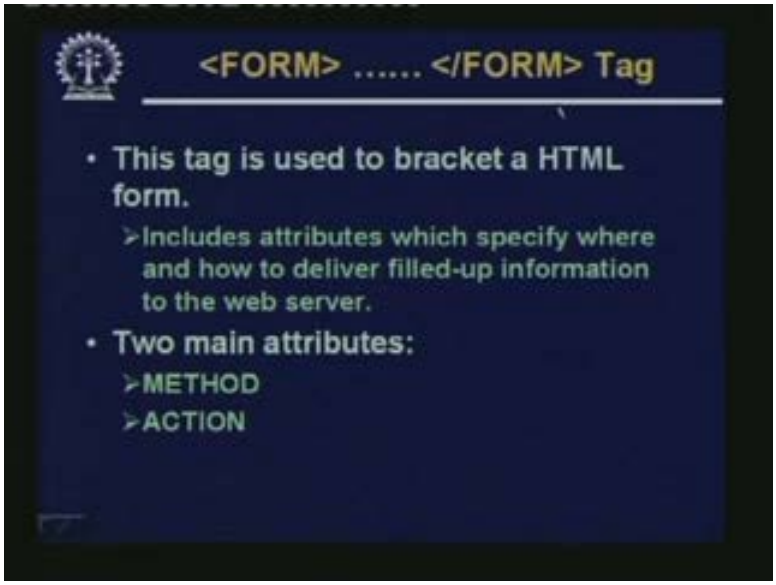


Form is most important or the basic tag that can be used to bracket the definition of an html form. There is a begin form and end form between which the whole definition of the form should be there and within this form definition there are number of attributes you can specify, which specify where and how to deliver the filled up information to the web server. There are two things. I have a form, I have filled up the information, I have

submitted the form. The data must go somewhere logically speaking what you should expect. There should be a program running somewhere that should take this data as a input, do something may be store in the database or something.

And then send me back an acknowledgement page that where it is done. So there are two things I need to specify. If there are alternatives then I should specify how I am sending the form data to you and number two I should say that when this form data goes, where it should go? Which program should start running? Which program should take this form data as input? Because there can be several such forms that may be coming from that website and each form data should go to the correct places. These are two things I should uniquely specify. So there are two broad attributes one is method one is action. These are used to specify that how it is sent and where it is sent. So let us see.

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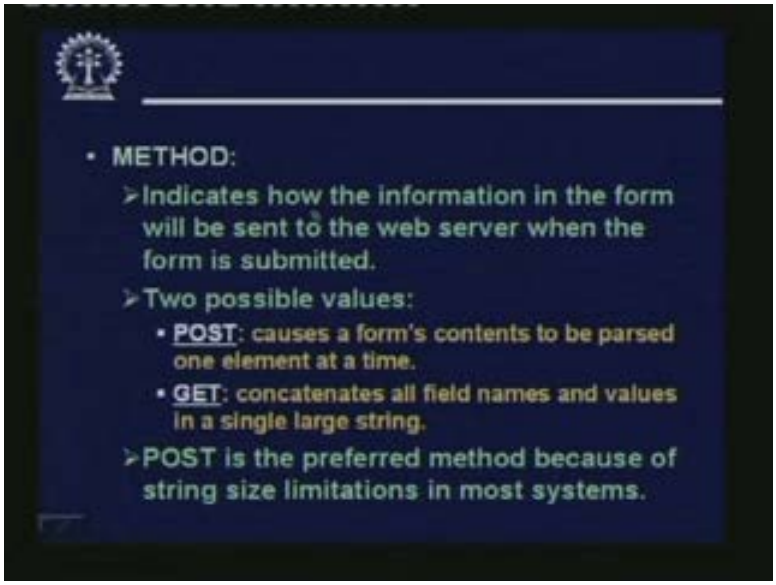


Method. The method attribute tells you that how the information in the form will be sent to the web server. How is important? Because, here there are two alternatives. And these alternatives you have already studied earlier in connection with the http protocol. We had seen that we had GET and POST there are two methods of submitting requests. The same thing holds here. Exactly the same way data can go to the server in two different ways GET and POST. That is why you have to specify which one you are using. So method will indicate how the information will be sent to the web server. The two possible values of method you can use POST, GET. POST, we will come to the detail later.

POST will cause the contents of a form. That means the data your filling or you have filled up to be parsed one element at a time. In get all the field names and values are concatenated in a single large string and that single large string is sent to the server. Now in general POST is the preferred method. Because in GET we are sending the information as a single large string. Now in most systems there is a maximum upper limit to the size of the string. In some systems it can be as small as 256 characters. In some systems it can

be 4096 characters and so on. But there is some limit. But in POST, there is no such limit. So if the form is big and the data is longer you will have to use POST, not GET. GET can be used only for very small forms.

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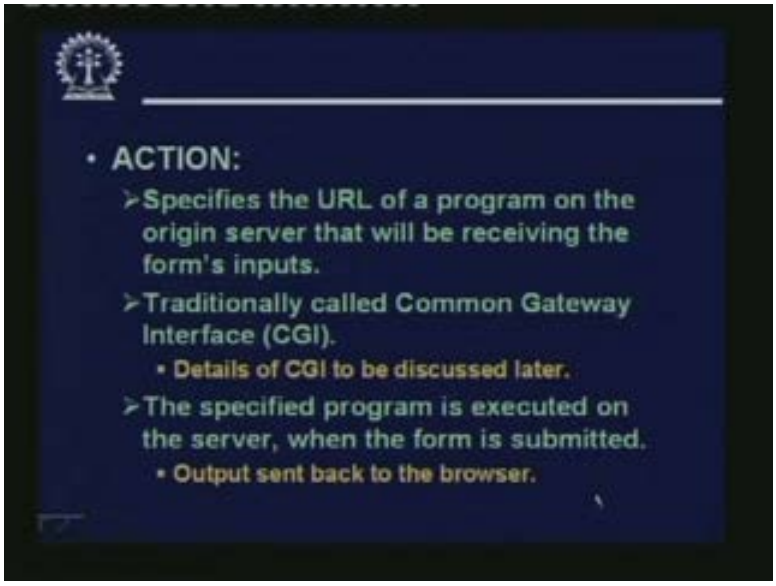


And the action attribute will specify the URL of a program on the origin server. Origin server means the web server from where you have fetched the form. That is the origin server. So the action attribute will tell you that on that origin server which particular program will take my data as input. So URL of the program that will be receiving the forms inputs. Now this particular program residing on the origin server and will be taking the inputs has been conventionally or traditionally called or known as the common gate way interface or CGI. So we shall be talking about CGI later in more detail. But just understand that this program which will be taking the input is the CGI program.

And how it works or means, what happens after that is specified program or CGI program gets executed on the server when you have submitted the form and after execution is complete whatever processing is required, the output will be sent back to the browser. It depends on the application. What output you want to send back? For a search engine I need the list of pages and the links where I can find mine; mine for machine. Whatever I am looking for, but for some other case, student registration it may respond with a single line that well your registration has been completed successfully thank you. So depending on the application what kind of information has to be sent back and what kind of processing is required?

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Now this is a typical example how the method and action attributes are used along with form. So this is the form tag. Within this, all the definitions of the forms are there. Here you specify method is equal to POST and action equal to the name of the program which will take place. Now this dot pl is a PERL program. Incidentally, CGI programs requires pretty good amount of string handling or string manipulation. And PERL is a language which has powerful string manipulation capabilities. So many people many persons prefer to write CGI programs in PERL. They normally have an extension pl. So this is a PERL program which located under this particular directory on the origin server.

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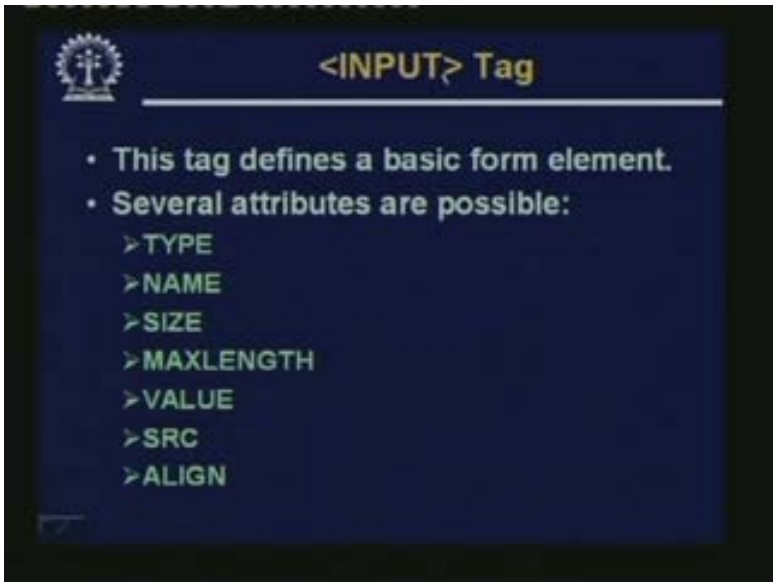

Now let us come to the other tags which are there inside the form input tag is the most important. Input tag defines a basic form element. So I have a form inside a form there will be several elements. Elements can be of a number of different types. So what kind of form element is this and what are the corresponding attributes that can be specified using a number of different attribute values type, name, size, maxlength, etcetera. These are all associated with the input tag. So let us see one by one what these attributes mean. First of all this type is very important because type will tell you what kind of form element you are trying to insert whether it is a box, whether it is a button or whether it is something else. There are many alternatives. Let us look at these now.

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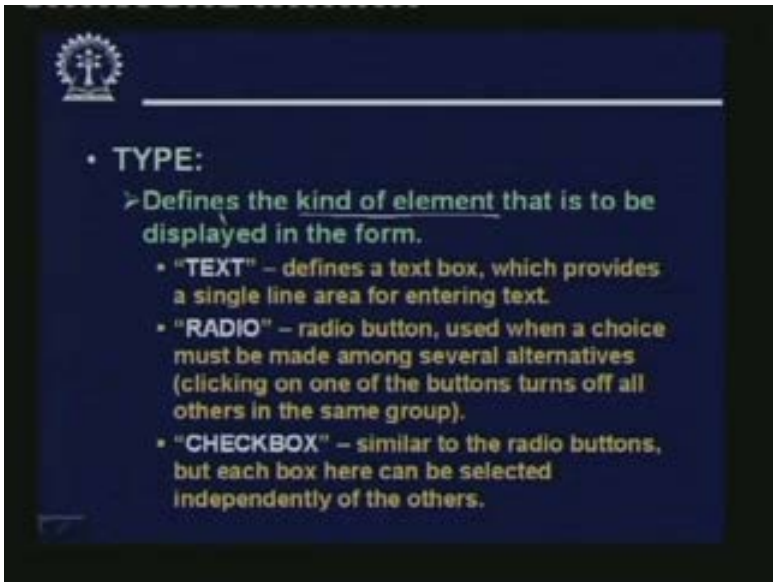


First the type attribute of the input tag. Type attribute defines the kind or the type of element that you want to insert or display in the form. Now the value of type can be one of these. It can be text. If it is text you are defining a text box. Text box looks like a simple box like this where you can enter a text. There is a box where you enter a text like the Google search box. There is a text box. Provides a single line for entering text. There is something called radio button. In fact radio button is not defined independently but as a group. Suppose there are three radio buttons for example, radio button is used when a choice must be made among several alternatives.

So in certain cases you may have to fill up a choice. For example you are sitting for an exam. You have been asked to give your option that whether you want the in English, in Hindi or in Bengali. You cannot click more than one, you have to click exactly one. So this is an example of radio box. Well you have seen the older radio type where the buttons are push button type several buttons so that you push one all the others would come up. So you can push only one at a time. So from there this radio button name has come. This is used when a choice must be made among several alternatives. Clicking on one of the buttons turns off all the others in the same group.

See, if this buttons all belong to the same group, exactly one of them can be made active at a time like another thing is sex male or female you click one of them. The other will turn off like this. Checkbox is another type. Type equal to check box, this is similar to radio button. Again why because here also you have several related buttons in a group. But the difference is that here you can select each of them independently of the others. It is not that selecting one of them will deselect the others automatically take an example again. Suppose you have been asked that what are the languages you know? English, Bengali, Hindi, Marathi. There you can tick more than one. This is an example of check box. You check all the boxes that are applicable. So this is the difference between radio and check box.

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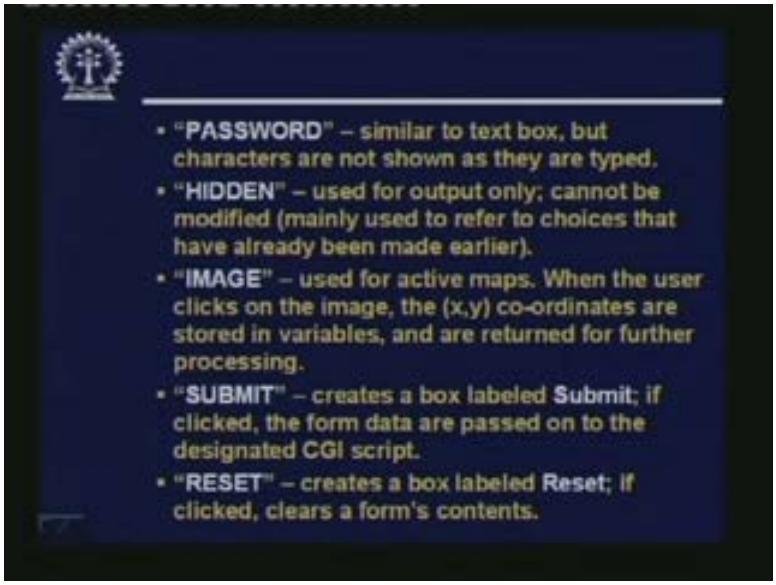


There is another value called PASSWORD. Password is like a text box. In many applications you need to enter user name and password. Password is also like a text box. But normally when you enter the password, you cannot see what is being entered, that is the main difference. It is also a text box. But whatever you enter is not visible on the box either nothing will come or some stars or … will come. Password is similar to textbox but characters are not shown as they are typed. Well, HIDDEN is a special value. This is used for output only you cannot enter something here. It shows some fixed value. It cannot be modified mainly used to refer to choices that have already been made earlier like I am given an example suppose you are again registering for a course. In the opening page you have entered your register number.

In the succeeding pages of others forms will be coming asking you to fill it up. Now one of the hidden forms your registration number can appear which you had already entered in the earlier form. But you need to refer to that information that you can show in a hidden box. Hidden box is something which you can see. But you cannot modify that is the purpose of hidden box. IMAGE. Well image we shall see in detail later. This image is used for something called active maps in a form you can have images also. Suppose you

have an image on the map, suppose this is an image. Now active map means, let us take an example. Suppose you have the map of India you click on the map and wherever you click the co-ordinate of the point you are clicking goes back and just by looking at the co-ordinate the CGI program can find out on which state you have clicked.

This is just an example. So active map means it is an image and where you are clicking the corresponding (x, y) co-ordinate will be sent back. So with (x, y) coordinate that program can take some decision. The (x, y) co-ordinates are stored in variable and are returned for further processing. Submit and reset, are the two buttons which we have shown in that example. Form submit creates a box with a default name submit. Of course you can change the name of this button. If you click on this button the form data will be submitted and will be passed on to the CGI script. Reset is another box if you click it. It will clear the form's contents. These are the types of attributes that you can associate with the input tag. This is the type. Type is the type attribute these are the possible values of type attribute.

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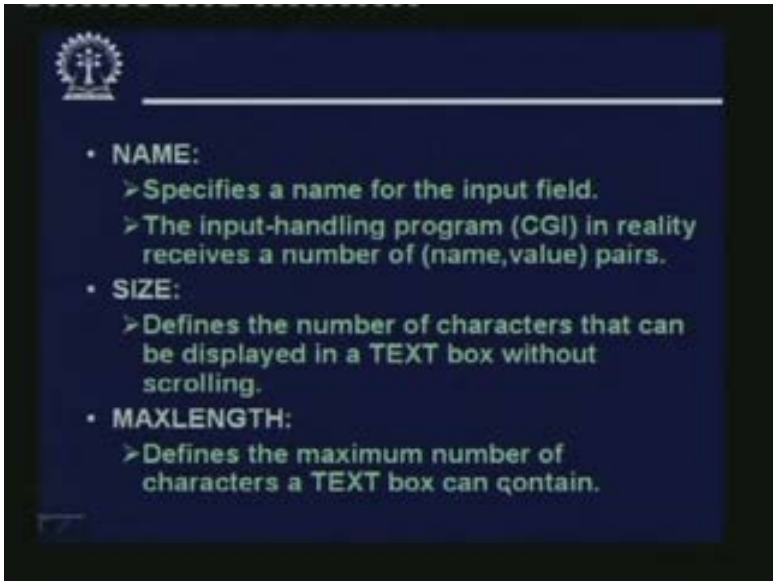


Now the other attributes associated with input are name with each input formally meant you can specify a name. Like here for the submit button if you specify a name like name equal to go, then instead of submit that form, that button will be labeled with go. So you can change the name like this. Name is required for other purpose also when the values you have entered are sent back to the CGI program. This this CGI program must know that which value is for which form element. It should say name equal to xyz roll number equal to 10, age equal to 20 and so on. So this name, roll number, age, these are the names associated with 3 form elements.

So each form element must be associated with some name. Using this name attribute of the input tag. Size. Size tells you the number of characters that can be displayed in a text box without scrolling. Normally a text box appears with a fixed width if you go on typing

more the text goes on scrolling. This will tell you the width of the text box that will appear in the initial place in the first place, maxlength is again related to text box. The maximum number of characters you can enter even with scrolling. Well, if it crosses the size it will scroll but maxlength is the maximum length you can enter beyond which it will not take at all what you type.

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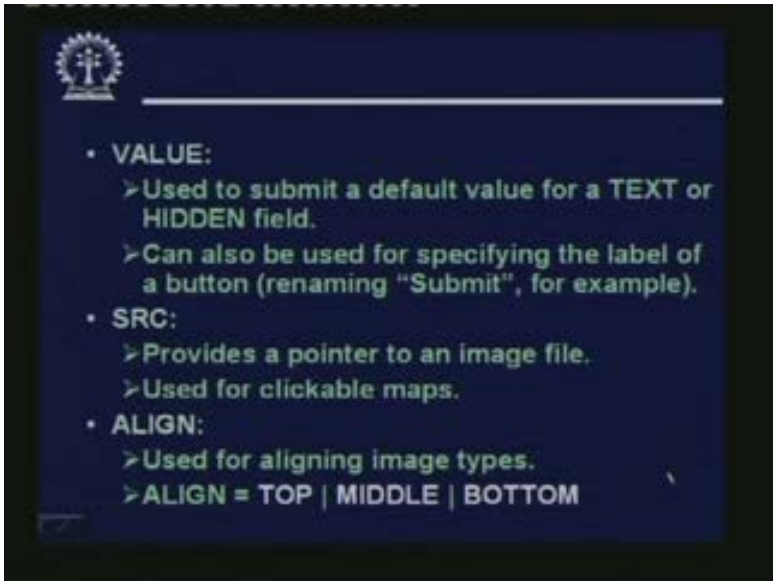


Value; using value you can submit some value to hidden fields. Suppose you give value equal to xyz hidden field that xyz will that value will appear in the heading. This can also be used as an alternative way to specify the label of a button. I told you renaming submit for example to something like go, you can use the value also to do the same thing. Source this is required when you are using an image map. This src is used to provide a pointer to an image file src equal to the path name of the image file. This is used only for clickable maps. This we shall discuss later and when it is image, then along with image you can use the align types. That means whether you want to align it with the text top middle or bottom which way. So these options are available.

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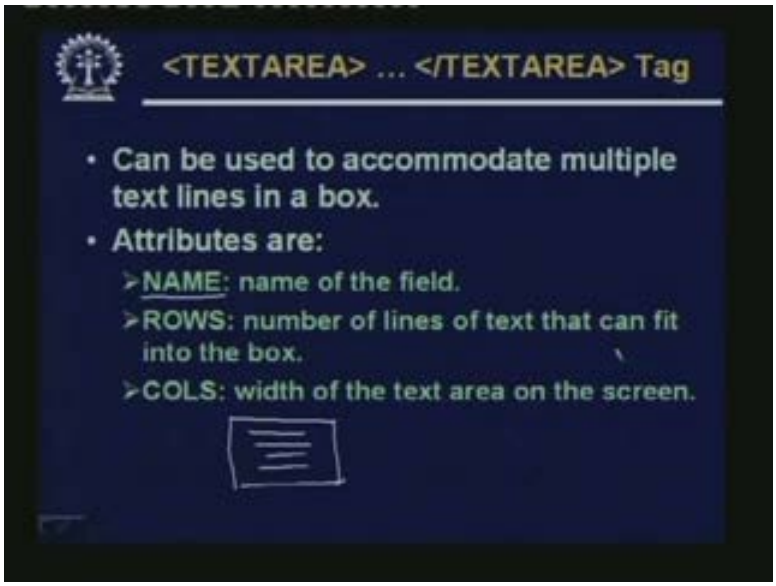


Then comes the textarea tag. These are the things which we have seen with the input tag. Now comes the textarea. Textarea is similar to a text input box. But in an input text box you can only type in one line. But in textarea I can type multiple lines. It appears just as a box where I can type in multiple lines of text. Here the attributes are again each form element is associated with a name. Because when the value goes to the CGI script it goes with the value with the value as well as the name which form many entities, name and value pairs will go to the program. So this name will talk about the name of the field. Rows means the number of lines of text that can fit into the box. That means how many rows are there in the box and column is the width of the, that means rows and columns will tell you the size of the box that appears on the screen. So in this way you can define a textarea where some more amount of textarea for example you are you are asking someone to enter the address. So address cannot fit in one line you can use a textarea. For that.

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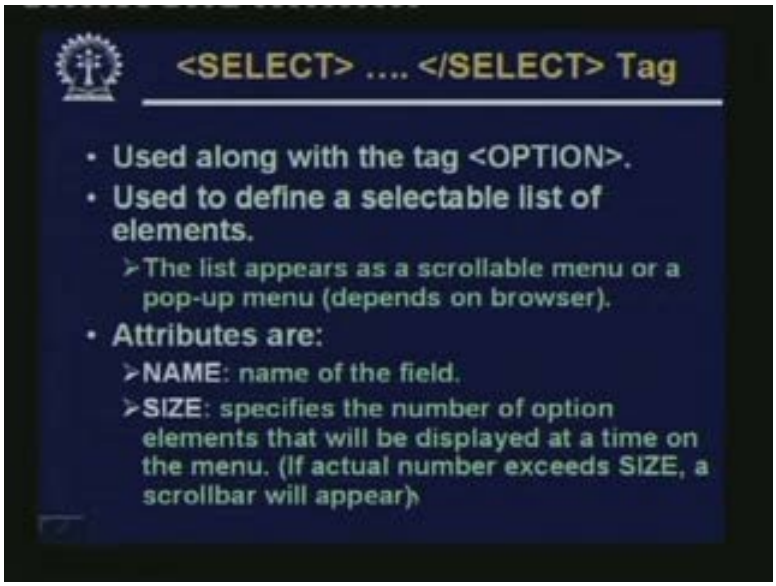


Select this allows you to do some selection in a flexible way. Well, of course you can use the radio buttons and the check box buttons for selection but it can be much more flexible. If there are say twenty items from which you have to select and if you use radio or checkbox there has to be 20 buttons displayed. So many buttons and rather it will be more convenient if you have a pulled down menu while click some where I get a menu. I select one of them that get selected that is much more convenient. So the select tag does exactly that. Select tag allows us to define a selectable list of elements. This is used along with a tag called option. This list appears either as a scrollable menu or as a pop up menu. Of course this decision is not up to the user. It depends on the type of browser you are using. On some browser it comes up as a pop up menu. But on another browser this come as scrollable menu.

With select there are some attributes first is again the name of this form element name of the field. Size tells you the number of optional element that will be displayed at a time. Because, if you see the pulled down menu is in that are found in many places where you register or asked to select your country. You will see that a few countries are showed at a time. If you click on it you see the entire list. So you can specify how many of them will be displayed at a time. If it is a 3 of them will be displayed at a time with a scroll bar or clickable. You click you see the entire list or scroll up and down and see. But at a time you can see three for example. The size will tell you that how many you can see at a time. Number of option elements that will be displayed at a time. Now if the actual number of elements where defining using option exceeds the size then a scroll bar will appear otherwise scrollbar will not appear.

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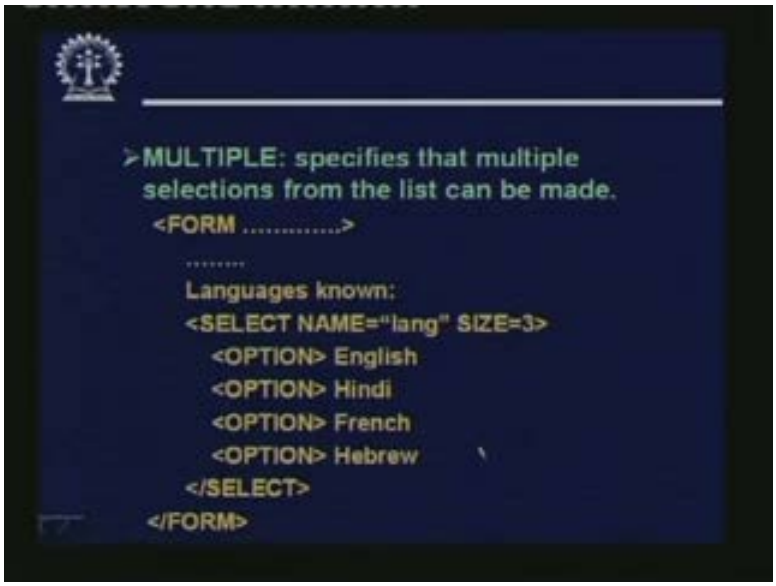


This is an example. Multiple is another. See here attributes are name and size, there is another attribute called multiple. Multiple says that in some cases you can select multiple numbers like the languages you know. This is an example of multiple. Of course here I have not shown multiple. Here you can add this multiple tag also. This is a form this is one form element I am showing here. Languages known is just a text select name equal to lang; lang is the name of the form element size is 3. Means there are four languages I am defining using option, option, option. But three of them will be displayed at a time. There will be a scroll bar. If I do not use multiple, then I can select only one of them at a time. But if I use multiple, then I can select as many of them I want at a time.

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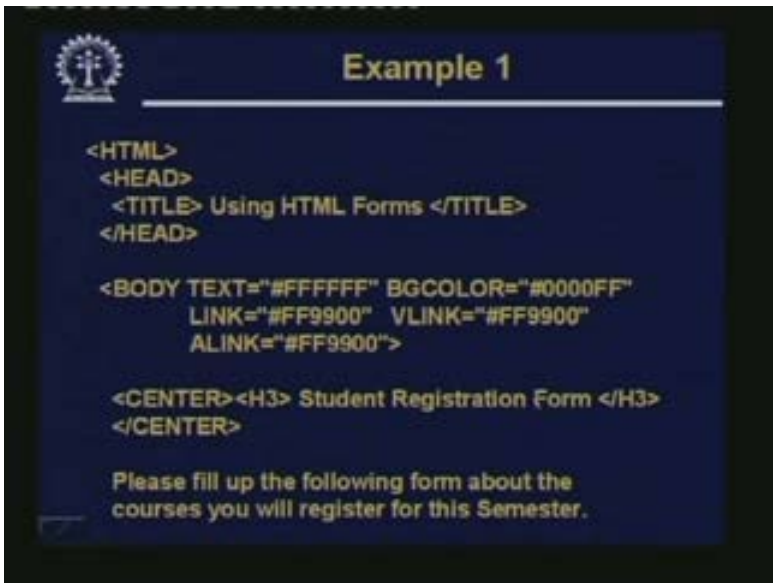

So now let us take some complete examples of html forms. Because we have looked at html forms in bits and pieces. What are the different attributes? The tags attributes, the values. Now let us see how this everything can be used together in one place. Now this example shows that well these are the standard things head, body, center, some text. The next part is this.

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Here we are defining the form method equal to POST action equal to a link to the CGI script. Now you see, there are so many inputs 1, 2, 3, 4 and 5 and 6 and 7, that is 7 form elements. First one says name colon, input name equal to this is the name of the element type equal to text size equal to 30, max length equal to 50, so on. The screen you will get name, by the side of it you will get a form called means a text box with a size of 30. Similarly on the next line you will get this. This all starts with new paragraph. That is why this will go on in the next line. Roll number; input name, type text size 7, course numbers there are three courses. Type text size 6, press, submit when done input see here we have given type equal to submit. Input type equal to reset. These two buttons so are also there. So this is a simple form specified.

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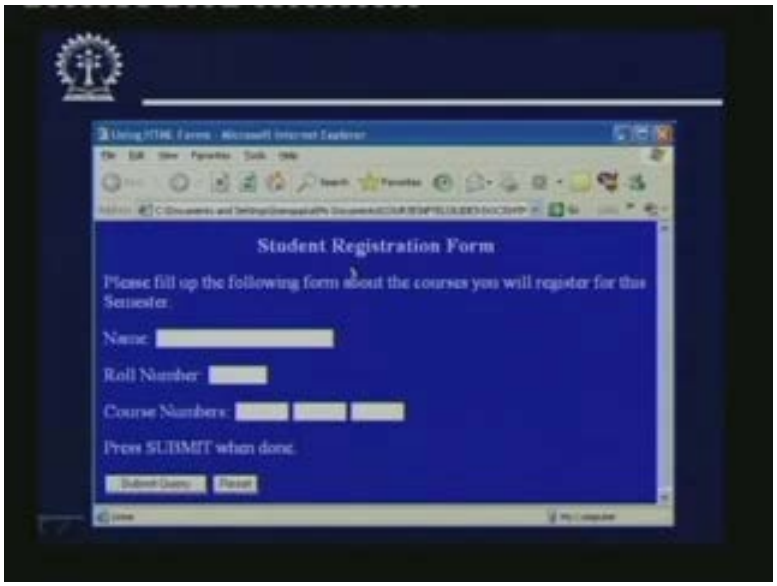


And if we see it on the screen, it will look like this name by the side of it 30 size text box, roll number course number press submit and this two buttons. Now in internet explorer by default; this submit button is labeled as submit query. But you can change it.

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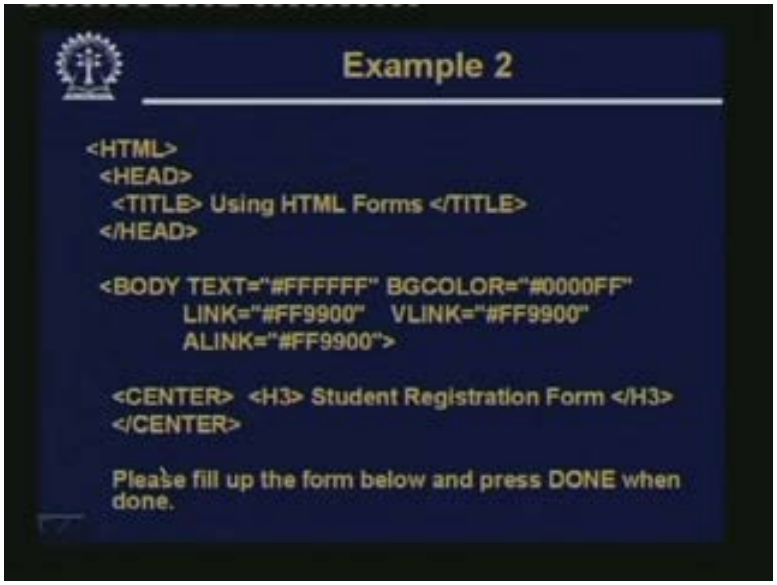


This example two is another form. It is slightly more complex. The first part is again straight forward body the heading student registration form.

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Well here again the first line form is the same name as usual roll number as usual question number is also same we have added this part. Category; schedule caste, schedule tribe, general. This is a radio button, you cannot be more than one of this together so it will be one of these three. Now you observe one thing since these three belong to the same category. So for all these three, I have used the same value of the name cat. So if we use another set of radio buttons for some other thing say the languages you want to give the example that will be having another name. The reason you are having name is that when the values are sent to the CGI program they will be sent back with the name of the field and the value of the field name and value pairs name value, name value, name value, it will go like that. If the CGI script knows that these are the names of the fields given then it becomes very easy to identify the values.

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So this part is for radio button. Now there is another part to form the last part there is a select also. Just look at the select. This is one element, the name as usual has been given mother tongue; mtongue size is 3. Means, three elements need to be displayed at a time. But we are specified 6, then again input type, submit. Here we have changed the value to done, type reset. We have changed the label to clear form. So if you see the form, now it will look like this.

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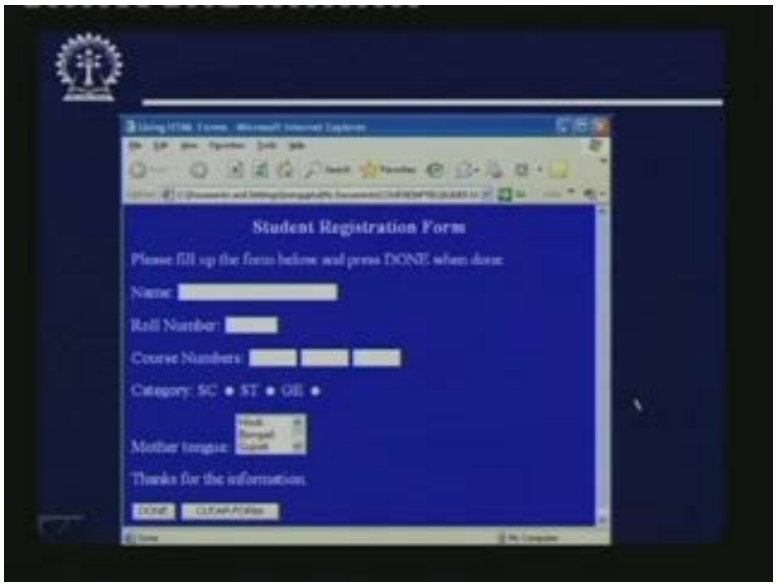


See here we have done clear form so the labels are changed. Let us go back and see what we have done input type equal to submit. If you do not give this, then by default submit

query or something will come. But if you give value equal to done, then this done will appear. Similarly clear form I have changed this and you see for these radio buttons it appears like this. Three radio buttons are appearing together. SC a button, ST a button GE so you can click one of them and at most one of them can be clicked. Suppose you clicked GE. This gets highlighted you click ST, GE again it becomes blank. Mother tongue, there are 6. But three are displayed at a time. As you can see, since the number in the list is more than three, a scroll bar has come on the right. You can move up and down to scroll the languages up and down and do whatever you want.

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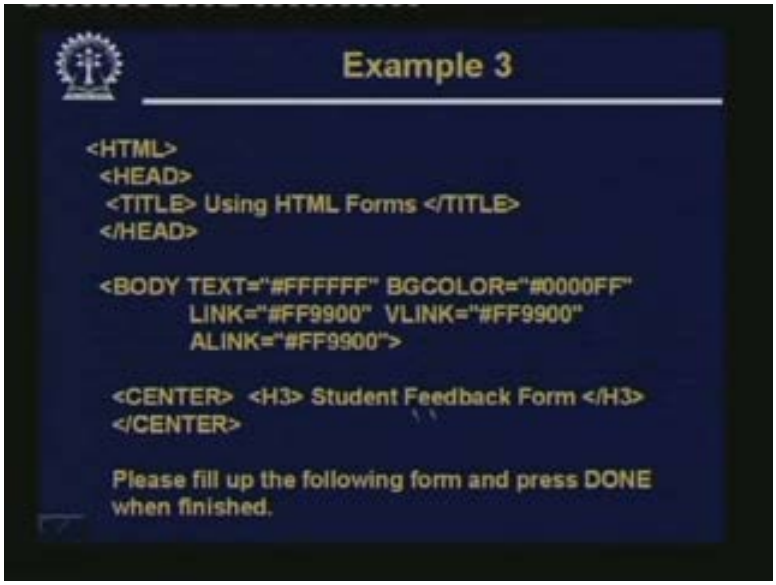


So a third example, so again the first part is student feedback form nothing much to discuss here.

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Well here, so again action some link is given there is a name roll number here you are given a password. Password, size 10 of type equal to password. So here you have defined an input box with a type password, course numbers as usual.

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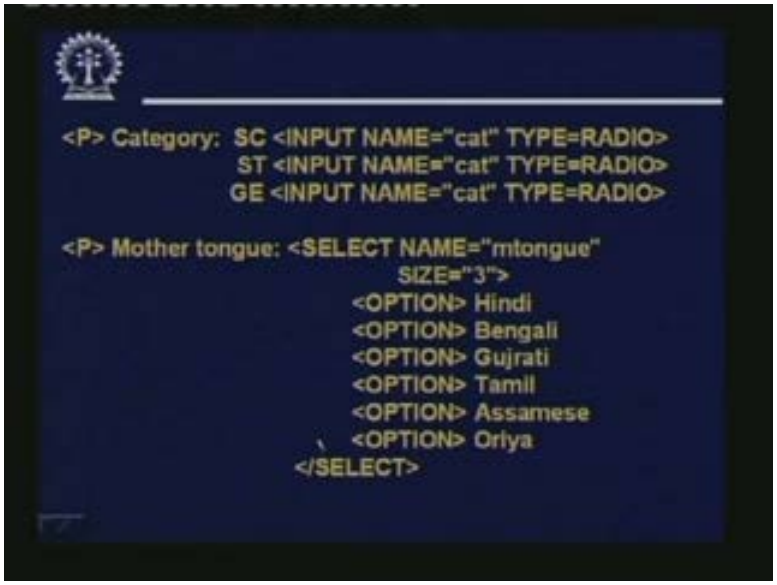


Category as usual, mother tongue as usual. So here I have not made any change.

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But here we made another thing. An example of a check box languages known as I said. Languages known as I had said. Language is known English, Hindi, both are of type check box. Since they belong to one group, their names are the same both have been given the same name language scholarship holder select for yes. Type check box; these are check box with a single button if you are scholarship holder you select it. So you have here also you have given some other name. But this is a check box which is appearing independently only one check box is there. Lastly there is another thing general feedback. If you have any general feedback some text area is there. You can type in something. So rows three columns 20 is given. Thanks for the information the rest is same.

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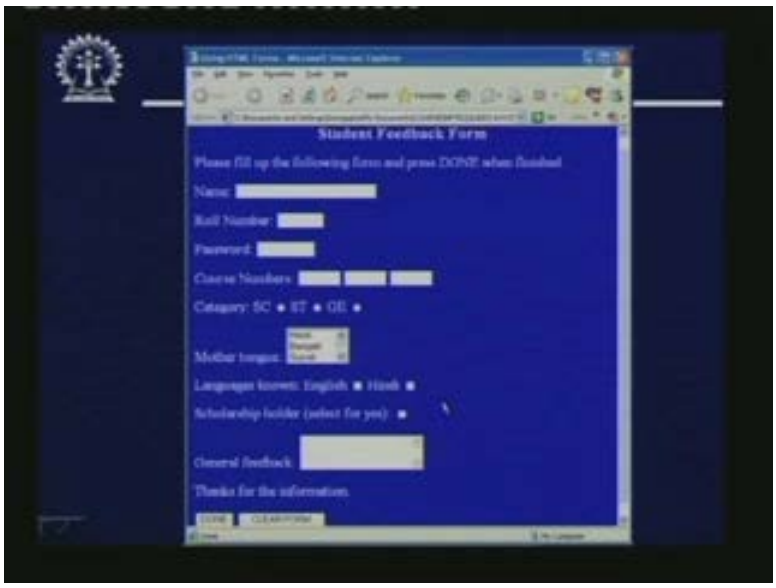

So this, if you show it come like this. First part is as usual so language is known. Now checkboxes are shown in rectangular buttons and radio buttons are shown in the form of circles. Scholarship holder, there is a single. General feedback, there is an area where you can type anything. So this is how the form will appear and in such a form you can type in anything. Then you can submit it will go to the CGI program for further processing.

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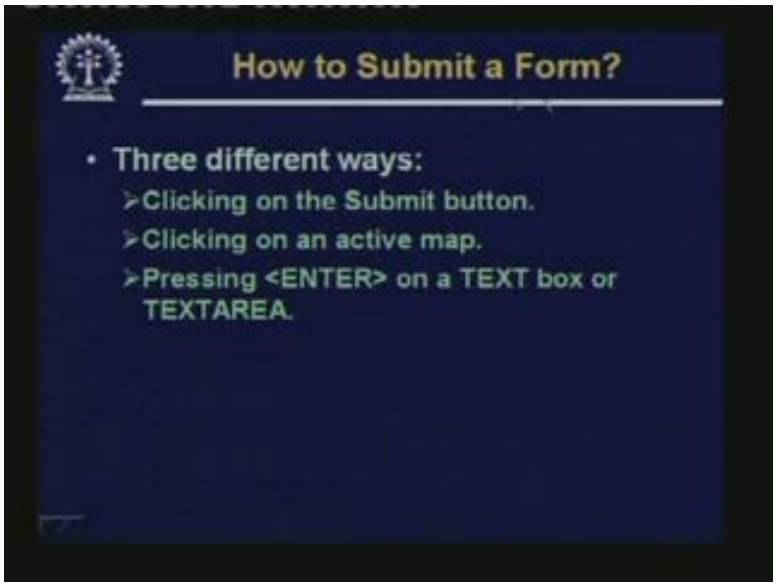


But the next question is how to submit a form? See, after filling well of course you can click on the submit button to submit a form. But there are other two ways also. There are three different ways. You can either click on the submit button using the mouse. Secondly if the form contains an active map, for our examples it did not contain. Then on that active map image if you click it, then also it will get submitted because by definition whenever you click on an active map the x and y coordinates immediately get transferred to the CGI script, that is submit. And the third way is just by pressing enter when the cursor is either on the text box or a text area just in the just select using mouse the cursor and put the cursor somewhere and press enter that will also submit. Just like Google, when you type something, you did not press always on search. You can also press enter that will also submit your request in exactly the same way.

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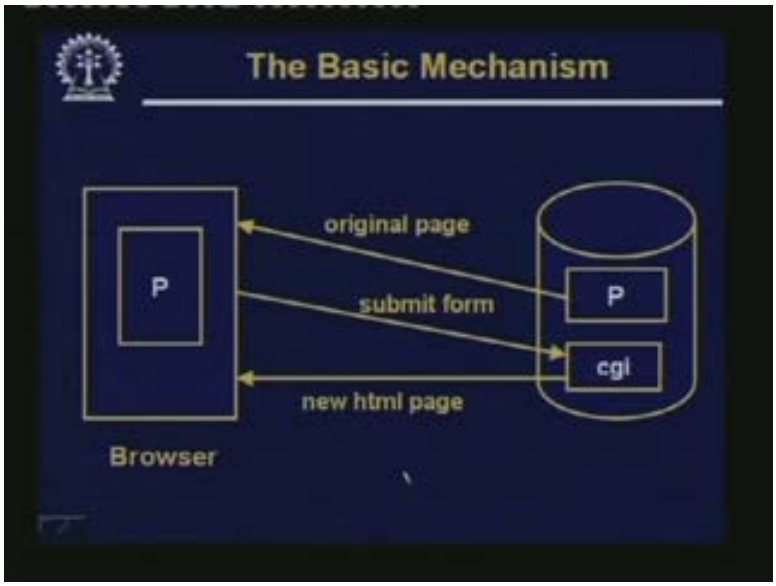


So the basic mechanisms here just look at this diagram. This was the web server. This was the web server or the origin server where a particular page was residing p. Suppose this the browser where I am sitting, so I have typed the URL and this particular page has been fetched and is being displayed currently on the browser. So what I mean to say is that I have fetched a page which contains a form from an origin server and it is presently being displayed on my screen. Now I fill up the form with some data and I submit the form. What happens now?

Now after you submit the form the data that I have entered along with other information regarding the names of the fields will get transmitted to the CGI program. To the server of course, server will forward it to the corresponding CGI program. Now you may ask how does this server knows which CGI program to forward to? There can be so many. The answer is if you look at the syntax of the form tag. The start form tags there are those method and action. So in action you specify the exact URL of the CGI program where to forward the data to which program to execute.

So the data will finally go to the correct CGI program which is also residing on the same origin server. See the web servers do not allow that you are bringing form from one place. But the CGI server is residing in some other place that is normally not allowed. Both must be there in the same place. And the CGI program will take those data as input will execute it and after execution will generate a new html page as an output. Just like the Google search engine does when you submit a request for search it responds back with a new page and that page will now come and replace your old page, you can see it on the browser window.

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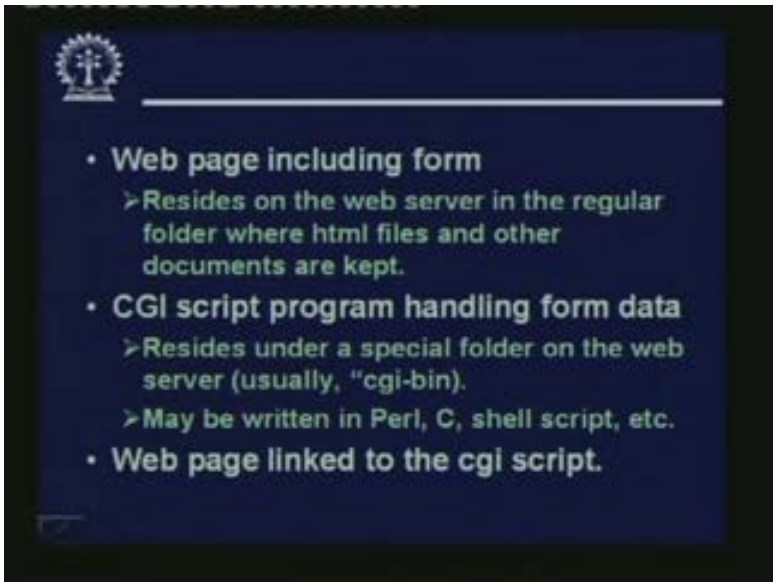


So now a few things just I mentioned, I am just again repeating formally because this concept is very important. The webpage that includes the form. This originally resides on the web server where if you are familiar with installation of a web server like apache. If you are not I strongly recommend that you should down load a web server like apache which is freely available on the net and you can install on your machine and see. You will find that after installing an apache root directory will be created and under that apache root directory some standard folders will be created.

Folders or directories one directory will be called html there will be one directory called CGI bin and so on. So typically in the folder called html all html files and other documents are kept. So this particular webpage which included that form has to reside on that particular folder. Now coming to the CGI script program that was handling the form data CGI script program for many web server they put a restriction that they must reside under a special folder on the web server, usually CGI bin. So all CGI script programs are running or stored under the CGI bin folder.

CGI script program in general can be written in any language PERL, C, Java, Shell script also. And the web page is linked to the CGI script is in the form tag I just mentioned. Now just one point here you may just ask why this kind of restrictions are needed that the CGI programs need to be stored under the CGI bin directory? Wont it be good if my html file and CGI file where stored in one place in the same folder? The reason is that you see CGI program or CGI script is a program that is residing on the webserver and it is executing in response to user requests when the user submits a form.

Now user can be anywhere and anybody. You do not know whether he is an authorized user or someone who is trying to hack your system. So essentially anyone can type in something on the form and can execute that CGI program in your particular directory. So as an additional protection if you keep all such programs in a particular directory, then

some additional protections can be enforced at the level of the directory. So that is one reason why the CGI scripts are typically kept separately. But there are some browsers. There are some web servers again where you can store it anywhere there is no restriction as such.

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So just to repeat, so when you define a form, in the method you specify how the form data will be submitted and in action you specify the path name of your CGI script program. This is as I mentioned typically under the CGI bin directory. And you are specifying the full path you will just mention. You just specifying CGI bin slash myprog. It starts always from the web server root. I said apache root is created under that CGI bin is there. From there it starts checking is there a directory called cgibin it finds things.

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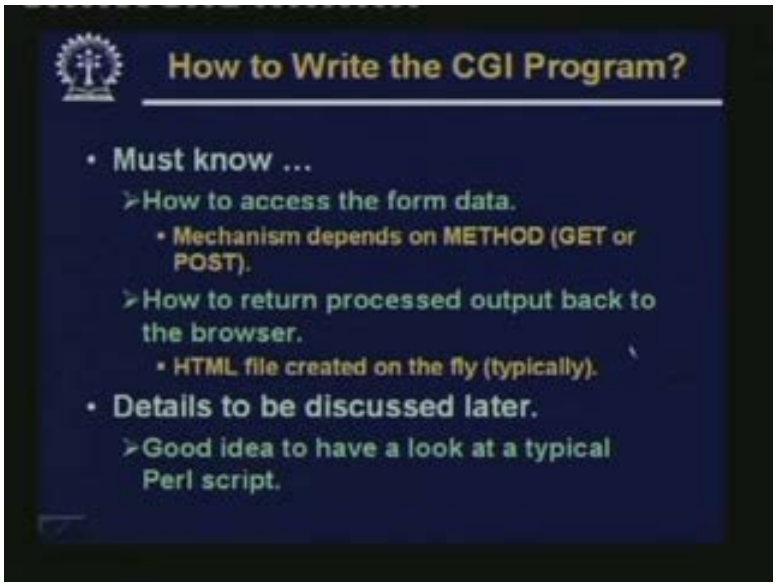


So now a few things regarding the CGI program, how to write the CGI program? Well in order to write the CGI program you need to know a few things. First, how to access the form data? We had just mentioned that there are two methods GET and POST. But we have not yet discussed. When you are writing the CGI program, how should the CGI program read those data from the where? So this is one thing we need to address. This mechanism of course will be depending on the method. For GET it is different, for POST it is different. And how this CGI script will be returning processed output back to the browser.

Because it cannot print something on the screen of the server. It has to go come back to the browser. So this must also be known and how it can generate html file on the fly. So these details we will be discussing later in our next class. But it is always advisable to have a look at a typical PERL script. A CGI script program written in PERL or any other language for that matter and see that what are the components of a CGI script program what are the different parts to it. So this CGI script program in detail will be taken up in our next lecture. We will be talking about CGI scripts and how they can read the data? When they can output the data? And so on.

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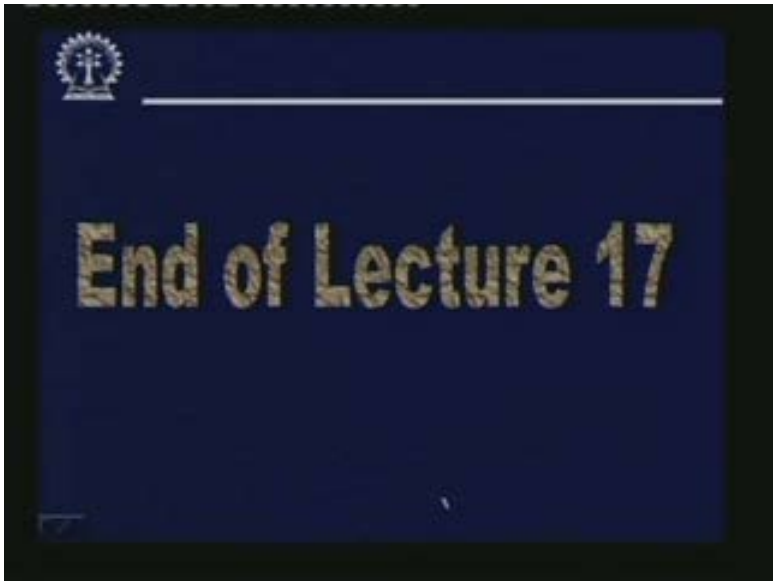


So with this we come to the end of this particular lecture; lecture number 17 on html forms.

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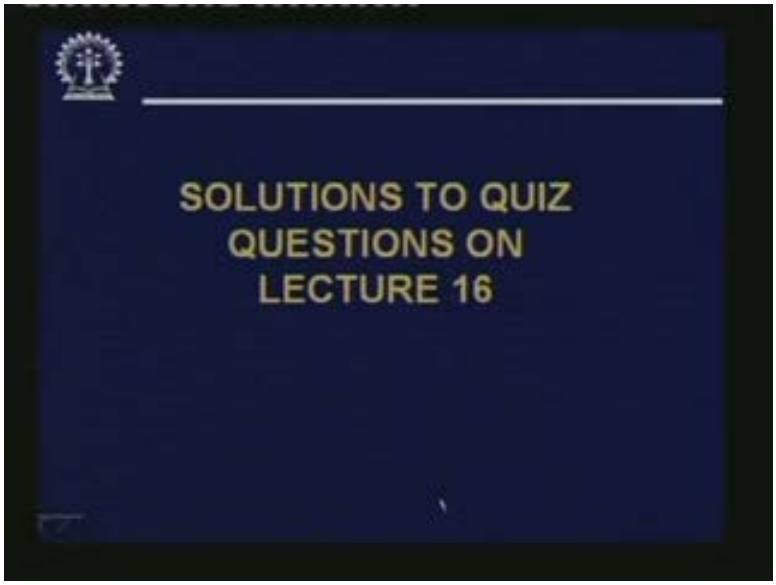


Let us quickly go through the answers solutions to the problems of our previous class.

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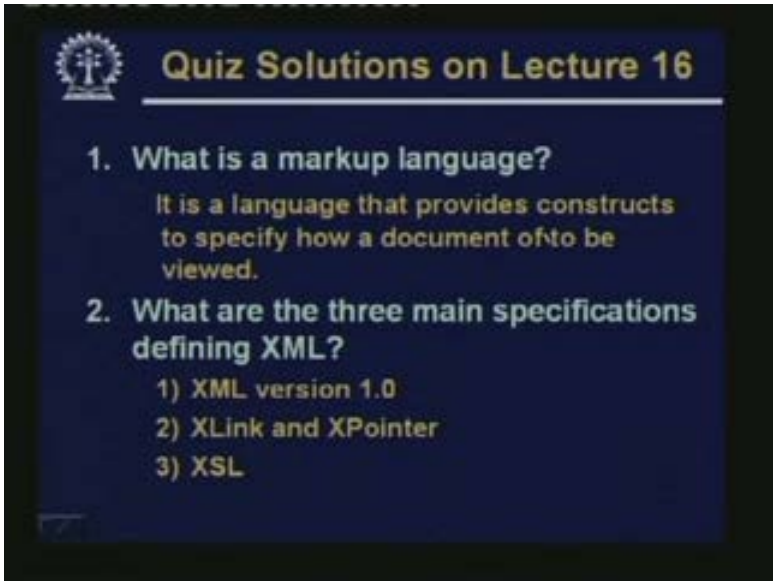


What is a markup language?
Markup language is a language that provides constructs to specify how a document is to be viewed. Sorry this is to be viewed.

What are the three main specifications of defining xml?
This I had mentioned xml the original specification xlink or xpointer and XSL. These are the three.

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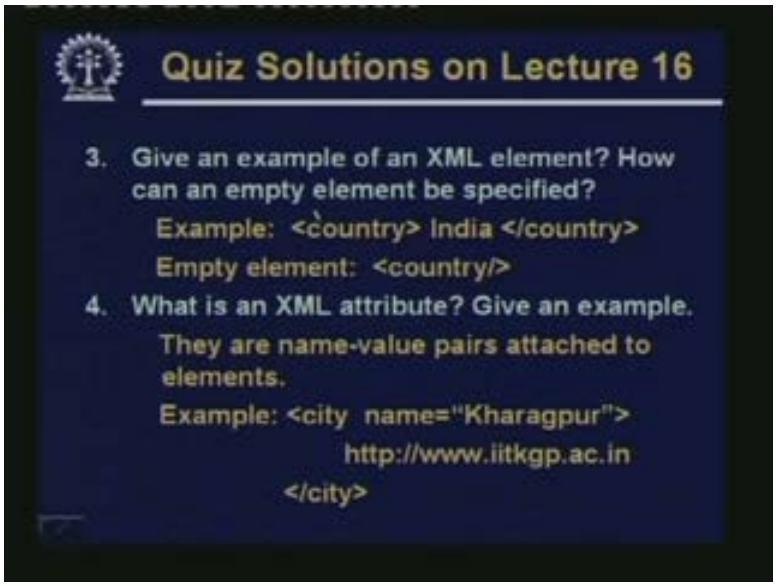


Give an example of an xml element? How can an empty element be specified?
XML element can be defined like this. Empty element can be defined like this with a slash at the end.

What is an xml attribute? Give an example.
They are name value pairs attached to elements. These are elements and this is a name and a value pair. So this is an attribute.

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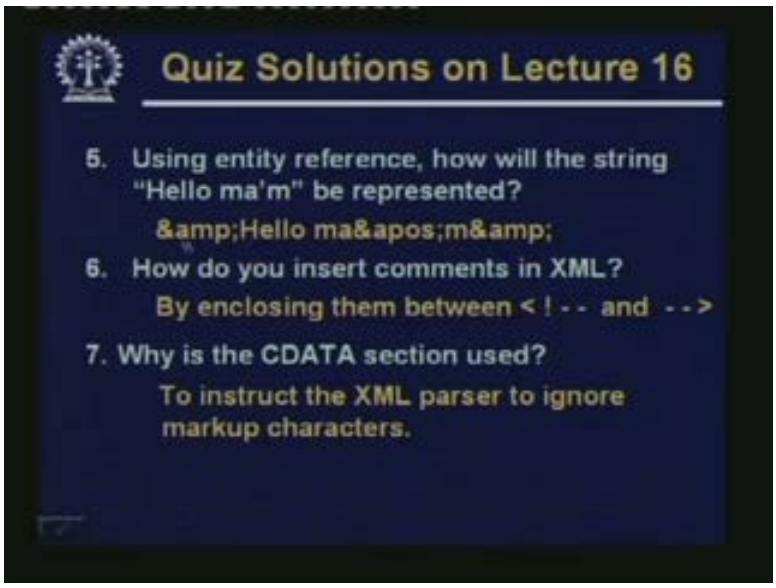


So using the entity reference, how will the string hello ma m be represented?

This initial quote will come like this. Then hello then single apostrophe will come like this. Then this final double quote will come like this.

How do you insert comments in xml?
By enclosing between this beginning and end comment symbols.

Why is the CDATA section used?
To instruct the xml parser to ignore markup characters not to try and expand them.

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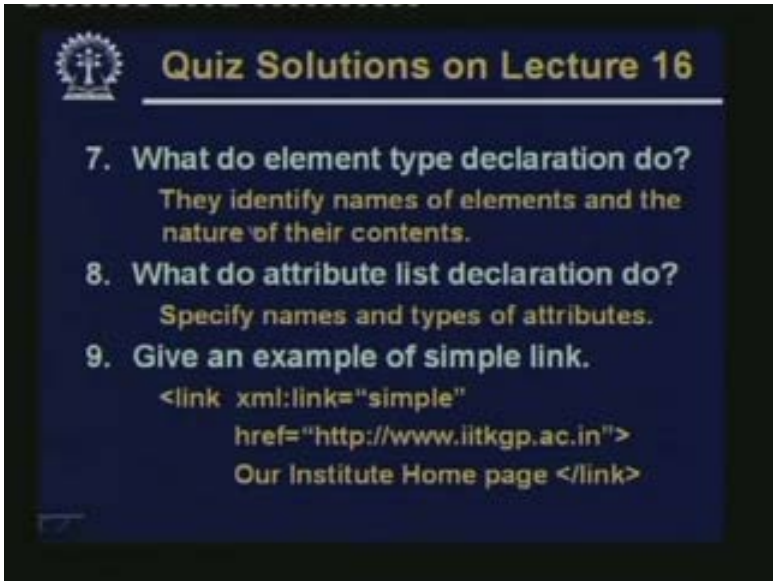


What do element type declarations do?
They identify names of elements and the nature of their contents.

What do attribute list declarations do?
Specify names and types of attributes.

Give an example of simple link.
This is the example we discussed like this.

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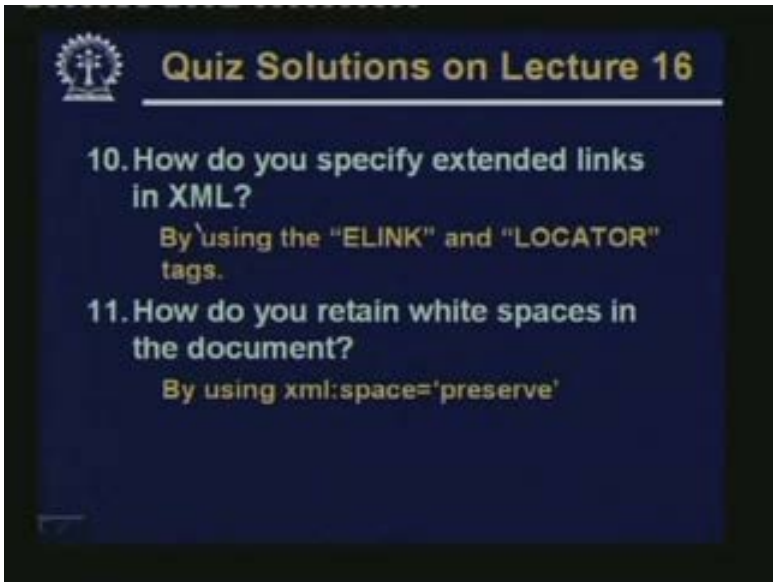


How to specify extended links?
By using the ELINK tag and the LOCATOR tag these two tags.

And how do you retain the white spaces?
By using this preserve value along with the attribute xml space in the particular element where you want to use them.

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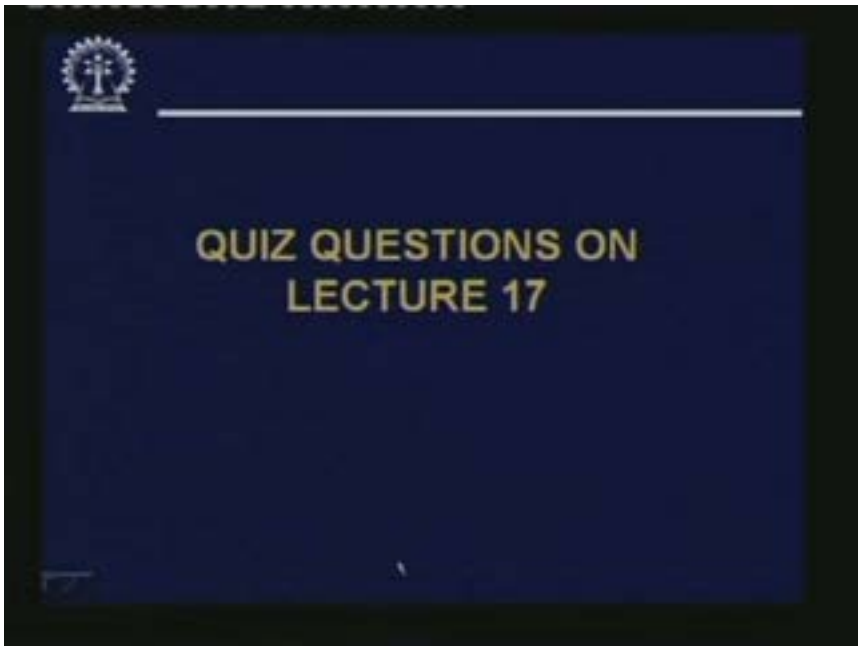

Now some questions for today's lecture.

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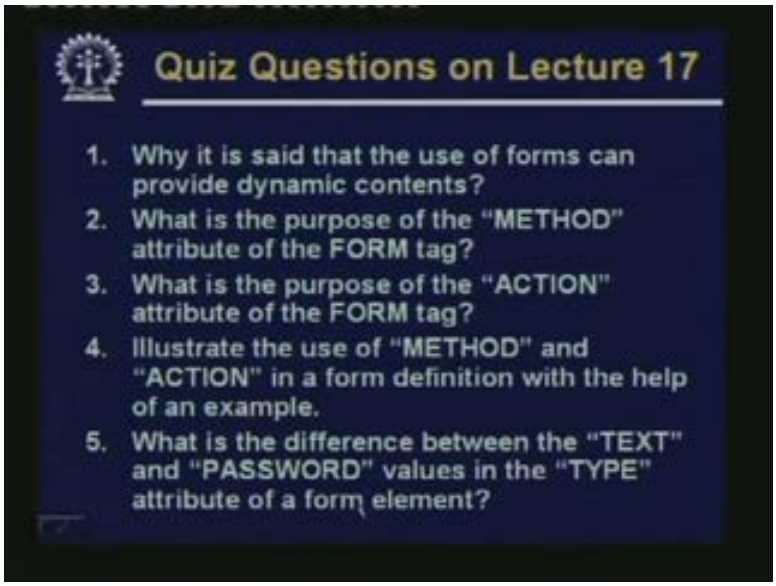


Why it is said that the use of forms can provide dynamic contents?
What is the purpose of the method attribute of the form tag?
What is the purpose of the action attribute of the form tag?
Illustrate the use of method and action in a form definition with the help of an example.
What is the difference between the text and password values in the type attribute of a form element?

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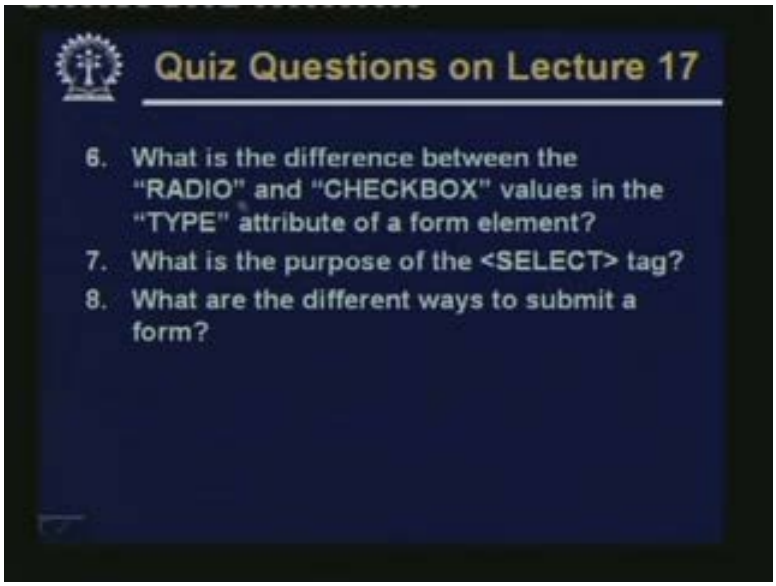

What is the difference between the radio and checkbox values in the type attribute of a form element?
What is the purpose of the select tag?
What are the different ways to submit a form?
So in our next lecture we would be looking at CGI scripts, some details about them.
Thank you.

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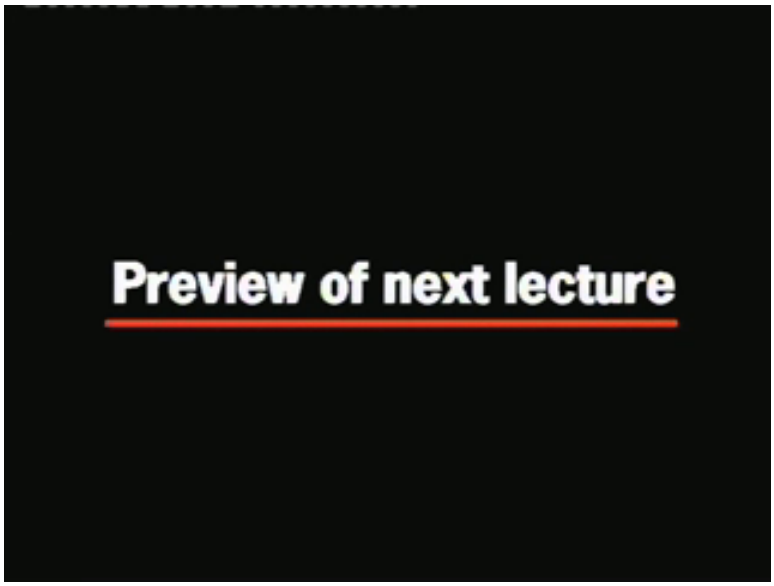


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If you recall in our last lecture, we are talking about html forms. Now using forms what we are able to do? We are able to create an environment through which two-way communication was possible between the web client which is the browser and the web server. So a form was displayed on the screen as part of an html page which a user can fill up and when the form was submitted the data that where filled up would be going all or would be transmitted to the web server. Where a particular program which is linked to that particular form which we had called as a CGI script or a CGI program that would start running. And the CGI program would take the form data that are filled up as an input and would do some processing.

And whatever it generates as output would be coming back and shown on the screen of the browser. Now before going into how a CGI script can be created, the details of it. We would like to talk about another technology or another way in which we can interact with the web server. But not through textual, text boxes, submit button; but through some images by selecting some portions of images. There are some predefined or well defined rules that you can define on the different portions of the image. And depending on where you are clicking on that image you may choose to carry out certain operation.

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So our topic of discussion today is something called image map which provides just that kind of a capability.

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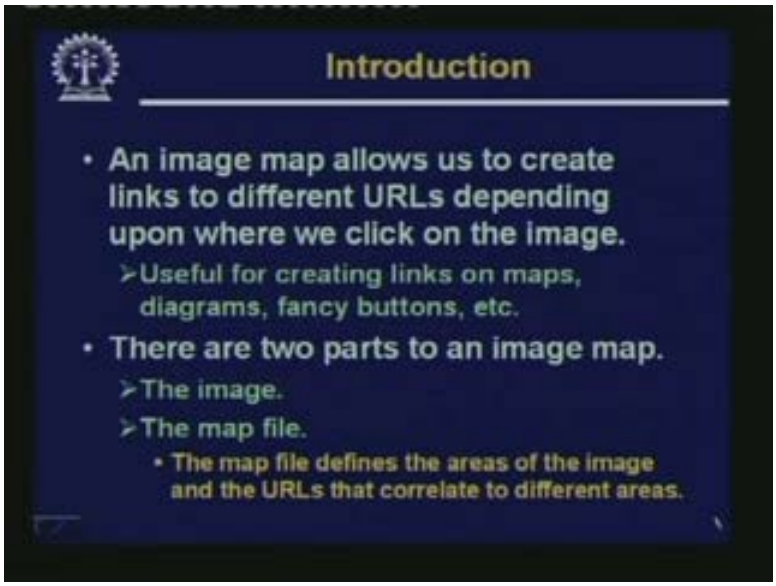


Now let us see what is an image map. Basically an image map it is an image a graphics a jpeg or gif image which is displayed on the screen. It allows us to create links to different URLs depending upon where we click on the image. Now here I am giving a very simple example where this kind of capability may be required or may be useful or desirable. Suppose I want to develop an information system about our country; information about the different states of the country. (….) I can define it at the beginning as base URL and by default in all the other URLs I am giving that will be prep ended at the beginning. This is a way of a short cut. Now you imagine that you have an image you have defined certain regions of the image and you have defined a hyperlink corresponding to it. An URL corresponding to it. And it is not mandatory for you that you must assign each and every area of the image to some hyperlink. So there may be some areas which are not linked. Now if someone clicks on such an area which is not part of region or hotspot, then what happens?

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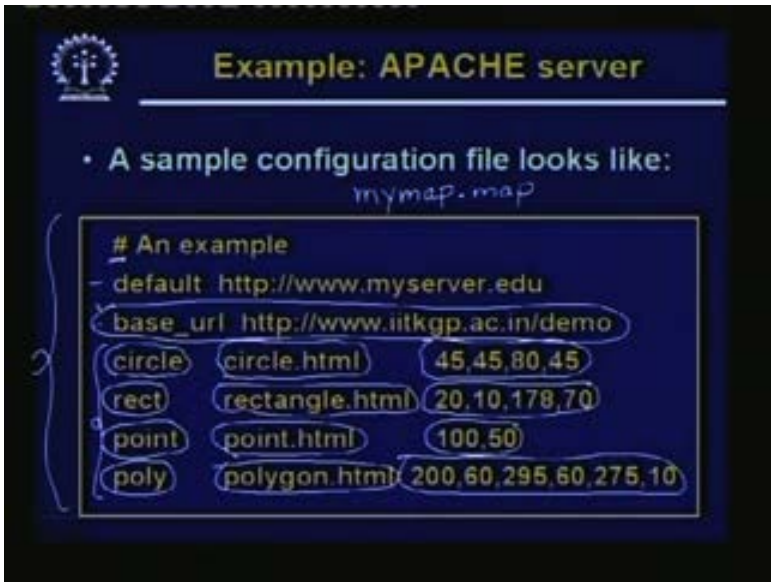


Then you go to the URL specified by the default specification. Default means when you are clicking on some place which is not part of a hot spot then where do oh where do you want to go?

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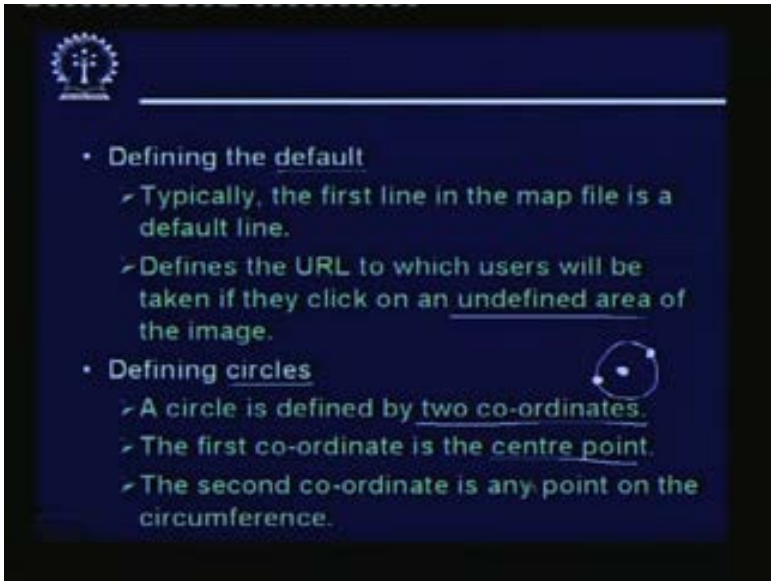


So let us see the different options in a little detail. When you are defining the default as in the first line. This is typically the first line in the map file. This defines the URL to which the users will be taken. If they click on an undefined area of the image. Undefined area means, an area which is not being assigned to a URL in the map configuration file. Similarly I had said when you are defining a circle, you specify two different coordinates

to define the geometry of the circle. Your first is of course the center of the circle and the second one is a point on the circumference. This can be any point on the circumference. This can be, this, you can also have this point and so on. So far, for defining a circle you need two different coordinates. Center and any point on the circumference.

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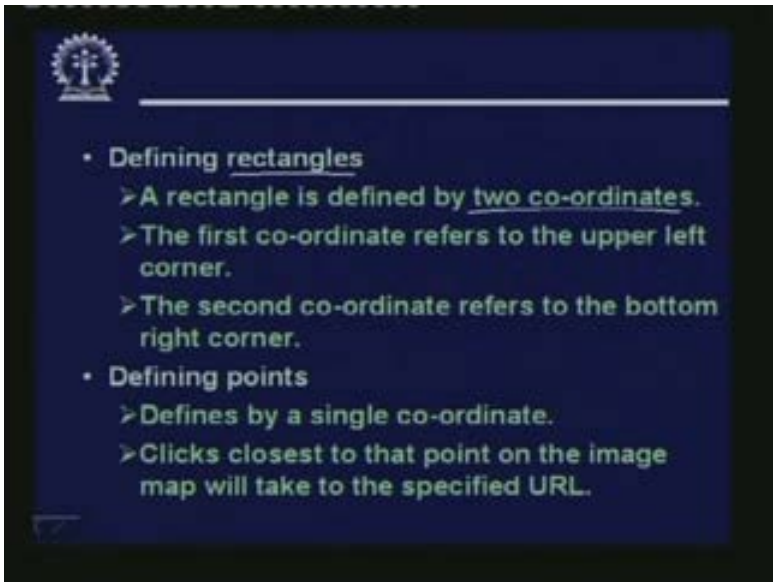


Rectangles again need two coordinates. The first one is the upper left corner. As I had mentioned the second one is the bottom right corner. For defining points, points are referred to as single coordinate. And as I said that when you click closest to that point on the image map as compared to any other region in the vicinity.