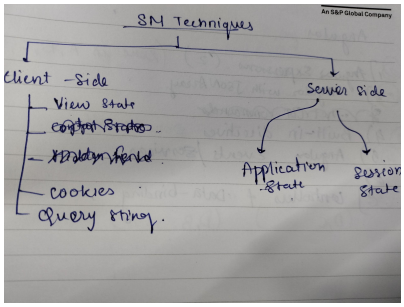
**State management in Asp. Net**

•Web is Stateless that means a new web page object is recreated each time to serve requests of clients.
•HTTP is a stateless protocol that means it can not maintain the client information entered on page.
•Page is recreated before it comes to clients and it happens for each and every request. So it is a big issue to maintain the state of the page and information for a web application.
•This issue can be solved by using State Management.
•ASP.NET Provides some features like View State, Cookies, Session, Application objects etc. to manage the state of the page.

**Types of State management**




**Client side state management techniques:**

1. **View State:**

•View state is one of the most useful client side information management system.
•View state is the mechanism that permits state values of client to be stored during page postbacks.
• Because of the stateless behavior of web pages, values entered by user in web control is not maintained during postbacks.
•When we require values of page variable to be maintained during page postbacks, we can use View state to store those values.
•"EnableViewState" Property is used for both Page Level and Server Control Level to manage the view state.

•Values stored in hidden form fields are send to server to maintain state of client. When we view the page source in browser of a page that uses hidden form field to maintain View state, we see code like this.
<input type="hidden" name="viewstate" id="viewstatel" value="123"/>

•This single hidden field contains all the view state values for all the page controls.
•ASP.NET pages provide the View State property as a built-in structure for automatically storing values between multiple requests for the same page.

**•Limitation of view state**

1. Viewstate can be used only with single page.
2. Because it stores information as hidden field, it can be seen in source code in browser, hence it is not secure way.

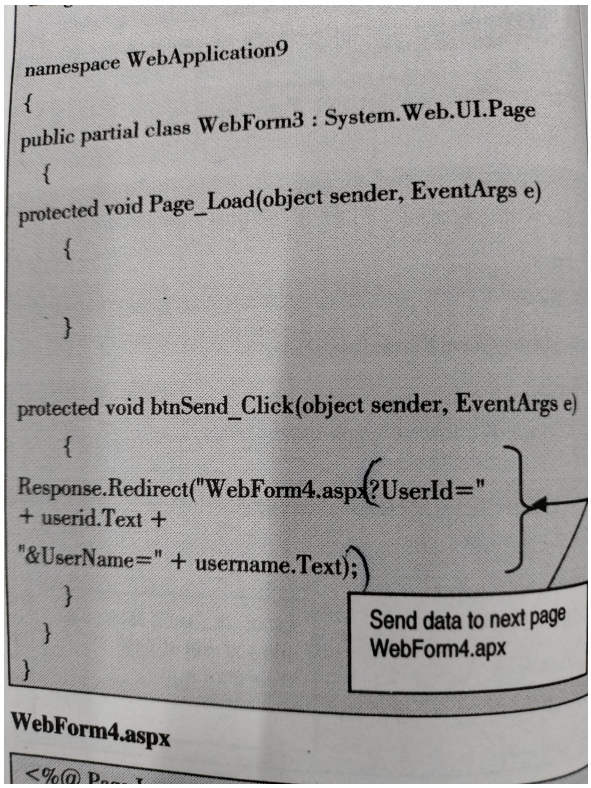
2. **Query String**.

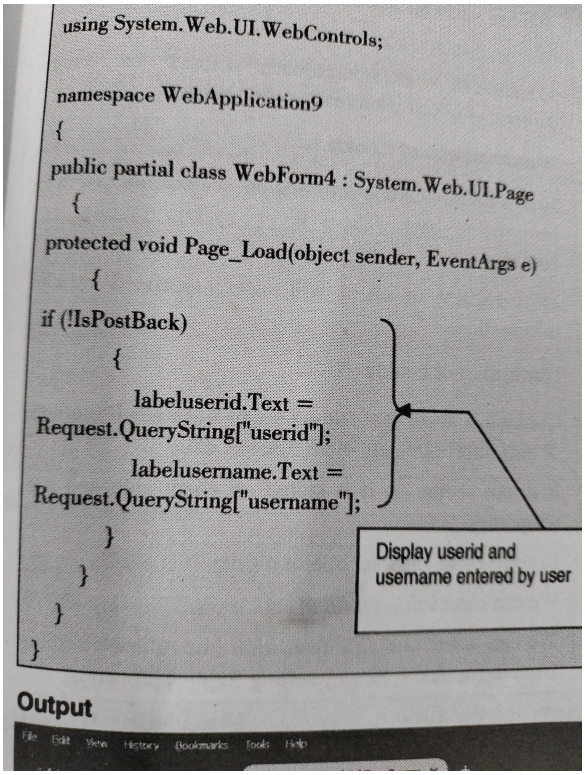
•Query string is the mechanism which used to send data from one web form to another web form using URL.
•Query string is made up of two parts; field and value and each pair is separated using ampersand (&).
•?(Question Mark) is used at starting of a query string and it's value.
•Request object of QueryString property is used to retrieve the query string

**limitation**

1. length of query string. So query strings cannot be useful to send very large data.
2. Query strings are visible to the user, so it should not be used to send sensitive information such as username, Password without encryption.

Example: Passing data in textbox (userid and username) to next page.
From webform3.aspx.cs to webform4.aspx.cs



3. **Cookies:**

•Cookie is a small piece of information stored on the client machine which is used to identify a user.

•It is used to store private information of user such as Username, Password, Address, Contact no. etc on client machines.

•Cookies are used for authentication of a user, store private information of user and shopping cart contents, or anything else that can be accomplished through storing text data.

•Cookies can also be used for transformation of data from one page to another page.

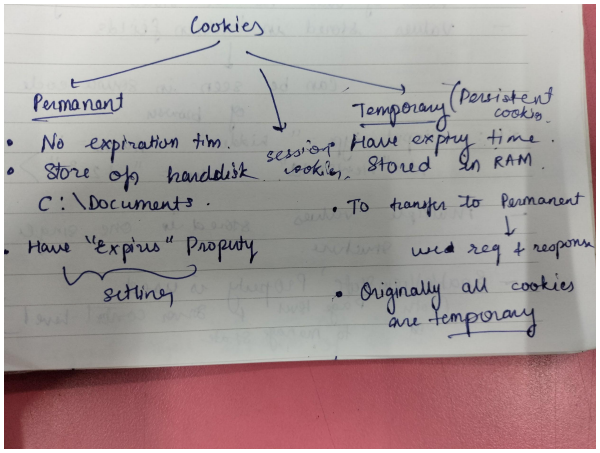
•For example, if a user requests a page from a web site, then the web application sends not just a page,but also cookie which includes the date and time of the page. The browser also gets the cookie, which is stored in a folder on the hard disk of client machine.

•After that, if user requests a page from the site again by entering the URL of web page in the browser, the browser see in the local hard disk for a cookie associated with that URL. If the cookie exists for that URL, the browser sends the cookie to the site with the page request. The application can then state the date and time on which user lastly visit our web site. We can use the information in the cookie to display a message to the user or check an expiration date.

•Cookies are not associated with a Web page, it is associated with web site. So the server and browser will exchange information stored in cookie without limitation of what page the user wants from our site. As the user visits many web sites, each web site may send a cookie to the browser of user. All the cookies separately stored by the browser.

•To use cookie concept, we need to import namespace called Systen.Web.HttpCookie.

Cookies are of two types:



It is easy to create a cookie in the ASP.NET with help of Response object of HTTPResponse class or HTTPCookie class.

Each cookie have unique name so it can be identified later using that name.

Example:

```
HttpCookie userinfomaration = new HttpCookie("userinformation");
userinformation["username"] = "Ram"; userinformation["usercolor"] = "White";
userinformation.Expires.Add(new TimeSpan (0, 1, 0));
Response.Cookies.Add(userinformation);
```

•It is easy to read cookie value form cookies by help of Request object of HTTPRequest class.

Example:

```
string user_color = string.Empty;
string user_name = string.Empty;
 user_name= Request.Cookies["username"].Value;
 user_color= Request.Cookies["usercolor"].Value;
```

**Limitation of cookie**

•Cookies is small text file so it can store small amount of data approximately 4096 bytes of data.
•It is not secure as it is stored on client side and are temporary.
•In some cases browser does not support cookie. We can clear information in cookies in following way.
*userInformation.Expires.DateTime.Now.AddHours(1)*;

•We can delete cookie information from client machine from the cookie folder by setting Expires property.
•Cookie information will deleted after the one hour of cookie creation.