***Advance java***

**Advance java topics**

* **HTML.**
* **CSS.**
* **Java Script.**
* **Servlet.**
* **JSP(Jakarta Server Pages).**
* **Session, cookie.**
* **MVC (Model View Controler).**
* **BigInteger.**
* **InnerClass.**
* **Lembda Expressoion.**
* **Adapter class.**
* **Object class.**
* **Grabage Collector(G.C)**
* **Wrapper class.**
* **Templet class.**
* **Singletan class.**
* **Advance Swing.**
* **Desktop Application.**
* **JTabble Pane.**
* **CardLayout.**
* **Jpanel.**
* **MySQL.**
* **Advance Polymorphism.**
* **JDBC at the place of java version 9 version feature JShell.**

|  |  |
| --- | --- |
| **StringBuffer** | **StringBuilder** |
| StringBuffer operations are thread-safe and synchronized | StringBuilder operations are not thread-safe are not-synchronized. |
| StringBuffer is to used when [multiple threads](https://www.edureka.co/blog/java-thread/) are working on the same String | StringBuilder is used in a single-threaded environment. |
| StringBuffer performance is slower when compared to StringBuilder | StringBuilder performance is faster when compared to StringBuffer |
| **Syntax:** StringBuffer var = new StringBuffer(str); | **Syntax:** StringBuilder var = new StringBuilder(str); |

**Some Pointer :-**

**Q difference between return and System.exit(0)?**

**Ans:- return control ko calling method ke pass le jata hai and System.exit(0) control ko main() method se bhi bahar le jata hai.**

* **Web browser data ko http request ki help Web Server ko pahochata hai. and Web Server http response ki help se data Web Browser ko deta hai.**
* **Hum advance java ki help se Web Application banate hai.**
* **HTML se hum form ye sab ready karte hai.HTML ke father Tim Berners Lee hai or es language ki khoj unhone 1993 me ki thi.**
* **CSS se uski styling karte hai.**
* **Java Script se hum validation lagate hai. Validation ka mtlab check karna ki data valid hai ya nhi.**
* **Jo web Browser se data ko fill karte hai usse web server pr store karane ka kam servlet karta hai. Servlet java ki ek class hai.**
* **Hum pahle project Apache Tomcat ki help se Notepad++ me banana sikhege uske baad NetBeans pr banayege kyo ki netbens bahot sare fetures by default deeta hai but hum internal working ko samjhne ke liye pahle Notepad++ hi use karege.**
* **Jis tarha AWT ka advance version Swing kahlata hai. Vese hi servlet ka advance version JSP(Jakarta Server Pages) kahlata hai.**
* **Server se aye hoye data ko store karne ke liye hum MySQL ka use karege.**

**Web Browser:- Web Browser ek client,program,software or tool hota hai. Jiske dovara hum HTTP request web server ko sent karte hai. Ye janta hai ki ese server se kese communicate kerna hai. Web Browser ka main purpose hota hai ki ye locate karna ki apka content kaha hai World Wide Web pr . or jo server se response ata hai image ,text,video ,audio ke form me usse display karna. Ex:- WWW , FireFox, Opera mini, Safari, google Chrome .**

* **Web Browser me Web ka mtlba hota hai jaal jisko computer ki language me Internet ka name diya hai. Or Browser ka mtlab hota hai dhundna.**

**Web Server :- Web Server ko hum software bhi kah sakte hai or hardware bhi kah sakte hai. Jo HTTP request leta hai or resources ko find ker ke response deeta hai Client ko.Web Servers serf Web Application ko service provide karvate hai baki kise ko nhi. Client or server ke beach me jo bhi communication hota hai vo usse HTTP request ke form me hota hai.**

**Web Server bahot type ke hote hai jese apache hota hai jisne hume Tomcat web server diya hai.**

**1.HTML**

* **Html me ek <head> </head> and <body> </body> tag hote hai <head> me <title> </title> hota hai and body me peragrah and heading ye sab hota hai.**
* **Html ka full form hyper text markup language hai.**
* **Created by tim berners-lee hai.**
* **Ye specifically wirld wide web pages bana ne ke liye banaya tha.**

**Features of HTML**

* **Html non case sensitive language hai.**
* **Html atributes 2 “<” “>” ke ander likhte hai.**
* **Html tags <html> </html> ke ander hi likhte hai.**
* **Esme first <html> start tag hota hai and </html> ending tag hota hai.  
  Points**
* **Yadi hum cahate hai line change ho jaye us String ko paragraph tag <p> </p> ke beache me likhte hai.**
* **Yadi background color change karna hai to <body > tag ke ander hume bgcolor=”red” . Ex:- <body bgColor=”red”>**
* **Yadi text ko align karna hai to Ex:- <p align=”Center”>Manish </p>**
* **Yadi hum cahate hai ki word pr cursor le jane se kuch msg show ho to**

**Ex:- <p title=”MSG”>Softwaves</p>**

* **Heading me sabse bada size <h1> </h1> ka hota hai.hum heading me <h6></h6> tak de sakte hai.**
* **Heading by default bold hoti hai. peragraph nhi hota hai .**
* **1 heading ke bad dusri heading next line se ati hai. Hum esme align and title attribute bhi laga sakte hai.**
* **Paragraph change karne pr by default 1 line ka gap chod deta hai.but yadi hum cahate hai serf line change ho to <br> tag ka use karege jaha se line change karna hai vaha.**
* **Yadi text ko bold karna hai to <b>manish</b> ka use karege.**
* **Yadi italic karna hai to <i>Manish</i>**
* **Yadi under line karna hai to <u>Manish</u>**
* **Yadi Striking karna hai to <s>Manish</s>**
* **Jo kam <b> tage karta hai vhi kam <stong> tage bhi karta hai.**
* **Yadi tag ko normal size se bada karna hai to <big></big>**
* **Yadi normal se chota karvana hai to <small></small>**
* **Yadi hum cahate hai ki base pr value aye like H2SO4 jesa hum likhte hai to subscript tage <sub></sub> ka use karege**

**Ex:- <p> H <sub> 2</sub> SO <sub> 4 </sub> </p>**

* **Yadi hum cahate hai power me aa ker show ho like 2 ki power 5 =32 so**

**Ex:- <p> 2<sup> 5</sup> =32</p>**

* **Yadi font ka size change karna hai to <font size=”1”></font> tag ka use karge.hum size 7 tak hi save ker sakte hai usse jiyada dene pr bhi vaha 7 tak hi manega.**
* **Yadi hume font ka style change karna hai to face attribute ka use karege**

**Ex:- <font size=”1” face=”style name”></font>**

* **Yadi hum horizontal line lana cahet hai to <hr> tag ka use karege.**
* **Hum Color height and width bhi set kar sakte hai .**

**Ex:- <hr size =”10” width=”10” height = “10”>**

* **Yadi hum cahate hai ki text screen pr move kare to hume <marquee> tag ka use karna hoga . ye by default right se left direction me move karta hai.**

**Ex:- <p><marquee bgColor=”red”><fontcolor=”white”>softwaves</font> </marquee></p>**

* **Yadi hume direction change karna hai to direction=”left” lik sakte hai inside <marquee> tag**
* **Hum marquee ki hight and width set ker sakte hai .**
* **Yadi hum content me word ke beach space cahate hai to &nbsp ka use karege 1&nbsp= 1 space hota hai.**
* **Yadi hum cahate hai jesa humne likha hai vesa hi aa ker disply ho space ke sath to preformeted text tag<pre></pre> ka use karege .**
* **Yadi hum image display karvana cahate hai to**

**Ex:- <img src=”image name.type of image”>**

* **src mtlab sorce mtlab image kaha pr rakhi hai.**
* **Jaha program save hai vhi pr image ko rakhna hai.**
* **Yadi hume image ka size set karna hai to width and hight ka use kar sakte hai.**
* **Yadi kisi condition me image nhi ati hai to us condition ke liye hum ulternative word de sakte hai. alt=””**

**Ex:- <img src=”Name” alt=”softwaves”>**

* **Yadi image aa jayegi to alternative text nhi dikhega.**
* **Hspace and vspace ki help se hum image ke beach gap de sakte hai.**
* **Yadi hum image ke just pass se kuch text cahate hai to to image ki height, width and align set karna hoga.**
* **Yadi hum us image ke neache cahiye to utne break lagana hoga hum cahate hai ye na karna pade to <br clear=”left”> kerne se jaha se image end hogi vhi se text ayega.**
* **Yadii hum cahate hai 10 image ek hi line me aye usme gap na ho to sabhi <img> tag ko ek hi line me rakh do.**
* **Table create karne ke liye <table > tab ke ander <th> and eske ander <tr> and eske ander <td> tag ka use karna hoga.**
* **Table me by default boarder nhi hoti hai.yadi hum lagana cahate hai to <table boarder =”1”> </table> de sakte hai.**
* **Heading ka data by default bold hota hai and center me bhi ata hai but row ka data normal and left side me ata hai.**
* **Table heading <th></th> ko kahi bhi likh sakte hai.**
* **Yadi hum cahate hai ki table ka data center me aye to <td align=”center”></td>**
* **Yadi hum table ander vale data and table ke beach space cahate hai to cellpadding="" ka use karege.**
* **Yadi hum dono border ke beach me space cahate hai to cellspace=”” ka use karege.**
* **List 2 type ki hoti hai unOrder and Order**
* **unorder me booletPoints ate hai <ul><li>java<li></ul>**
* **Order me number ate hai <ol><li></li></ol>**
* **Hum eska type bhi change ker sakte hai.**
* **Definetion ke liye <dl><dt></dt></dl> . dl means definition list dt mtlab definition type.**
* **Form create karne ke liye sabhi kuch <form> tag ke ander likhege.**
* **TextFiled ke liye <input type=”text”>**
* **PasswordField ke liye <input type=”password”>**
* **Button ke liye <input type=”button” value=”click”>**
* **PalceHolder ke liye <input type=”text” placeholder=”Enter Name”>**
* **Reset Button ke liye <input type=”reset”>**
* **Submit Button ke liye <input type=”submit”>**
* **Value attribute ki help se hum name change ker sakte hai.**
* **Normal button khali ata hai kuch likhne ke liye value ka use karna padta hai.**
* **Reset button pr reset likh hota hai eske click pr text fields ka data remove ho jata hai.**
* **Submit ke click pr flow <form> ke pass jata hai yadi hume kuch action karvana hai to <form action=””> likh do.**
* **Yadi hum <input type=”Email”> dete hai to @ lagana jaruri hai while filling information. Otherwise it will give alertBox.**
* **Radio button ke liye <input type=”radio”> hoga .**
* **Yadi hum cahate hai ki dono me se 1 hi select ho to usko same group me rakhna hoga Like Male<input type=”radio” name=”M”> femail<input type=”radio” name=”M”>**
* **CheckBox ke liye <input type=”checkBox” checked> yadi hume by default check cahiye to uske ander checked likh do.**
* **Choice banana ke liye <select> <option>java</option> </select>**
* **Yadi list banana hai to <select multiple> <option>java</option> </select>**

**CSS**

* **There are three type of CSS :- inline CSS ,Internal CSS , External CSS.**
* **Yadi hum single - single tag me CSS Apply karte hai to usse Inline CSS kahte hai.**
* **Yadi page ke <head> me CSS Apply karte hai to usse Internal CSS kahte hai. esse head me change karne pr us pure page me change aa jayega.**
* **Yadi hum cahate hai ki 1000 page hai us sabhi me change ana cahiye to hum eka lag page banyege esse hi External CSS kahte hai.**
* **Ancher tag ke under line ko hatane ke liye style =”text-decoration:none” karna hoga.**
* **Line height ka mtlab ek letter se dusre ke beach ki distance.**
* **Font size badhane ke liye style=”font-size:100px”**
* **Image set karne ke liye <img src=”image name with extention”**
* **Border set karne pr by default clock wise direction me property set hoti hai.**
* **Id ko # se and class ko . se show karte hai CSS me.**
* **Gradiant set karne ke liye background:liner-gradient(r,g,b);**
* **Unorderlist ke list ke data ko ek line me lane ke liye display:inline-block ka use karege.**
* **Background me light shedo lane ke liye background:rgba(0,0,0,0.5); ka use karege.**

**JavaScript**

* **JS ka use hum web page pr validation apply karne ke liye karte hai.**
* **JS clint side programming language hai.**

**Q15 yadi hum java se bhi security provide ker sakte hai to fer JS ki jarurat kyo padi ?**

**Ans:-JS clint Side programming language hai jabki java server side programming language hai.yadi hum java ka use karte hai and kuch invalid datte web page pr dete hai to vo direct web server ke pass jata hai check hone and fer jo response hota hai vo ata hai esa hi bar bar hota hai jab jab invalid details dalte hai to jisse bar bar server se ane jane me time weste hota hai . esliye JS se web page pr hi check ho jata hai and jiske karna bar bar server pr nhi jana ana padta hai jisse time bach jata hai.**

* **JS ko hum <Script type=”text/javaScript”></Script> tag ke ander hi likhte hai.ese hum head and body dono me bana sakte hai.**
* **Hum sabhi type ke data ke liye var data type ka use hai.**
* **JS me all type ke arithmetic data type ko use kar sakte hai{+ , - , \* , / , %}.**
* **Bina data var type ka use kare bhi humara program proper work karta hai.**
* **All type ke relational operator ka use kar sakte hai.yaha operator ka return type Boolean hi hai.(< , > ,<= ,>= ,<<< , >>> , =).**
* **Increment dicriment ka bhi use ker sakte hai. (++ , -- )**
* **Logical operator ka bhi use ker sakte hai .(&& ,|| ,!)**
* **bitwise operator ka bhi use ker sakte hai.(& , | , ^ ,~ )**
* **Assignment operator ka bhi use ker sakte hai.(+= , -= ,\*= ,%= , /=)**
* **Ternary operator ka bhi use ker sakte hai.(+= ,-= , \*= ,%= ,/=)**
* **All type ke conditional operator bhi use ker sakte hai(if ,else ,nested if ,elseif ledder ,switch case).**

**Ex:-**

**<html>**

**<head>**

**<script type=”text/javascript”>**

**if(false){**

**document.write(“ram<br>”);**

**}**

**else{**

**document.write(“sita<br>”);**

**}**

**</head>**

**<body>**

**</body>**

**</html>**

* **Script tag ka use <body></body> and <head></head> dono hi ke ander ker sakte hai.**
* **Loops ka use bhi ker sakte hai sabhi type ke.**

**Ex:- <html>**

**<head>**

**</head>**

**<body>**

**<script type=”text/javaScript”>**

**for(i=1;i<=10;i++){**

**document.write(“sita<br>”);**

**}**

**</script>**

**</body>**

**</html>**

* **Function create kern eke liye return type ki jarurat nhi hai. bas function keyword ka use kerna hoga.**

**Ex:- function demo(){**

**Document.write(“ram<br>”);**

**}**

* **Function direct bhi call ker sakte hai. Like demo();**
* **Parameter bhi use ker sakte hai.**

**Ex:- function demo(int x , int y){**

**document.write(x+y);**

**}**

**demo(10,20); // call function**

* **return keyword ka bhi use ker sakte hai.**

**Ex:- function demo(int x, int y){**

**return x+y;**

**}**

**a=demo(10,20);**

**document.write(a);**

**Servlet**

* **Servlet main code**

**<web-app>**

**<servlet>**

**<servlet-name>anyName</servlet-name>**

**<servlet-class>Class\_Name</servlet-class>**

**</servlet>**

**<servlet-mapping>**

**<servlet-name>Same\_name of above</servlet-name>**

**<url-pattern>/duplicat\_className</url-pattern>**

**</sevlet-mapping>**

**</web-app>**

* **Clint site Applet hai and server site servlet hai.**
* **Xml Page ka name fix WEB.xml hi hona cahiye.**
* **Program humesa url-pattern me jo duplicate name dette hai usse hi run hoga.**
* **Hum program ka duplicate name rakh dete hai and us name se hi hum program ko run karvate hai esse original name kise ko pta nhi cahlta hai yahi sequrity ka reason hai.**
* **Sequrity ke purpos se xml ka use karte hai.**
* **Eska ek or name deployment descript bhi hai.**
* **Program run on browser:- localhost:8080/project\_name/url-pattern\_Name**
* **Files save:- Apache->webApps->CreateProject(save All .html , .jsp files)->CreateOneFolder(WEB\_INF(WEB.xml file))->createFolder(classes(All .classes files))**
* **Web.xml file serf 1 hi banegi 1 se jiyada nhi.**
* **Query String me Screen ka data url me bhi dikhta hai.**
* **Query String Program run on web browser:-**

**localhost:8080/project\_name/url-pattern\_Name?un=”sita”&up=”gita”**

* **html page ko run on web browser url :- localhost:8080/project\_Name/Htmlpage\_Name.html**
* **html page ke form me action me usse page ke servlet ka duplication name ko dete hai like Login ka html page to Login ki servlet ki xml ka url patter mtlab duplicate name.**
* **servlet ki classes ko public hi rakhna hai.**
* **Jab jab bhi hum servlet ki file ko compile kara ker paste karte hai .classes folder me to tab tab server ko restart karna padta hai.**
* **Eske S.o.pln ka use nhi ker sakte hai.**
* **Ek out.println() me kitna bhi code likh sakte hai but ek hi line me hona cahiye.**

**Q What is servlet?**

**Ans:- servlet ek ese technology hai jiska use run time pr webpages ko junrate karane me karte hai.esko sun micro system me banaya hai . yaha server side programming hai.mtlab server mendatory hai. servlet ko sun karane ke liye.**

* **servlet ke pahle log CGI(Common Gateway Interface) ka use karte the. esme jese jese request badhti thi to performance dicrese hota tha.**

**Q what is ServletConfig and ServletCotext ?**

**Ans:- ye dono interface hai .eski clases ko hum fix nhi ker sakte hai.alag alag servlet ke liye eski implementation classes different hoti hai.**

* **puri web application ke liye 1 hi servletConext create hota hai and ServletConfig har servlet ke liye different – different create hota hai.**
* **hum servletConfig and servletContext se hum xml se information ko read karva sakte hai.**
* **ServletContext se hum 2 application ke beach communication karva sakte hai.**
* **Yadi puri web application ke liye esa unique object cahiye jo puri application me same data ko share kara sake to ServletContext ka use karege.**
* **1 servletConfig for 1 servlet and 1 servletContext for 1 web application.**

**Q what is RequestDispacher?**

**Ans:- ye ek interface hai jo object define karta hai. ye request ko receive karta hai jo ki clint request karta hai usse and usse dispatch karta hai particular resourse me like (Servlet , Html ,JSP files).**

* **Eske pass 2 methods hoti hai.**
* **public void doGet(ServletRequest request , ServletResponse response){}**
* **public void doPost(ServletRequest request , ServletResponse response){}**
* **forword() method Request ko ek Servlet se dusre resourse (Such as servlet,jsp,html files). Jump on 1 page to another page.**
* **Include() method me yadi wrong cridantial dala to usse page pr show karta hai. means include karta hai page ko.**
* **getRequestDispacher() method ServletRequest class ki method hai jo ki RequestDispatcher ka object return karti hai.**

**Q what is Working of Container?**

**Ans:- Web server me web browser se http request ke through bheji jati hai es time request Html page ke liye na ho ker servlet ke liye hoti hai.**

* **Server ye notice karta hai ki request kiske liye aai hai html page ke liye ya Servlet hail iye .**
* **Ab Server us servlet request ko Container ko de deta hai . container ab 2 object request and response create ker ke us servlet ki duplicat thread/copy bana ker uske curresponding service() method hoti hai and us method ke constructor me vo 2 perameter request and response jak er store ho jate hai.**
* **Ab service method ye dekhegi ki request get() method se aai hai ya post() method se**
* **Yadi request get() method se aai hai to doGet() method ke consteructor me vo perameter ko pass ker degi. yadi post name diya hai to doPost() method call hogi.**
* **To request object se hum form se data fatch karte hai and response Object se html output ko junrate karte hai. Ex:- request.getParameter() and response.getWriter().**
* **By default vo doget() method hi leta hai.ab doGet() method html output Container ke pass send ker deti hai.**
* **Html output milte hi Container un 2 object ko destroy ker deta hai.**
* **Us html output ko container web server ko de deta hai and web server html output ko http response ke through web page pr show ker deta hai.**

**Cookie& Session**

* **Bina Cookie ke dusra user bhi url se login ho sakta hai but hum cookie se fix ker dete hai ki login ke bad hi main page open ho.**
* **http protocol stateless protocol hai mtlab forgettable protocol mtlab ki vo previous ko bhul jata hai ki ky chal raha tha.**
* **Yadi hum ne web browser se web server pr first request sent ki hai and again ram ne hi web browser se web server pr second request ker di to vo previous ko bhul jayega.ese hi forgetful protocol kahte hai.**
* **Particular user ko recognize (yaad) rakhne ke liye hume kuch techniques provide ki gai hai session tracking ya session management ke liye.**
* **Cookie .**
* **Http Session.**
* **URL rewriting .**
* **Hidden form field.**

**Q :- Cookie kaha create hoti hai?**

**Ans:- Cookie Web server pr create hoti hai.**

**Q:- What is Cookie?**

**Ans:- Cookie is small text file. Jo every request and response ke pare me web browser se web server and web server se web browser pr travel karti rahti hai.**

* **Cookie create to web server pr hoti hai but store web browser me hoti hai.**
* **Jab web browser se request bhejte hai to http request jati hai but web server se http response ke sath sath cookie bhi ati hai. then ager again request jati hai to yadi cookie ke sath aai hai mtlab old user hai otherwise new user hai to response me cookie ko sath pahochata hai web server.**
* **Cookie hai mtlab old user hai and nhi hai mtlab new user hai.**
* **Hum user ko recognize karne ke liye es condition me esa code likhte hai ki yadi cookie hai to old user other wise new user.**

**Q type of Cookie?**

**Ans:- there are 2 type of Cookie:-**

* **Non – persistent ii. Persistent**

**Non – persistent(dradh) :- Ese cookie jo single session ke liye valid hoti hai and web browser ke close hote hi destroy ho jati hai. ase cookie non- persistent cookie kahlati hai.**

**Persistent:- Ese cookie jo multiple session ke liye valid hoti hai. jo browser ke close hone pr bhi destroy nhi hoti hai . ase cookie ko Persistent cookie kahte hai.**

**Q :- Cookie konse package me rakhi hai ?**

**Ans:- import javax.servlet.http.Cookie;**

* **First time user successfully login ho jata hai to Cookie create ho jati hai.**

**Cookie Create Stapes:-**

**Import java.servlet.http.cookie;**

* **Cookie Class ka object banao.**

**// Cookie ck=new Cookie(“Variable\_name” , “Variable\_Value”);**

**// Cookie ck=new Cookie(“UName” , “Ram”);**

* **Cookie ki expiry set karna hoga.**

**// ck.setMaxAge(60\*60\*24\*30);**

**// ck.setMaxAge(Seconds\*60\*24\*30);**

* **Cookie ko response object me add karna hoga . Web Browser se web server pr pahocahne ke liye.**

**// response.addCookie(ck);**

**Q Difference between Session and Cookie ?**

**Ans:- Session Cookie**

* **Session Sever side file hoti hai jo kuch Cookie client side file hoti hai jo web data ko Server pr store ker sakta hai. web browser pr store ker sakte hai.**
* **Jese hi Browser close karte hai vese hi Cookie uske lifetime ke end ho Session end ho jata hai. jane pr destroy hoti hai. jo hum time set karte uske end ho jane pr**
* **Session Cookie pr depend hota hai. Cookie Session pr depend nhi hoti hai.**
* **Session ko start karna padhta hai Cookie ko start karne ki jarurat nhi hoti hai.ye local computer me store hoti hai.**
* **1 Session me hum kitna bhi data store Maximum Browser pr cookie ka size 4KB (4096 Byte) hoti hai.**

**kar sakte hai.But yaha memory limit hai**

**jo ki 128MB hoti hai by default.**

* **Session jiyada squired hota hai. Cookie less squired hoti hai.**
* **Data encrypted form me store hoti hai. ye decrypted form me store hoti hai.**

**Cookie:-**

* **ese sabhi page jinme hume security provide karna hai un sabhi ko java me likhna hoga.**
* **Cookie ka concept java ke pass hai html ke pass nhi hai esliye hume sabhi html pages ko java me mtlab servlet vale page me likhna hoga.**
* **Cookie c[ ]=request.getCookie() sari cookie ko fetch karne ka kam karti hai eska return type array hota hai.**
* **Yadi kuch data nhi hoga to by default null hoga.**
* **Jitney bhi page me squirt provide karna hai unko java servlet page me hi likhna hoga.**
* **Cookie ko destroy karne ke liye uska time update karna padta hai mtlab time 0 karna hota hai.**
* **Cookie Super globle variable ki tarha work karta hai.eska mtlab ye ki Cookie ke variable me data ko kahi bhi fatch karva ker usse use ker sakte hai.**
* **Hum kitni bhi Cookie create ker sakte hai.But variable name different hi hona cahiye.**

**Q :- yadi humne Cookie ki Expiry set nhi ki to ky hoga?**

**Ans:- yadi humne Cookie ki Expiry set nhi ki to es condition me jese hi browser close karege Cookie Distroy ho jayegi. Browser me bhi Cookie Section me last me likha ayega “ When the Browsing session end ”**

**Q More than one Cookie ka use karne se ky benefit hai ?**

**Ans:- More than one Cookie ka use karne se hum more than one textFiled se data get ker sakte hai.**

**Q Yadi Session ya Cookie me se koi ek hi hota to ky ?**

**Ans:- yadi hum Session ka use karte hai to hume vo security provide karta hai but eska data server pr store hota hai to hum normal data ko store karne ke liye Cookie ka use krate hai kyo ki ye local computer me data store karti hai.**

**Q Hume kab Session ka use karna cahiye and kab Cookie ka use karna cahiye?**

**Ans:- Jab hume information ko server pr use karna ho to Session ka use karna cahiye and yadi data ko local computer me store karna ho to Cookie ka use karna cahiye.**

* **Cookie catche memory me store hoti hai.**

**Session**

* **Session javax.servlet.http.session; package me hai.**
* **Session ko create karne ke liye hume HttpSession interface ka use karna padhta hai.**

**Ex:- HttpSession s=request.getSession();**

* **Jis jis page me session ka use karna hai vaha vaha session ka object banana padhta hai.**
* **Session me data get karna hai to Ex:- String s1=(String) session.getAttribute(“un”);**
* **getAttribute() method ka return type Object hai.**
* **Session Distroy karne ke liye.**

**Ex:- HttpSession s1=request.getSession();**

**S1.invalidate();**

* **Yadi hum request.getSession() me kuch pass nhi karte like true ka false to vo true hi manta hai.**

**Q Difference between getSession(true) and getSession(false)?**

**Ans:- request.getSession(true):- ye Check karega ki ky HttpSession ka object exist ker raha hai ya nhi yadi nhi karta to ye object create kerke return ker degi otherwise old ka hi object return ker degi.**

**request.getSession(false):- ye bhi yah check karta hai ki ky pahle se HttpSession ka object exist kar raha hai ya nhi yadi pahle se exist karta hai to use hi return ker degi otherwise null return karti hai.**

**Q jab request.getSession() method session ka object return karti hai to ky yaha bar bar new object create hota hai?**

**Ans:- nhi ye ussi object ko bar bar return karti hai.**

* **Jitne bhi pages hote hai unke beach state o maintain karne ke liye hum Session ka use karte hai.**
* **Session variable internally Cookie ka use karta hai.**

**JSP(java server pages)**

* **Jese AWT ka advance version Swing hota hai vese hi Servlet ka advance version JSP kahlata hai.**

**Q How JSP Container do work ?**

**Ans:- sabse pahle http request web browser se web server pr jati hai abhi ye request html page ke liye na ho ker jsp page ke liye hai.**

* **To vo className.jsp ko load kerega.**
* **Ab uss JSP page ki .java file create karta hai. jab us .java file ko execute karne pr .class file junrate hogi.**
* **Ab .class file ko execute ker html output ko create kerke container ko de dega. Ab ye html output ko container web browser pr show ker deta hai.**
* **Ye .jsp se .java me covert hone ki process ko transsion phase kahte hai.**
* **And .java se .class me covert hone ki process ko processing ya compilation phase kahte hai.**

**Q How jsp page execute ?**

**Ans:- .jsp**

**Not New**

**Yes New**

**Html Output**

**yadi new JSP page hai ya updated page JSP page hai to es case me compilation bhi hoga and execution bhi hoga and fer servlet execute kara ker**

**html output dega.**

* **Yadi Old jsp page hai mtlab uska compilation and execution ho chuka hai to direct servlet ko execute karva ker output de dega.**
* **JSP ne hume functionality provide ki hai ki hum Html ko usme direct likh sakte hai kyo ki servlet page me bahot likhna padhta hai out.println() ker ke.**
* **Jsp element=> directives , comments , scripting , action , templet**

**Scripting => scriptlet , Expression, Declaration**

**Scriptlet tag<% %>**

* **Yadi JSP page me java ka code likhna hai to Scriptlet tag <% %> ke ander hi likhna hoga.**
* **JSP bahot sare Object ko anak er implicitly ready ker deta hai to out un implicitly bane Object me se bana hoaa ek Object hai.**
* **Hum JSP page me pura java ka code likh sakte hai har features work karte hai.**
* **Jitna bhi code hum Scriptlet tag <% %> ke ander likhte hai vo servlet ki service() method me jak er put hota hai.**
* **JSP me yadi hum java ke code ko Scriptlet tag ke ander nhi likhte normal jese hi likhte hai to Html ko out.println() met likhna hoga. But yadi hu Html ko normally likhte hai to fer java ke sare code ko Scriptlet tag <% %> ke ander likhna hoga.**

**Expression tag <%= %>**

* **<%= %> eska by default mtlab hota hai out.println();**
* **Hum Expression <%= %> ke ander semicolon ka use nhi ker sakte error ayegi.**
* **Jitna bhi code hum Expression tag ke ander likhte hai vo auto gunrated servlet ki service() method me jak er put ho jata hai.**
* **Hum out.println() ke ander method ko call karva sakte kyo ki out.println(); void ko print nhi karva sakti jabki method void return karti hai yadi void keyword ka use kiya hai to.**
* **<%= %> tag ke ander method nhi bana sakte hai kyo ki eske ander ka data service() method ke ander jak er put hota hai and java me method ke ander method nhi bana sakte hai.**

**Declaration tag<%! %>**

* **Yadi hume JSP page me method banana hai to declaration tag <%! %> ka use karna hoga kyo ki eske ander ka likha hoaa data service() method me jak kr store nhi hota hai.**

**Q What is use of declaration tag <%! %> ?**

**Ans:- for declare global variable and for declare method.**

**Directives**

**Q What is directives ?**

**Ans: -Directives are elements that relay messages to the JSP Container and affect how it compiles the JSP page.**

**This are the three Types:-**

* **page.**
* **include**
* **taglib.**

**i.page:- page ka mainly use manually package import karna hai**

**Ex:- <% @page import =”java.sql.\*” %>**

* **jsp implicitly request object bana ker ready ker deta hai. esliye doGet() method and PrintWriter() method ko call nhi karna hota hai hume JSP me.**
* **Include:- hum jo comman chije humare project me use hoti hai usse ek JSP me page me bana dete hai and uss JSP page ko us karne ke liye jaha jis page me use karna hai usme link karna hota hai esliye hum include ka use karte hai. inside <body> </body> tag. Ex:- <% @include file=”PageName.jsp”%>.**
* **Redio button se data fetch karvana hai to vo value ke through hoga . written at 26/09/2021**
* **Data humesa name se hi fetch hota hai.**

**Regular Expression**

* **Hum particular pattern me data dalne ke validation ke perpus se regular expression ka use karte hai.**
* **Regular expression 2 forward slesh (/) ke beach me likha jata hai and esse ek variable me store karvate hai.**
* **Yadi hum cahate hai ki password me kam se kam 1 decimal number ho to \d use karte hai. Ex:- var x=/\d/ ;**
* **Yadi hum cahate hai ki first letter hi number ho to ^\d ka use karna hoga.**

**Ex:- var x=/^\d/ ;**

* **Esme ek test() method hoti hai jo check karti hai ki expression shih ai yan hi.**

**Ex:- function demo(){**

**Var x=/^\d/;**

**Var S=document.getElementById(‘t1’).value;**

**//t1 textFiled ki id hai.**

**If(x.test(s)){**

**Document.getElementById(‘y’).innerHTML=”Welcome”;**

**//y esme heading ki id hai.**

**}**

**else{**

**Document.getElementById(‘y’).innerHTML=”Invalid”;**

**}**

**}**

* **Yadi hume End me Digit cahiye:-**

**Var re=/\d$/;**

* **Yadi hume ek hi digit cahiye vo bhi number.**

**Var re=/^\d$/;**

* **Yadi hume Fix 6 hi digits cahiye like 452010**

**Var re=/^\d\d\d\d\d\d $/;**

* **Yadi hume Mobile Number 10 digit hi hona cahiye.**

**Var re=/\d\d\d\d\d\d\d\d\d\d$/;**

**OR**

**Var re=/^\d{10}$/;**

* **Date Formet like 12/12/2021**

**Var re=/^\d{2}\/\d{2}\/\d{4}$/;**

* **Yadi space ke sath use karna hai like 12 12 2021 to \s for space.**

**Var re=/^\d{2}\s\d{2}\s\d{4}$/;**

**Manually bhi de sakte hai:-**

**Var re=/^\d{2} \d{2} \d{4}$/;**

* **Yadi hume minimum 4 se start karna hai and 8 tak ke beach ka ya 8 number tak hi number lena hai to.**

**Var re=/^\d{4,8}$/;**

* **Last me date me year vali place pr ya to 2 digits ya 4 digits allow**

**Var re=/^\d{2}\/\d{2}\/(\d{2}|\d{4})$/;**

* **\w mtlab ya to digit ya character special symbol nhi le sakte.**

**Var re=/^\w{4}$/;**

* **Ya to 2 ya 3 ya 4 digits only.**

**Var re=/^\w{2,4}$/;**

* **Gamil id 3 to 30 word like** [**manish@gamil.com**](mailto:manish@gamil.com)**.**

**Var re=/^\w{3,30}\@\w{5}\.\w{3}$/;**

**Abhi yaha pr gmail ki place pr 5 word ka kuch bhi likh sakte hai . which is wrong**

* **Yadi only vaha gmail hi ana cahiye to**

**Var re=/^\w{3,30}\@[g][m][a][i][l]\.\w{3}$/;**

**Or**

**Var re=/^\w{3,30}\@gamil\.\w{3}$/;**

* **Yadi gamil and yahoo dono ki permission dena hai to**

**Var re=/^\w{3,30}\@(gamil|yahoo)\.\w{3}$/;**

* **Yadi .co.in ki permission dena hai to**

**Var re=/^\w{3,30}\@(gamil|yahoo)\.(w{3}|\w{2}\.\w{2})$/;**

* **Start ki first digit 6 se 9 ke beach ka number hona cahiye baki next 9 digits koi se bhi ho sakti hai Indian mobile number ke purpos se**

**Var re =/^[6-9]\d{9}$/;**

* **Yadi hume only small letters cahiye**

**Var re=/^[a-z]$/;**

**Yadi only capital letter**

**Var re=/^[A-Z]$/;**

**Yadi A se D tak hi cahiye**

**Var re=/^[A-D]$/;**

**Yadi small capital dono cahiye to**

**Var re=/^[a-z][A-Z]$/;**

* **Object Class**
* **Object class Sabhi class ki parent class hoti hai.**
* **Object class java.lang package se ati hai.**
* **Object class ke pass total 12 method hai.**

**Mathod name type**

* **hashCode() public**
* **toString() public**
* **equals() public**
* **finalize() protected()**
* **clone() protected()**
* **getclass() final**
* **wait() final**
* **wait(long ) final**
* **wait(long , int) final**
* **notify() final**
* **notifyAll() final**
* **registersNative() private**
* **Object class ki total 6 method final hai.**
* **Object class ki total 2 method protected hai.**
* **IMP Question final finally finalize me difference .**
* **Hum CMD pr javap java.package\_name.Class\_Name likhege to us class se releted sabhi chije aa jayegi.**
* **12 number ki jo registerNative() method hai vo private method hai esliye javap se dekhne pr CMD pr nhi dekhayega.**
* **Hum final, static, private type ki methods ko override nhi ker sakte hai.**
* **Object Class ki total 5 hi method Override ker sakte hai.**
* **hashCode()**
* **toString()**
* **equals()**
* **finalize()**
* **clone()**
* **Object class ko By default sabhi class extends karti hai.**
* **getClass() method us class ka name deti hai class keyword ke sath. Ex:- class A**
* **Yadi getClass().getName() method likhte hai to serf class ka name deta hai. Ex:- A**
* **Har object ke currusponding HexaDecimal number different hota hai.**
* **Jab jab bhi object ko call karte hai to us object ke currucponding toString() Method call hoti hai.**
* **Object class ki toString() method humesa Output ko hexadecimal number ke form me return karti hai.**

**Q:- hum toString() method ko override kyo karte hai?**

* **Ans:- meaningful output return karvane ke purpus se hum toString() method ko override karte hai. Kyo ki toString () method output ko by default ClassName@HDN ke form me print karvati hai. Jo ki kam ka nhi hota hai.**
* **Ye jo toString() method HDN ko print karvati hai ese hi HashCode kahte hai.**
* **JVM har ek Object ke corresponding ek number assign karta hai us uniqe number ko hashcode kahte hai .**
* **Object class ki toString() method hashcode ko HDN ke form me return karti hai.**
* **Object class ki hashcode() method hashcode ko decimal ke form me print karti hai.**

**Q :- Object class ki toString() method ki definition ky hai?**

**Ans:- getClass.getName+”@”+Integer.toHexString(hashCode());**

* **== operator humesa reference comparesion karta hai.**
* **String class ki equals() method humesa content comparesion karti hai.**
* **Object class ki equals() method humesa reference comparesion karti hai.**
* **StringBuffer class ke pass koi equals() method nhi hoti hai esliye Object class ki equlas() method call hogi kyo ki har class Object class ko bydefault extends karti hai.**
* **Boolean class ke constructor me true ke alava kuch bhi dete hai “ ” me to vo false hi retrun karega.**
* **True ko hum kese bhi likh sakte hai Boolean ke constructor me.**
* **Object leval type casting karne ke liye parent child reletion hona compulsory hai.**
* **Object class ki equals() method ko contanet comapresion karvane ke liye override karna padta hai.**
* **String class ne equals() method ko override kiya hoaa hai . kyo ki content comaresion tabhi possible hai jab equals() method ko override kiya ho.**
* **Object class ki equals() method class cast exception ane pr false return karti hai.**
* **Class ke sabhi object ki default value null hoti hai.**
* **Null ke corresponding koi operation perform nhi ker sakte hai.NullPointerException deta hai.**
* **Object class ki equals() method null ke case me bhi false hi return karti hai.es code ke karan public Boolean equals(Object o){**

**return (this==o);**

**}**

* **String immutable me usse memory ke data me update nhi ker sakte hai new memory banak er story karta hai.**

**instanceOf :- ye class ke object ko check karta hai ki ky vo us class ka hai ya nhi.**

* **InstanceOf keyword humesa parent child reletion me hi work karta hai.**
* **Null ke har case me false hi return karega instanceOf keyword.**
* **Ager child ka object hai to vo parent ke liye bhi true dega .But yadi parent ka object hai to vo child ke liye false dega.**

**Garbage Collector (GC)**

**Q what is garbage Object?**

**Ans:- unreferenced and unreachable Object ko garbage object kahte hai.**

**Q what is garbage collector ?**

**Ans:- unreferenced and unused object ko jo collect ker ke rakhta hai use hi garbage collector kahte hai.**

* **Ye jo garabage collector unused and unreferenced variable ko remove ker deta hai ese hi automatic memory deallocation kahte hai**

**Q garbage Object ko garbage collector ke pass pahochane ke kitne tarike hai?**

**Ans:- totle 5 tarike hai :-**

* **Reassign reference variable.**
* **Nullyfine reference variable.**
* **Local object // object create inside the method.**
* **Anonymous object**
* **iland of isolation.**
* **Nullyfine me jo hum reference me null assign ker dete hai to jo uske pass ka object hota hai vo GC ke pass cahla jata hai.**
* **Reassign reference variable me hum ek reference ko dusre me assign ker dete hai.**
* **Local object ko hum method ke ander bana ker ready karte hai.**
* **Anonymous object esa object hota hai jiska koi name nhi hota hai.**
* **Ek method se dusre method ko call karne ki process ko method chaining kahte hai.**

**Q ky java method chaining ko support karta hai ?**

**Ans:- ji ha bilkul karta hai.**

**Q ky ek memory ko more than one reference variable point ker sakta hai ?**

**Ans:- ji ha bilkul ker sakta hai.**

**Q ky ek reference more than one memory ko point ker sakta hai ?**

**Ans:- ji bilkul nhi ker sakta hai.**

**Q :-En 5 tariko se Object GC ke pass to pahoch jata hai. To ky GC unhe direct destroy ker deta hai?**

**Ans:- nhi jab JVC GC ko call karta hai ya run karta hai to GC un unreferenced and unreachable objects ko destroy karta hai.**

* **Likin JVM GC ko kab call karega eski koi giyaranti nhi hai.**
* **Ya to wait karo JVM GC ko kab call karega ya fer request ker sakte hai. Ye request turant bhi except ho sakte hai ya bad me bhi vo JVM ke upper hai.**

**Q JVM se request karne ke kitne tarike hai?**

**Ans:- we can do that by 2 ways :-**

* **System.gc() ii. Runtime.getRuntime().gc()**
* **JVM 90% cases me request except ker leta hai.**

**Finalization/finalize() method**

**Q Diffrence Between final , finally finalize()**

* **JVM jab Object Distroy karta hai to vo Heap ka hi karta hai method area ka nhi.**
* **Object ke destroy hone ke just pahle distructor call hota hai C++ me.**
* **Jab kabhi bhi GC object ko destroy karta hai to Object ke destroy hone ke just pahle internally un object ke corresponding 1 method finalize() call hoti hai clean up ke purpos se . ese hi finalization kahte hai.**
* **finalize() method Object class ke pass hai.**
* **Finally() method ka return type protected hai. Like:- protected void finalize();**
* **Object class ki finalize() method ki body empty hai.**
* **Jo bhi object destroy ho raha hai us object ke corresponding jo class hai usme yadi finalize() method ko override kiya hai to us class ke object ke destroy hone pr Overridden method hi call hoti hai . varna Object class ke liye normal vali empty body vali.**
* **Yadi JVM ne GC ko call kiya and finalize() method me koi exception ati hai to usse JVM automatically handle ker leta hai. But yadi hum manually karte hai to fer vo Exception ati hai.**

**Q Ky hum finalize method ko manually ker sakte hai ?**

**Ans :- ha ker sakte hai but fer vo ek normal method ki tarha hi sequence me call hogi fer usse JVM se koi mtlab nhi .Yadi hum call karege to exception ati hai but yadi JVM ne call kiya to vo exception ko handle ker lega.**

* **Yadi kise reference me null assign ker diya to fer hum uske reference se yadi method ko call karege to run time pr NullPointerException ati hai.**
* **Finalize() method ke call hone ke case me jitni bar GC ko call karege utne number of cases banege.**
* **JVM GC ko call karta hai and GC finalize() method ko call karta hai.  
  hume jaruri nhi ki har bar GC se request karna pade. Bina request ke bhi vo Object ko destroy to ker dega but fer hume thoda wait karna hoga kyo ki vo fer JVM ke mood pr depend hai ki vo GC ko kab call karega.**
* **Q kise bhi class ki sari method ko count karne ka program banao.**
* **JDBC me jo Class.forName() hai usme Class bhi ek predefine class hai.**
* **Java ke pass ek predefine Method name ki class bhi hai jo ki method count ke program me help karti hai.**

**Q ky class ki private method ko CMD pr display karva sakte hai ?**

**Ans:- ji ha hum bilkul karva sakte hai. reflection ki help se**

**Q ky hum private method ko bahar access ker sakte hai ky ?**

**Ans:- ha hum bilkul ker sakte hai.**

**Q Diffrence between Error and Exception?**

**Ans :- Error Exception**

* **Classified as Unchecked. Classified as checked and unchecked both.**
* **It belongs to java.lang.error It belongs to java.lang.Exception package.**

**Package.**

* **It is not recoverable. It is recoverable .**
* **It is mainly coused by application It is mostly coused by environment in which**

**itself. application is running.**

* **Error is not Known to compiler. Exception is known to compiler.**
* **OutOfMemory Error, IOError is NullPointerException , ArithmeticExcetion is**

**example of Error . Example of Exception.**

**Singleton Class**

**Q What is Singleton Class in java ?**

**Ans:- Limited Object create karne dene ki permission se hum Singleton class ka use karte hai. Esme hum us class ka serf ek hi object create ker sakte hai.**

* **Singleton Object banana ke liye Constructor ko private declare karna hoga .**
* **Us class ke ander ek static method hona compulsory hai jo us class ka object retrun karege.**

**Q what is Factory method ?**

**Ans:- vo static method jo khud ki class ke Object ko return karti hai usse Factory method kahte hai.**

**Q ky hum serf default Constructor ko hi private bana sakte hai Esme?**

**Ans:- ha serf default ko hi bana sakte hai kyo JVM by default default Constructor ko hi call karta hai.**

**Q System.gc() and Runtime.getRuntime().gc() me se konsa best hai and kyo?**

**Ans:- Runtime.getRuntime().gc() best hai kyo ki vo kuch es tarha se Code kiya gaya hai.**

**Ex:- Class System{**

**Public static void gc(){**

**Runtime.getRuntime().gc();**

**}**

**}**

**Kuch es traha se se code kiya haii to yadi hum System.gc() karte hai to System class bhi load hogi eske karna performance decrease ho jayegi.**

**Cloning :- Java me object ko create karne ke bahot sare tarike hote hai unme se hi ek tarika hai Object class ki clone() method.esme same data ke sath seprate object create hota hai.**

* **clone() method object class ke pass hai .**
* **clone() method protected hai.**
* **Hume jis bhi class ka clone object bana ker ready karna hai vo class cloneable interface ko implements karna cahiye varna CloneNotSupportException ayegi.**
* **clone() method ka return type Object hota hai.**
* **Protected data serf child class me hi access ho sakta hai.**
* **Ye clone() method Object to create karti hai to Object to dusra create hota hai. But data same hi hota hai.**

**Q How many type cloning available in java?**

**Ans:- Cloning 2 type ki hoti hai.**

* **Shallow Cloning. ii. Deep Cloning.**
* **Shallow Cloning me 1 hi reference variable ko Original and Cloned Object point karte hai yadi ek me koi change kiya to dono me ho jata hai .**
* **Deep Cloning me seprate object create hota hai dono kyo ki dono Original and Cloned Object alaga alag reference variable ko point karte hai. User define Cloning ko hi deep cloning kahte hai .esme user ko hi logic lagana hota hai .**
* **Object class by default shallow Cloning ko support karta hai.**
* **BigInteger**
* **Yadi Hum normal factorial ke program me int lete hai to 13 tak shi dega uske bad galat dega. Ese hi long ke case me 20 tak shi dega uske bad galat dega. Esse bade number ka yadi hum factorial nikalna cahate hai to hume BigInteger ka use karna hoga.int:- -2147483648 to 2147483647 ,long:- -9223372036854775808 to 9223372036854775807.**
* **BigInteger ek class hai jo ki kitne bhi bade number ko store karva sakta hai.**
* **Yadi hume Class ko data type me store karvana hai to wrapper class ka use karege.**

**Like String s=”10”; int x=s;**

* **Java me jitni bhi class hai un sabhi ke pass ek method hai jiska name hai valueOf()**
* **valueOf() method ki help se bhi hum String me int value store ker sakte hai.**
* **String ke case me Arithmetic operators me se serf + ko use ker sakte hai baki ke liye bed operand type error dega.**
* **Int kabhi bhi BigInteger me ja ker store nhi ho sakta hai. Like BigInteger c=10;**
* **Yadi hum store karvana hai to valueOf() method ka use karege.**

**Like BigInteger b=BigInteger.valueOf(10);**

* **BigInteger kabhi bhi koi bhi operator ke sath work nhi ker sakta hai.**
* **yadi hume kuch operation perform karvana hai to hume eski methods ka use karna hoga.**

**Ex:- add(), subtract(), multiply() ,divide(), mod().**

**Ex:- x.multiply(y);**

* **int and BigInteger ke beach operation perform nhi ho sakta hai.**
* **BigInteger ne hume kuch constant provide kiye hai. ONE to TEN tak ese use ker sakte hai. Capital hi hona cahiye.**
* **BigInteger ki valueOf() method me hum serf long tak ki hi value store sakte hai.**
* **Yadi hume long se jiyda badi value store karvana hai to hume BigInteger ka Object bana ker value ko uske constructor me “ ” ke ander dena hoga.ye kitna bhi bada number le sakta hai.**
* **InnerClass**
* **A class which is declare inside the class is called inner class.**
* **Inner class ka use sabhi type ke project banana me bahot hota hai.**
* **Inner class kai 2 type hote hai i. Non Static ii. Static.**
* **Non static class ke 3 type hote hai. i.instance innerclass.**

**Ii:-local inner class.**

**Iii:-anonymous inner class.**

* **Anonymous inner class ke 3 type hote hai:- i:-anonymous inner class that extends by a class.**

**Ii:- anonymous inner class that implements by a interface.**

**Iii:- anonymous class that define inside the argument.**

* **Humare program me jitni class hoti hai utni hi number of .class file banti hai.**
* **Instance inner class ke ander hum kabhi bhi static method nhi bana sakte hai.error dega illegal static declaration inner class.**
* **Outer class me static method bana sakte hai.**
* **Object create kar ke hum kise bhi type ke data ko acess ker sakte hai.**
* **Instance variable mtlab Object variable vo object se hi access ho sakta hai.**
* **Inner class ka object outer class ke object pr depend hota hai.**
* **Hum inner class ka object 2 tarha se bana sakte hai. 1:- A a=new A();**

**A.B b=a.new B();**

**2:- A a=new A();**

**B b=a.new B();**

* **Yadi same class me hi access karna hai to 1st or 2nd dono tarha se work karega. But yadi Different class me access kiya to 1st me error dega 2nd hi work karega.**
* **Non static method static and non static dono type data ko direct access ker sakti hai. But non static only static data ko hi karti hai.**
* **Outer class me instance inner class ko direct access ker sakte hai.**
* **this currant Object ke currosponding instance content ko point karta hai.**
* **Outer class ke private data ko bahar access nhi ker sakte but usi class ke member se access kerva ker usse bahar access ker do uska modifier change ker ke.**
* **Outer class ka private data inner class ka member access ker sakta hai.**
* **Hum Outer class ko kabhi bhi private declear nhi ker sakte hai.**
* **Hum Outer class ke sath serf 5 keyword use ker sakte hai. i.default, ii. public, iii. final, iv. abstract , v. strictfp .**
* **Hum inner class ke sath outer class ke 5 keyword ke sath sath 3 or use ker sakte hai. i. private ii. protected iii. static.**
* **Hum kuch es tarha se Object bana ker bhi call ker sakte hai. New A().show()**
* **Hum bina reference ka use kare bhi inner class ko call ker sakte hai .**

**Ex:- new A().new B().show();**

* **Method ke ander instance block ho sakta hai static nhi ho sakti.**
* **Inner class ka data kabhi bhi static nhi ho sakti hai.Only Variable static final ho sakta hai.**
* **Inheritance ke case me jo jo class extends hoti un sabhi ka constructor , instance block, and static block call ho jata hai.**
* **Abstract class ka object nhi bana sakte hai.**
* **Serf inheritance ke case me inner class and outer class ka name same rah sakta hai . Ese normal me nhi ho sakta hai.**
* **Abstract data abstract class ya interface se hi call ho sakta hai.**
* **Hum inner class ko bhi abstract bana sakte hai.**
* **C++ me abstract method ko hi pure virtual function ka use karna hai.**
* **Hum class ke ander class to banak kr ready ker sakte hai sath hi method ke ander bhi class bana sakte hai.**
* **Humne jis class ko jis method ke ander banaya hai vo class us hi method ke ander hi access ho sakti hai.**
* **Yadi method ke ander class bani hai to class name ke pahle number aa jayega jitney method me bani hogi utna 1 me to 1 , 2 to 2 $ symbol ke bad.**
* **Class ko cahe access karo ya na karo .class file to banegi hi.**
* **Inner class ko hum kisi ke bhi ander bana sakte hai.**
* **Inner class ke ander ki method ke ander ka variable bhale hi version 1.8 se hume final declare nhi karna hota but vo internally final hota hai.kyo ki inner class ka local variable partially final hota hai.**
* **Jab tak hum use update nhikarege vo effectively final rahega update karne pr nhi rahega. Esse hum method ke bhara se update nhi ker sakte hai method ke ander se hi ker sakte hai.**
* **Difference between A a=new A() and A a=new A(){};**

**A a=new A(); A a=new A(){};**

* **Yaha pr class A ka object ban raha hai. Yaha pr ek class bani hai uska name**

**hai anonymous class.**

* **Class A ke object ko class A ka refrance anonymous class ne extends kiya**

**Variable a hold ker raha hai. hai A ko.**

**new A(){}; ka matlab hai yaha anonymous class ka object ban raha hai.**

**Anonymous inner class ke object ko super class A ka reference variable a hold ker raha hai.**

* **Jitni bhi anonymous class banegi utni hi number of class ayegi $ ke baad like $1,$2.**
* **Yadi hum kise ek object ke corresponding value change karna cahate hai ya override karna cahate hai to hume anonymous inner class ka use karna cahiye.**
* **Yadi frame me setVisible(true) nhi kiya to cusrsore 1 second ke liye blink hoga and terminate ho jayega.**
* **Windows listener ke pass 7 method hoti hai jinhe override karna compulsory hota hai.**
* **Yadi hume frame ko close karna hai to windows listener ki sabhi method ko override karna hoga bhale hi hume 1 hi ki jarurat ho but hume es ana karna pade eske liye java ne hum eek feature diya hai jiska name hai Adapter class eski help se hume jitni method ki jarurat hai utni hi method ko override karna hota hai.**

**Q how to create Adapter class ?**

**Ans:- i. Make one class with any name.**

* **Us class se us listener ko implements karo jiske liye apko Adapter class banana hai.**
* **Us listener ki sari method ko us class me override ker do.**
* **Hum return ke neache koi statement nhi likh sakte hai.**

**LambdaExpression:-**

* **Anonymous inner class ka extended version lambda expression kahlata hai.**
* **serf functional interface ke sath hi hum lambda expression ka use kar sakte hai.**
* **Functional interface and lambda expression java version 1.8 ke feature hai.**
* **Java programming ka kahna hai ki jab ek hi abstract method hai to uska name mt likho hum samjh jayege ki vhi method hai.**
* **Java ka kehna hai ki jab anonymous class ka object ban raha hai and use interface ka reference variable hold ker raha hai to new Interface() ki jarurat nhi bas uski jagha ye ()-> laga do hum samjh jayege.**
* **Vi and V point ek sath hi apply hona cahiye.varna error dega.**
* **Yadi hum anonymous class ki body nhi bhi dege to bhi work karega.**
* **Yadi hume perameter ka type nhi bhi diya to automatic considerd ker lega.**
* **Perameter me ya to dono ka datatype do ya fer 1 ka bhi mt do.**
* **Yadi ek hi perameter hai ya nhi hai to () nhi bhi lagaoge to vo samjh jayega.**
* **Yadi more than 1 perameter pass kiya hai to () lagana jaruri hai.**
* **Yadi hume return keyword ka use nhi kiya to vo bydefault return keyword leta hai lambda expression me esliye hum nhi laga sakte hai.varna error dega.**
* **Yadi hume anonymous class ki body di hai to fer hum return keyword ka use ker sakte hai.**
* **Lembda expression me hum jis type ka perameter dete hai vo hi method ka type bhi hona cahiye return return ka use karte hai to.**
* **Interface ke ander interface bana sakte hai.**
* **Class ke ander interface bana sakte hai.**

* **Advance Swing**
* **Yadi hum click listener laga dete hai to Button ke click pr Operation perform ho jata hai AWT me. But swing me nhi hota hai. Yadi hum karna cahate hai to hume JPanel class ko extends karna padhta hai.**
* **Humne abhi tak FlowLayout,BorderLayout,gridLayout,setLayout(null),CardLayout padha hai.**
* **FlowLayout AWT ka default Layout hota hai jo ki jitni size hogi utna hi bada component dega.**
* **BorderLayout swing ka default Layout hota hai. Jo pure Frame pr fel jata hai.esliye bas last vala component hi dekhta hai.**
* **gridLayout vertically component ke hisab se divide ho ker puri frame pr aa jata hai.**
* **setLayout(null) jab hume Apne hisab se sab set karna ho puri Frame pr tab use karte hai.** **Ye Blank frame dekhayega.**
* **CardLayout ye bahot important Layout hai ye 1 ke neache 1 componant ko arrange karta hai.**
* **Container class ka object banana padega . Like :- Container cn=getContentPane();**
* **And fer eske referance se actionPerformed() method me call karte hai.**

**Like:- cn.setBackground(Color.red);**

**cn container ka reference hai. Baki ki sabhi chije same rahegi**

* **Hum kabhi bhi frame ke upper frame add nhi ker sakte hai.illigalArgument Exception dega.**
* **Yadi Hum frame ke upper frame add kerna cahate hai to JPanel class extends karna hoga tab sakte hai.**
* **Panel ko Panel me add ker sakte hai.**
* **Frame me Panel ko add ker sakte hai. But Panel me Frame ko add nhi ker sakte hai.**
* **CardLayout bahot important Layout hai . ye Component ko 1 ke neache 1 arrange karta hai.**
* **Eske pass total 5 method hoti hai:- first(), last(), next(), previous(), show().**
* **2 layout ko hum ek sath use kar sakte hai but jo last vala Layout hoga vhi apply hoga Frame pr.**
* **show() method me pahle perameter me Container class ka reference and second me jo String dalte hai apan components ko add karte time vo String dalte hai.**

**Like :- card.show(cn,”manu”); .**

**5.Advance Polymorephism**

* **Inheritance ke case me jo class jis jis class ko extends karti hai un un class ki property access ho jati hai automatic like static block, instance block ,constructor.**

**Only method ko hi manually call karna padta hai object se.**

* **Method overriding me Jiski memory rahegi uski method call hogi.**
* **Super class ka reference variable sub call ke object ko hold karta hai.**
* **Java by default run time polymorephism ko support karta hai.jabki C++ bydefault Compile time polymorphism ko support karta hai.**
* **Yadi hum object ko print karvate hai to vo Class\_NameHexaDecimalNumber ke form me print karvata hai.**
* **Har object ke currucponding hexadecimal number different hota hai.**
* **Jab kabhi bhi hum kisi bhi object ko print karte hai to uske currusponding toString method call hoti hai.**
* **Blank final variable me yadi humne instance block se value assign ker di hai to fer constructor se nhi de sakte varna error dega.**
* **Yadi hum blank final variable me constructor se value assign karte hai to hume sabhi constructor se value assign karna hoga.**
* **Yadi hum method overriding ker rahe hai and parent ka reference le rahe hai to parent class me bhi vo method present hona cahiye .kyo ki yadi reference hai to pahle reference ke currusponding method ki prasentness check karta hai.**
* **Runtime working object ke currusponding hoti hai and compile time binding reference ke currusponding hoti hai.**
* **Yadi hum cahate hai ki compile time binding ho to method ko static bana do.**
* **Method overriding ka benefit ye hai ki yadi hume parent class ki method ki definition pasand nhi aa rahi hai to use sub class me override ker ke change ker sakte hai.**

**Q1 What is method Overloading?**

**Ans:- same class with different number of parameter or different order of parameter or different type of parameter is known as method overloading.**

* **Int number me by default int vala cahelga cahe fer long ho fer bhi .**

**Ex:- System.out.println() is overloaded as we have 9 or 10 println() method each accepting a different type of parameter.**

**Q2 What are the rules of method Overloading?**

**Ans:- one of the important rule of method overloading is that method signature should be different that is either the number of argument or the type of argument.**

* **Simple changing the return type of method will give result in overloading .**

**Q3:- can we Overload static method in java?**

**Ans:- yes we can overload static method but we can not override static method.**

**Q4:- can we Overload main method in java?**

**Ans:- yes we can overload main method In java but the program does not execute. When we run our program so we have to call the overloaded main method from the actual main method. That means main method act as an entry point for the java interpreter to start the execution of the application where as a loaded main need to called main.**

**Q5:- can we declare one overloaded method as static and another one as non static in java?**

**Ans:- yes overloaded method can be either one static and one non static.**

**Q6:- How do compiler differentiate overloaded method from duplicate method ?**

**Ans:- Compiler uses method signature(parameter) to check where the method is overloaded or duplicated .**

**Duplicate method will have same method signature that is same , name\_same , same number of argument and same type of argument . overloaded method will also have same name but different number of argument or else type of argument.**

* **Child se parent ki or promote karta hai and data type me automatically int kea lava kisi bhi data type me apne just neache vala data type lega.**

**Q7:-Is it possible to have two method in a class with same method signature but different return type ?**

**Ans:- No , Compiler will give duplicate method error. Compiler checks only method signature for duplicate not the return type. If two method have same signature , straight away it give compile time error.**

**Q8:- In “MyClass” there is a method called “myMethod()” with four different overloaded form. All four different forms have different visibility (private , public , protected , default) ?**

**Ans:- yes compiler checks only method signature for overloading of method not visibility of method.**

**Q9:-can we overloaded method be synchronized ?**

**Ans:- yes we can overloaded method be synchronized.**

**Q10:-Can we declare Overloaded method as final ?**

**Ans:- yes, we can declare overloaded method as final.**

**Q11:-In the below class , is Constructor overloaded or is method overloaded ?**

**Ans:- Ex:- public class A{**

**A(){**

**--------**

**}**

**Void A(){**

**---------**

**}**

**}**

* **None of them . It is neither constructor overloaded nor method overloaded. First one is constructor and second is method.**

**Q12:- Overloading is best example of dynamic binding . True or False ?**

**Ans:- false , overloading is the best example for static binding.**

**Q13:- Can overloaded method be overriding ?**

**Ans:- yes , we can overriding a method which is overloaded in super class.**

**Q14 What is method signature ? What are the things it consist of ?**

**Ans:- Method signature is used by compiler to differentiate the methods.**

**signature consist of three things:-**

* **Method name.**
* **Number of argument.**
* **Type of arguments.**

**Database connectivity (JDBC)**

* **Table me data row and column ke form me store hota hai.**
* **Bahot sari tables ke collection ko database kahte hai.**
* **Sabhi query ke last me ; lagana jaruri hai.**
* **show databases; :- ye query batayegi ki pahle se humare pass kitne databases bane rakhe hai.**
* **show tables; :- ye query batayegi ki pahle se humare pass kitne table bane rakhe hai.**
* **use database\_Name; :-ye query database ko use karne ke liye hai.**
* **Create database Database\_Name; :- ye query database create karne ke liye hoti hai.**
* **Create table table\_Name(Column\_Name DataType , Column\_Name DataType); :- for Create table.**
* **Desc table\_Name; :- ye table structure dekhne ke liye hoti hai.**
* **Select \* from table\_Name; :- sari table ka data aa ker disply ho jayega.**
* **Insert into table\_Name(UNAME , UPASS)value (‘a’ , ‘1’); :- for insert data into table.**
* **Hume data base se java program ke through connect karne ke liye 6 steps karna hota hai.**
* **Import package**

**//import java.sql.\*;**

* **Load and register the driver**

**//Class.forName(“com.mysql.cj.jdbc.Driver”);**

* **Opening database connection to mysql server**

**/\*String db\_url=(“jdbc:mysql://localhost:3306:/db\_Name?useSSL=false”);**

**String db\_Name=”Manish786@”;**

**String db\_Pass=”Manish786@”;**

**Connection con=DriverManager.getConnection(db\_url, db\_Name, db\_Pass); \*/**

* **Getting statement Object to execute query.**

**// Statement st=con.createStatment();**

* **Execute Query**

**/\*String q=insert into table\_Name(UNAME,UPASS)value(‘swt’,’258’);**

**St.executeUpdate(q);**

**\*/**

**vi. close Connection**

**con.close();**