

UNIT-IV

Java Beans : Application Builder tools, The Bean Developer Kit (BDK), JAR files, Introspection, developing a simple bean, using Bound properties, The Java Beans API, Session Beans, Entity Beans, etc.

Introduction to Java Servlet : Servlet Basics, Servlet API basic, lifecycle of a Servlet, Running Servlet.

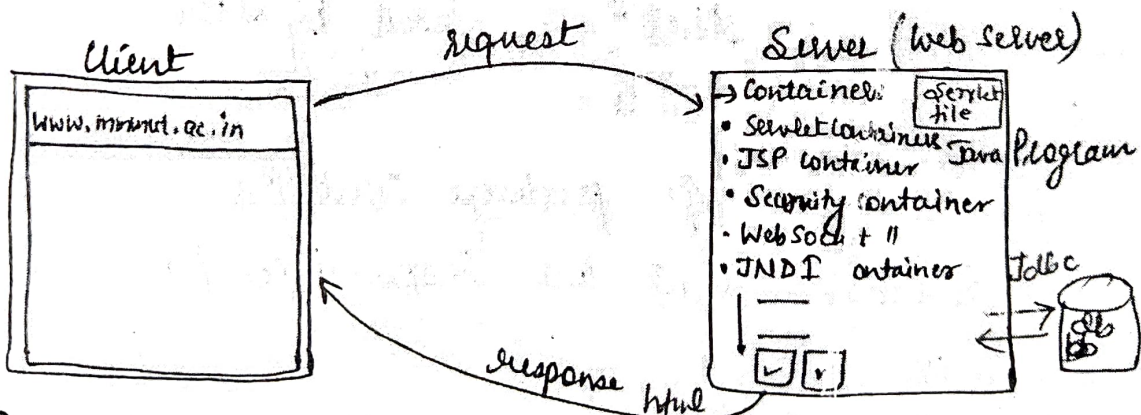
JAVA Servlet

(server side java programs)

Servlet :- Server-side technology which is used to

- handle the client request
- process the request
- generate dynamic response.

Client → browser (chrome, Mozilla Firefox, Opera, Internet Explorer)



- ① Web Server
- Apache Tomcat
 - Glassfish
 - Jetty

- ② Application server
- JBoss
 - Weblogic
 - IBM Websphere

→ Server side technologies

- JSP
- Spring, springboot
- Struts, JSF
- php
- python

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Q) Difference b/w CGI (Common Gateway Interface) and Hypertext Preprocessor (PHP)

Q) Difference b/w Servlet & CGI

Servlet API (www.javatpoint.com/servlet-api)

In Java, to create web applications we use Servlets. To create Java Servlets, we need to use Servlet API which contains all the necessary interfaces and classes.

Servlet API has 2 packages namely,

① javax.servlet

② javax.servlet.http → geeksforgeeks.org
(study from this website)

→ The javax.servlet package contains many interfaces & classes that are used by the Servlet or web container.

→ The javax.servlet.http package contains interfaces & classes that are responsible for http requests only.

Life cycle of a Servlet

- ① Servlet class is loaded.
- ② Servlet instance is created.
- ③ init method is invoked.
- ④ service method is invoked.
- ⑤ destroy method is invoked.
↳ public void destroy()

→ init

public void init(ServletConfig config) throws ServletException

→ Service method

public void service(ServletRequest request, ServletResponse response)
throws ServletException, IOException

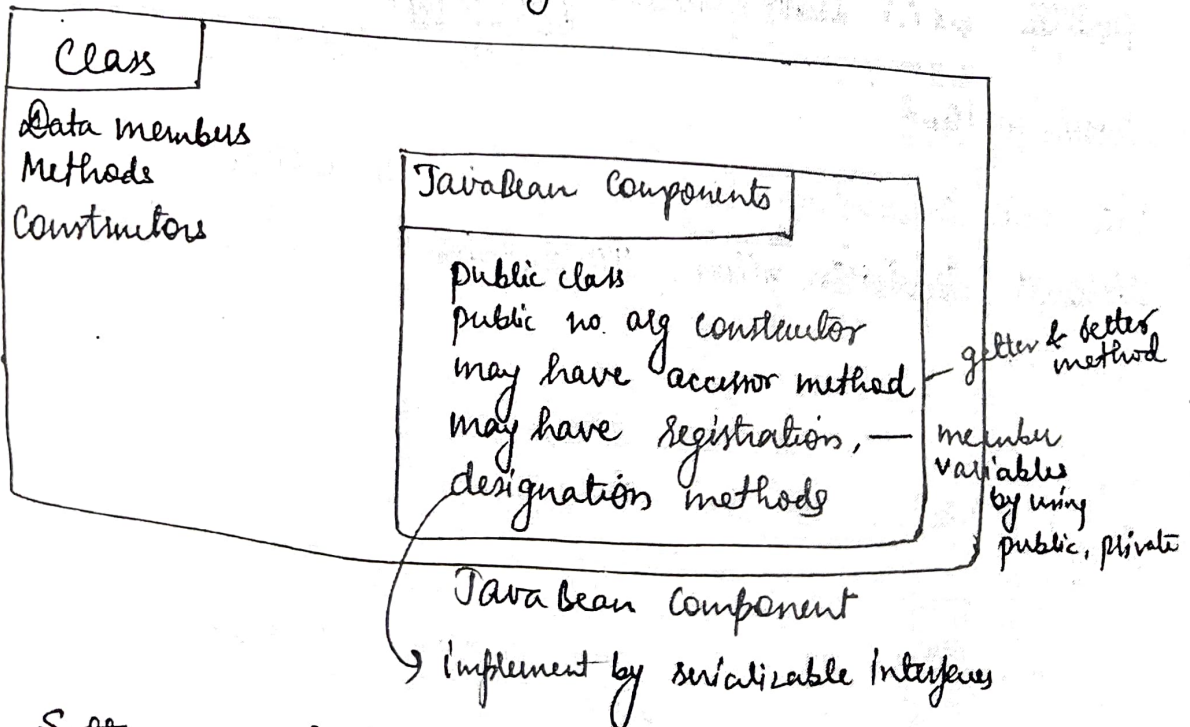
www.Sec-Go.in

Java Beans

- Java Beans are developed with the motto of "Write Once and Run anywhere".
- The Java Bean is a reusable and platform independent component.
- Java beans are classes

What is a Bean?

- Many no. of objects that can be encapsulated in a single objects.
- Bean components can be manipulated visually in a Builder tool. Ex. Swing, AWT.



Setter
↓
Mutators

Getter
↓
Accessor

What are the benefits of a jar file? Write all the steps to create a jar file?

(a) Jar file : → Java Archive file

- i) Security
- ii) Compression
- iii) Portability
- iv) Reduced download time

```
class A
{
    p.s.um (string [Jar])
    {
        ...
    }
    (A.class)
}
```

Steps to create jar files →

c:\> jar -cvmf A.jar A.class

Annotations:
 - **create** (points to -c)
 - **Verbose output** (points to -v)
 - **specifies archive file** (points to A.jar)
 - **Include manifest information** (points to -mf)

OR
jar -cf

What
Explain are Threads? Also Explain all the way of creating threads in java along their states? Explain with program.

Threads : → Are light weight sub process which is the smallest unit of processing

Extending Thread class →

```
class t1 extends Thread
{
    public void run ()
    {
        s.o.p ("ABC");
    }
}
```

```
public static void main (String
    [Jar])
{
    t1 obj1 = new t1 ();
    obj1.start(); // Starts the
    Thread
}
```

Implementing Runnable Interface

class t_1 implements Runnable

{

public void run()

{

S.O.P("xyz");

}

p.s.v.m (String[] args)

{

t_1 obj1 = new t_1 ();

Thread t = new Thread();

t .start();

}

}

obj1