container

.java

request

response (writing)

reading

fis
FileInputStream

developer → .java WODA → JEE(SUNMS)
interfaces like
ServletRequest(I)
ServletResponse(I)

tomcat   weblogic   wildfly

(servlet-api.jar)

MultiThreading

container
.java
Thread-1
req-1   res-1
ThreadPool | | | | |

Thread-2
req-2   res-2

ServletRequest   ServletResponse
HttpServletRequest   HttpServletResponse
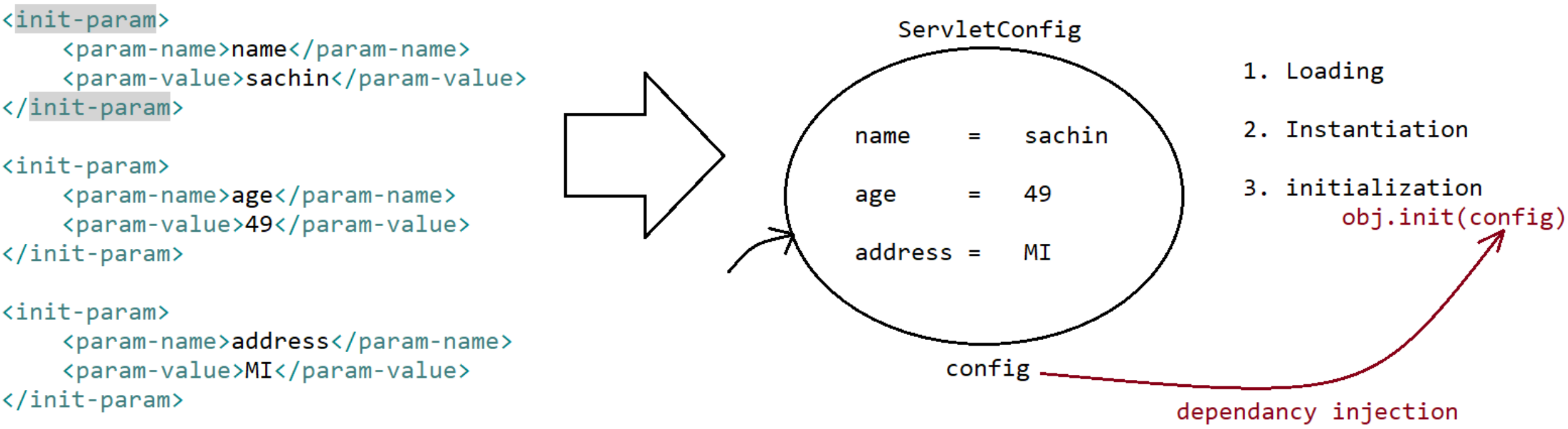
Thread-3
req-3   res-3

Servlet Request object address is :: 1604484785
Servlet Response object address is :: 1837946685
Current Servlet object address is :: 2117018993
Current Reques:-Threrd object address is :: 2111171375

Servlet Request object address is :: 516152835
Servlet Response object address is :: 268710827
Current Servlet object address is :: 2117018993
Current Request-Thread object address is :: 339457395

Servlet Request object address is :: 614214443
Servlet Response object address is :: 710656456
Current Servlet object address is :: 2117018993
Current Request-Thread object address is :: 778322011

```
<init-param>
    <param-name>name</param-name>
    <param-value>sachin</param-value>
</init-param>

<init-param>
    <param-name>age</param-name>
    <param-value>49</param-value>
</init-param>

<init-param>
    <param-name>address</param-name>
    <param-value>MI</param-value>
</init-param>
```

ServletConfig

name   = sachin

age   = 49

address = MI

config

dependancy injection

1. Loading

2. Instantiation

3. initialization
   obj.init(config)

```
Different ways of Creating a Servlet
================================
1.Servlet(I)
2.GenericServlet(AC)
3.HttpServlet(AC)

Dynamic response will be generated by Servlet.
Mapping a resource to particular urlpattern for the webcontainer can be configured
in 2 ways
        a. XML(legacy approach)
        b. Annotation(Available from  Servlet3.0V)

Note:
User input will be sent in the form of QueryString from the browser to protocol,
and container will store in request object.
ServletRequest(I)
              | extends
HttpServletRequest(I)

HttpRequest Structure
        a.RequestLine(request type,resourcename,protocolversion)
        b.RequestHeader(information about the client)
        c.RequestBody(actual data(QueryString))

Methods
=======
public abstract Enumeration<String> getHeaderNames();
public abstract String getHeader(String keyName);

            refer: RequestHeaderApp

Working with ServletResponse/HttpServletResponse
==========================================
1.  public abstract PrintWriter getWriter() throws IOException;
                    To send character type of Response

2. To send binary information like videos,audio,images etc response will be through
"Stream".
      public abstract ServletOutputStream getOutputStream() throws IOException;

                    refer: ResponseInfoApp

Note:
      PrintWriter                        => only character type of data.
      ServletOutputStream => we can send both character type and binary type of
data.

Q> In single application can we use both PrintWriter object and ServletOutputStream
to send the response?
Ans. Not possible, it would result in "java.lang.IllegalStateException: getWriter()
has already been called for this response".

MultiThreading technology used in servlet
=================================
                    refer: diagram....


ServletContext(I) vs ServletConfig(I)
============================
```

```
ServletConfig(I)
=============
   1. Loading     ======> static block
   2. Instantiation ===>  Object obj = Class.forName(String
urlPattern).newInstance();
                                     Object will be created for the loaded class
using Zero parameterized constructor.
   3. Initialization ====> For the created Servlet object, we can initialize the
value using init(ServletConfig config)

ServletConfig
===========
      This object will be used to initialize the values for the loaded servlet.

How to initialize the value of ServletConfig object?
  To initalize the value of ServletConfig object, we need to configure the
container.
  Container can be configured in 2 ways
      a. XML

web.xml
------------
<servlet>
       <servlet-name>InitializationParamterApp</servlet-name>
        <servlet-class>in.ineuron.controller.InitializationParamterApp</servlet-
class>
      <init-param>
            <param-name>name</param-name>
            <param-value>sachin</param-value>
      </init-param>
      <init-param>
            <param-name>age</param-name>
            <param-value>49</param-value>
      </init-param>
      <init-param>
            <param-name>address</param-name>
            <param-value>MI</param-value>
      </init-param>
</servlet>

 methods
=======
public  Enumeration<String> getInitParameterNames();
public  String getInitParameter(String key);
               refer: ServletConfigApp

Note:
      => ServletConfig object is unique w.r.t every Servlet.
      => ServletConfig object stores the data in the form of Key,Value pair.
      => Assume we want the dbconfiguration details for a servlet like
                  url => jdbc:mysql:///octbatch
                    username=> root
                        password => root123

After adding the jar, jars will available to jdks/w configure for eclipse, not for
tomcat server.
To make those jars available for tomcat server(catalina container) we need to put
in deployment assembly(/WEB-INF/lib)
```

refer: ServletDBCommunication

Assignment
==========
Create a html form with fields like name,age,address for student
        a. perform insertion operation(use db credentials in config object)