```
   ┌─────────────────┐              ┌─────────────────┐
   │   ┌───────┐     │              │  ┌──────────┐   │
   │   │  xyz  │     │              │  │input.html│   │
   │   └───────┘     │              │  └──────────┘   │
   │ ┌─────────────┐ │              │ ┌─────────────┐ │
   │ │ forward()   │ │              │ │ forward()   │ │
   │ │             │ │              │ │             │ │
   │ ├─────────────┤ │              │ ├─────────────┤ │
   │ │ include()   │ │              │ │ include()   │ │
   │ │             │ │              │ │             │ │
   │ └─────────────┘ │              │ └─────────────┘ │
   └─────────────────┘              └─────────────────┘
          0x3                              0x4
```

```
RequestDispatcher rd =                RequestDispatcher rd =
    req.getRequestDispatcher("xyz");      req.getRequestDispatcher("input.html")
```

User

request

Servlet

JSP

response

WebBrowser
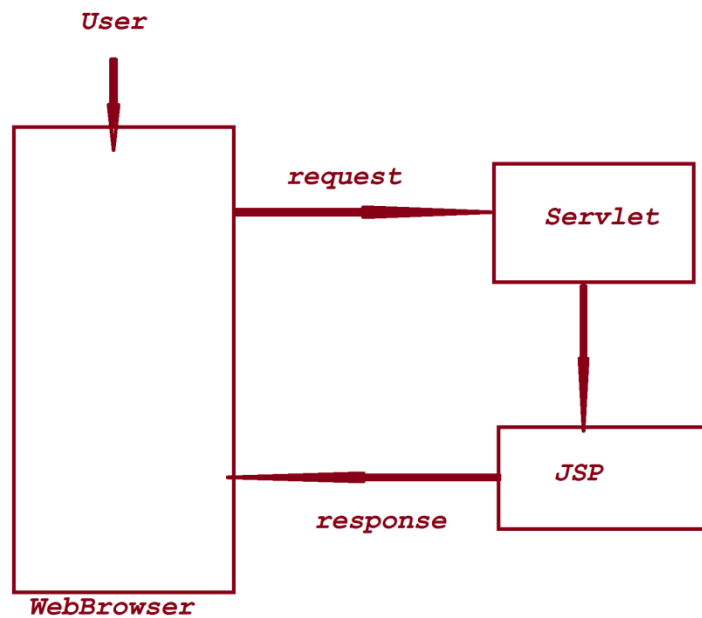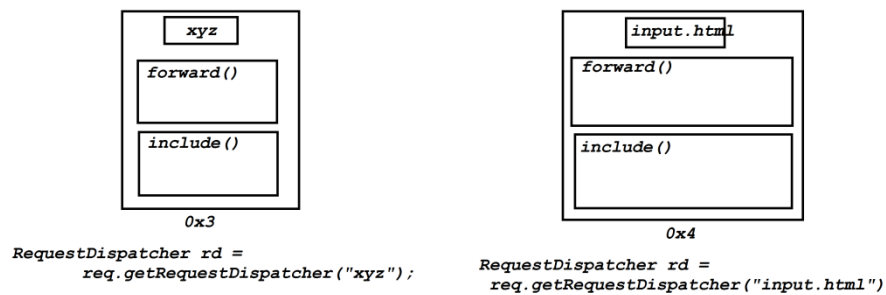
*imp

JSP Programming:

=>JSP stands for 'Java Server Page' and which is response from Web-App.

=>JSP is more simple when compared with Servlet-programming,because JSP

is tag-based-programming language.

=>In JSP,the programs are saved with (.jsp) as an extention.

=>JSP programs will hold both HTML-Code and Java-Code.

=>JSP used the followimg tags to write Java-code in JSP programs:

    1.Scripting tags

    2.Directive tags

    3.Action tags

1.Scripting tags:

  =>The Scripting tags are used to write JavaCode in JSP programs.

  =>These Scripting tags are categorized into the following:

    (a)Scriptlet tag

    (b)Expression tag

    (c)Declarative tag

(a)Scriptlet tag:

  =>Scriptlet tag is used to write Normal JavaCode or ServletCode in JSP

   programs.

  syntax:

  <% code %>

(b)Expression tag:

=>Expression tag is used to assign the value to variable or used to

display the data to WebBrowser directly.

syntax:

<%= value/Expression %>

(c)Declarative tag:

=>Declarative tag is used to declare variables and methods in JSP

Programs.

syntax:

<%! Variables;Methods %>

2.Directive tags:

=>The tags which are used to specify the directions in translation

process of JSP Programs.

=>Directive tags are categorized into the following:

(a)@page

(b)@include

(c)@taglib

(a)@page:

=>'@page' will specify Langauge used in JSP,contextType,pageEncoding,

importing and so on...

(Specifications about the JSP page)

syntax:

<%@page ... %>

(b)@include:

=>'@include' will specify which page must be included to current running

JSP program

syntax:

<%@include file="File_name"/%>

(c)@taglib:

=>'@taglib' is used to link external libraries to current JSP program.

syntax:

<%@tablib ....%>

3.Action tags:

=>Action tage used to perform some actions related to JSP programs while

execution process.

=>These Action tage are categorized into the following:

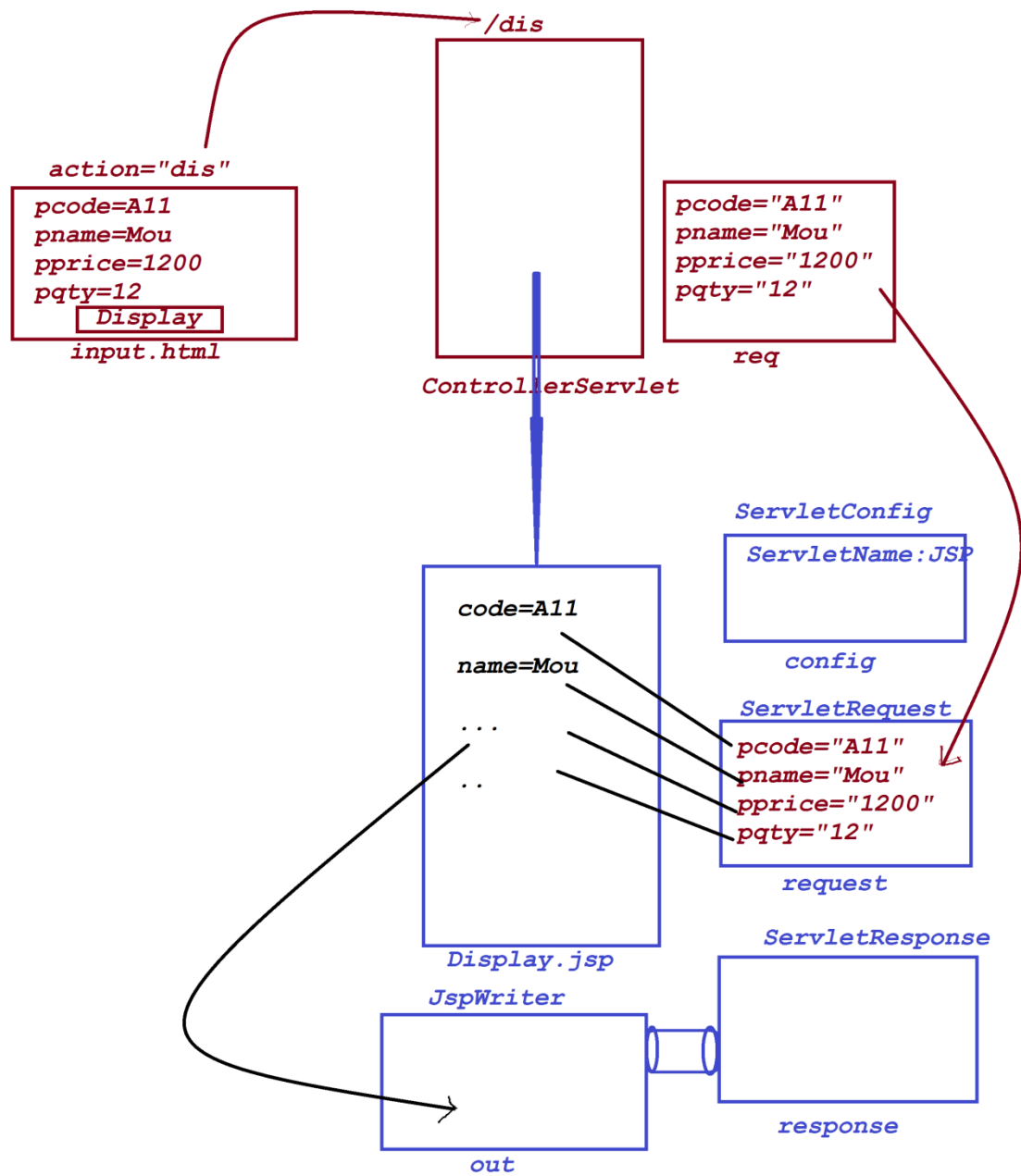*(a)<jsp:include>*

(b)<jsp:forward>

(c)<jsp:param>

(d)<jsp:useBean>

(e)<jsp:setProperty>

(f)<jsp:getProperty>

===

Ex-application:(Demonstrating Communication b/w Servlet and JSP)

Layout:

/dis

action="dis"

pcode=A11
pname=Mou
pprice=1200
pqty=12
Display

input.html

ControllerServlet

pcode="A11"
pname="Mou"
pprice="1200"
pqty="12"

req

ServletConfig

ServletName:JSP

config

code=A11

name=Mou

...

..

ServletRequest

pcode="A11"
pname="Mou"
pprice="1200"
pqty="12"

request

Display.jsp

ServletResponse

JspWriter

out

response

input.html

```
<!DOCTYPE html>
<html>
```

```html
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
 <form action="dis" method="post">
 ProductCode:<input type="text" name="pcode"><br>
 ProductName:<input type="text" name="pname"><br>
 ProductPrice:<input type="text" name="pprice"><br>
 ProductQty:<input type="text" name="pqty"><br>
 <input type="submit" name="Dispaly">
 </form>
</body>
</html>
```

ControllerServlet.java

```java
package test;

import java.io.*;

import javax.servlet.*;

import javax.servlet.annotation.*;

@SuppressWarnings("serial")

@WebServlet("/dis")

public class ControllerServlet extends GenericServlet{

    @Override

 public void service(ServletRequest req,ServletResponse res)throws

 ServletException,IOException{

     RequestDispatcher rd =

                req.getRequestDispatcher("Display.jsp");

     rd.forward(req, res);
```

```
    }

}
```

Display.jsp

```jsp
<%@ page language="java"
         contentType="text/html; charset=ISO-8859-1"
         pageEncoding="ISO-8859-1"%>
<!DOCTYPE html>
<html>
<head>
<meta charset="ISO-8859-1">
<title>Insert title here</title>
</head>
<body>
<%
String code = request.getParameter("pcode");
String name = request.getParameter("pname");
float price =
Float.parseFloat(request.getParameter("pprice"));
int qty =
Integer.parseInt(request.getParameter("pqty"));
out.println("Code="+code);
out.println("<br>Name="+name);
out.println("<br>Price="+price);
out.println("<br>Qty="+qty);
%>
</body>
</html>
```

web.xml

```xml
<?xml version="1.0" encoding="UTF-8"?>
<web-app>
  <welcome-file-list>
    <welcome-file>input.html</welcome-file>
  </welcome-file-list>
</web-app>
```

==
=