Step 1:open XAMPP-→table emp

- EMP
    - EMPID
    - EMPNAME
    - EMPPWD
    - EMPEMAIL
    - EMPCOUNTRY
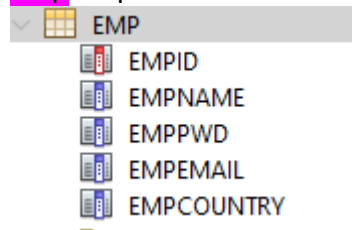
Step 2: Right click Libraries-→add .jar file

Step 3:   New Project→java with Ant-→Web Application-→PB5-→Finish

Step 4: open Web pages folder-→index.html(Code given below)

Step 5: Right click Source package-→new →Servlet→AddEmployee.java

Step 6: Right click Source package-→new →Servlet→SaveEmployee.java

Step 7: Right click Source package-→new →Servlet→UpdateEmployee.java

Step 8: Right click Source package-→new →Servlet→ViewEmployee.java

Code:index.html

```html
<!DOCTYPE html>
<!--
Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Html.html to edit this template
-->
<html>
  <head>
    <title>TODO supply a title</title>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
  </head>
  <body>
    <h1>Add Employee </h1>
    <form action="AddEmployee" method="post" >
      <table>
        <tr>
          <td>Name <td> <input type="text" name="ename"></tr>
         <tr>
           <td>Password <td> <input type="password" name="password"></tr>
         <tr>
           <td>Email <td> <input type="email" name="email"></tr>
         <tr>
           <td>Country<td> <select name="country">
                <option>India</option>
                <option>SriLanka</option>
```

```html
            <option>UK</option>
            <option>Japan</option>
          </select>
          </tr>
          <tr>
            <td colspan="2"><input type="submit" name="submit" value="Save
Employee">
          </tr>
      </table>

    </form>
    <a href='ViewEmployee'>View Employees</a>
  </body>
</html>
```

```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change
this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Servlet.java to edit this
template
 */
package com;


import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;




/**
```

```java
 *
 * @author WILMA
 */

@WebServlet(name = "AddEmployee", urlPatterns = {"/AddEmployee"})
public class AddEmployee extends HttpServlet {

    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     * @throws java.lang.ClassNotFoundException
     * @throws java.sql.SQLException
     */
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException, ClassNotFoundException, SQLException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter())
          {
          String name=request.getParameter("ename");
          String pass=request.getParameter("password");
          String mail=request.getParameter("email");
          String cntr=request.getParameter("country");
            ResultSet res;
             int r;

             out.println("hello");
             Class.forName("org.apache.derby.jdbc.ClientDriver");

             String sql;
            try (Connection cnn =
DriverManager.getConnection("jdbc:derby://localhost:1527/STUDENT","wilma","wilma")) {
                Statement stmt = cnn.createStatement();
                sql= "select max(EMPID) from WILMA.EMP";


                res=stmt.executeQuery(sql);
                res.next();
                int x=res.getInt(1);
                if(x==0)
                    x=101;
                else
```

```java
        x++;
        stmt = cnn.createStatement();
        sql="insert into WILMA.EMP (EMPID, EMPNAME, EMPPWD, EMPEMAIL,
EMPCOUNTRY) values ('"+x+"','"+name + "','" + pass + "','" + mail + "','" + cntr + "')";
        r=stmt.executeUpdate(sql);
        stmt.close();
    }


    out.println("<!DOCTYPE html>");
    out.println("<html>");
    out.println("<head>");
    out.println("<title>Servlet AddEmployee</title>");
    out.println("</head>");
    out.println("<body>");
    if(r==1)
    {
        out.println("<h1> Record Saved </h1>");}
    else
    {
    out.println("<h1> Transaction failed </h1>");
    }
    out.println( "<a href='index.html'>Home Page</a>");

    out.println("</body>");
    out.println("</html>");


    }

    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on
the left to edit the code.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
```

```java
        throws ServletException, IOException {
    try {
        processRequest(request, response);
    } catch (ClassNotFoundException | SQLException ex) {
        Logger.getLogger(AddEmployee.class.getName()).log(Level.SEVERE, null, ex);
    }
}

/**
 * Handles the HTTP <code>POST</code> method.
 *
 * @param request servlet request
 * @param response servlet response
 * @throws ServletException if a servlet-specific error occurs
 * @throws IOException if an I/O error occurs
 */
@Override
protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
    try {
        processRequest(request, response);
    } catch (ClassNotFoundException | SQLException ex) {
        Logger.getLogger(AddEmployee.class.getName()).log(Level.SEVERE, null, ex);
    }
}

/**
 * Returns a short description of the servlet.
 *
 * @return a String containing servlet description
 */
@Override
public String getServletInfo() {
    return "Short description";
}// </editor-fold>

}
```

Code: SaveEmployee.java

```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Servlet.java to edit this template
 */
```

```java
package com;

import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

import java.sql.Connection;
import java.sql.DriverManager;

import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;

/**
 *
 * @author WILMA
 */
@WebServlet(name = "SaveEmployee", urlPatterns = {"/SaveEmployee"})
public class SaveEmployee extends HttpServlet {

    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     * @throws java.lang.ClassNotFoundException
     * @throws java.sql.SQLException
     */
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException, ClassNotFoundException, SQLException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */

            out.println("hello");
            String  id=request.getParameter("empid");
            String name=request.getParameter("ename");
            String pass=request.getParameter("password");
```

```java
        String mail=request.getParameter("email");
        String cntr=request.getParameter("country");
        String sql;
          Class.forName("org.apache.derby.jdbc.ClientDriver");
          Connection cnn =
DriverManager.getConnection("jdbc:derby://localhost:1527/STUDENT","wilma","wilma");
                out.println(cnn);

          Statement stmt = cnn.createStatement();

        sql="Update emp set empName ='" +name + "',  empPwd = '" +pass + "', empEmail =
'" + mail + "', empCountry = '" + cntr + "' where empid = '" + id +"' ";
                out.println(sql);


        int res= stmt.executeUpdate(sql);

      stmt.close();
      cnn.close();

      out.println("<!DOCTYPE html>");
      out.println("<html>");
      out.println("<head>");
      out.println("<title>Servlet SaveEmployee</title>");
      out.println("</head>");
      out.println("<body>");
      if(res==1)
      { out.println("<h1> Record Updated and Saved </h1>");}
      else
      { out.println("<h1> Transaction failed </h1>");}
      out.println("</body>");
      out.println("</html>");
    }
  }

    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on
the left to edit the code.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
```

```java
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException | SQLException ex) {
            Logger.getLogger(SaveEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    /**
     * Handles the HTTP <code>POST</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException | SQLException ex) {
            Logger.getLogger(SaveEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    /**
     * Returns a short description of the servlet.
     *
     * @return a String containing servlet description
     */
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>

}
```

cOde: UpdateEmployee.java
```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change
this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Servlet.java to edit this
template
 */
package com;
```

```java
import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;

import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;
/**
 *
 * @author WILMA
 */
@WebServlet(name = "UpdateEmployee", urlPatterns = {"/UpdateEmployee"})
public class UpdateEmployee extends HttpServlet {

    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     * @throws java.lang.ClassNotFoundException
     * @throws java.sql.SQLException
     */
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException, ClassNotFoundException, SQLException {
        response.setContentType("text/html;charset=UTF-8");


        try (PrintWriter out = response.getWriter()) {
          out.println("hello");

          String  id=request.getParameter("empid");
          out.println(id);
           String sql;
```

```java
        Class.forName("org.apache.derby.jdbc.ClientDriver");
        Connection cnn =
DriverManager.getConnection("jdbc:derby://localhost:1527/STUDENT","wilma","wilma");
        ResultSet rs;
      sql="Select * from emp where empid='"+id+"'";

            out.println(sql);

        Statement stmt=cnn.createStatement();
        rs=stmt.executeQuery(sql);
        rs.next();
            out.println("<!DOCTYPE html>");
    out.println("<html>");
    out.println("<head>");
    out.println("<title>Servlet UpdateEmployee</title>");
    out.println("</head>");
    out.println("<body>");
    out.println("<h1>Update Employee </h1>");
    out.println("<form method=\"post\" action=\"SaveEmployee\">");
    out.println("<input type=\"hidden\" name=\"empid\" value= " + id + ">");

    out.println("<table>");
    out.println("<tr>");
    out.println("<td>Name <td> <input type=\"text\" name=\"ename\" value="
+rs.getString(2)+"></tr>");
    out.println("   <tr>");
    out.println("      <td>Password <td> <input type='password' name=\"password\"
value=" +rs.getString(3)+"></tr>");
    out.println("   <tr>");
    out.println("      <td>Email <td> <input type=\"email\" name=\"email\" value="
+rs.getString(4)+" ></tr>");
    out.println("   <tr>");
    out.println("      <td>Country<td> <select name=\"country\">");
    out.println("         <option>India</option>");
    out.println("         <option>SriLanka</option>");
    out.println("         <option>UK</option>");
    out.println("         <option>Japan</option>");
    out.println("         </select>");
    out.println("         </tr>");
    out.println("         <tr>");
    out.println("            <td colspan=2><input type=\"submit\" name=\"submit\"
value=\"Edit & Save \">");
    out.println("         </tr>");
    out.println("</table>");
    out.println("</form>");
```

```java
            out.println("</body>");
            out.println("</html>");
            stmt.close();
            cnn.close();
        }
    }

    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException | SQLException ex) {
            Logger.getLogger(UpdateEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    /**
     * Handles the HTTP <code>POST</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException | SQLException ex) {
            Logger.getLogger(UpdateEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    /**
     * Returns a short description of the servlet.
```

```java
     *
     * @return a String containing servlet description
     */
    @Override
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>

}
```

code:ViewEmployee.java

```java
/*
 * Click nbfs://nbhost/SystemFileSystem/Templates/Licenses/license-default.txt to change this license
 * Click nbfs://nbhost/SystemFileSystem/Templates/JSP_Servlet/Servlet.java to edit this template
 */
package com;

import java.io.IOException;
import java.io.PrintWriter;
import jakarta.servlet.ServletException;
import jakarta.servlet.annotation.WebServlet;
import jakarta.servlet.http.HttpServlet;
import jakarta.servlet.http.HttpServletRequest;
import jakarta.servlet.http.HttpServletResponse;
import java.sql.Connection;
import java.sql.DriverManager;
import java.sql.ResultSet;
import java.sql.SQLException;
import java.sql.Statement;
import java.util.logging.Level;
import java.util.logging.Logger;

/**
 *
 * @author WILMA
 */
@WebServlet(name = "ViewEmployee", urlPatterns = {"/ViewEmployee"})
public class ViewEmployee extends HttpServlet {

    /**
     * Processes requests for both HTTP <code>GET</code> and <code>POST</code>
     * methods.
     *
     * @param request servlet request
```

```
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     * @throws java.lang.ClassNotFoundException
     * @throws java.sql.SQLException
     */
    protected void processRequest(HttpServletRequest request, HttpServletResponse response)
            throws ServletException, IOException, ClassNotFoundException, SQLException {
        response.setContentType("text/html;charset=UTF-8");
        try (PrintWriter out = response.getWriter()) {
            /* TODO output your page here. You may use following sample code. */
            Class.forName("org.apache.derby.jdbc.ClientDriver");
            Connection cnn =
DriverManager.getConnection("jdbc:derby://localhost:1527/STUDENT","wilma","wilma");
            ResultSet rs;

            Statement stmt=cnn.createStatement();

            String sql="Select * from WILMA.EMP";
            rs=stmt.executeQuery(sql);

            out.println("<!DOCTYPE html>");
            out.println("<html>");
            out.println("<head>");
            out.println("<title>Servlet ViewEmployee</title>");
            out.println("</head>");
            out.println("<body>");
            out.println("<h1>Employee List</h1>");
            out.println("<table border=2");
            out.println("<tr>");
            out.println("<th>Id<th>Name<th>Password<th>Email<th>Country<th>Edit");
        out.println("</tr>");

            while(rs.next()){
              out.println("<tr>");
              out.println("<td>"+rs.getInt(1));
              out.println("<td>" +rs.getString(2));
              out.println("<td>"+ rs.getString(3));
              out.println("<td>"+rs.getString(4));
              out.println("<td>"+rs.getString(5));
              out.println("<td> <a href=\"UpdateEmployee?empid="+rs.getInt(1)+"\">Edit</a>");
            out.println("</tr>");
            }
            out.println("</table>");
            out.println("</body>");
            out.println("</html>");
```

```java
        }
    }

    // <editor-fold defaultstate="collapsed" desc="HttpServlet methods. Click on the + sign on the left to edit the code.">
    /**
     * Handles the HTTP <code>GET</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doGet(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException | SQLException ex) {
            Logger.getLogger(ViewEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    /**
     * Handles the HTTP <code>POST</code> method.
     *
     * @param request servlet request
     * @param response servlet response
     * @throws ServletException if a servlet-specific error occurs
     * @throws IOException if an I/O error occurs
     */
    @Override
    protected void doPost(HttpServletRequest request, HttpServletResponse response)
        throws ServletException, IOException {
        try {
            processRequest(request, response);
        } catch (ClassNotFoundException | SQLException ex) {
            Logger.getLogger(ViewEmployee.class.getName()).log(Level.SEVERE, null, ex);
        }
    }

    /**
     * Returns a short description of the servlet.
     *
     * @return a String containing servlet description
     */
    @Override
```

```java
    public String getServletInfo() {
        return "Short description";
    }// </editor-fold>

}
```