SERVLETS

- static pages versus dynamic pages:

  1) static pages: content written in HTML;

  2) dynamic pages: HTML pages dynamically generated based on user's requests;

- **CGI (1993)**: independent of language, first pattern for generating dynamic pages. It establishes a well-defined interface between executable programs and the web server;
- **Servlets (1997)**: first specific pattern for Java that allows the creation of dynamic pages;
- create a Java dynamic page in Eclipse as described in class2. Name your project as "class5". **Tip**: remember to restart Tomcat server before to check the changes in the browser;
- in the folder WebContent, create a file "index.html" (File->New->Other->Web->HTML Page ou HTML File). Edit the file as follows:

```
<html>
	<head>
		<title>Project Class Servlets</title>
	</head>
	<body>
		First page of project! <br>
		<a href="insert.html">Insert Student</a>
	</body>
</html>
```

- Execute the project (Run As → Run on Server) and open the page http://localhost:8080/class5 in the browser (preferably Firefox);
- create a file insert.html inside the folder WebContent with the following:

```
<html>
	<head>
		<title>Insertion of Students</title>
	</head>
	<body>
		<form action="insert">
			Name: <input type="text" name="name" /><br />
			Email: <input type="text" name="email" /><br />
			Address: <input type="text" name="address" /><br />

			<input type="submit" value="Save" />
		</form>
	</body>
</html>
```

- add the driver of the database H2 to the project: download from the manufacturer's website the file "h2-1.3.170.jar" and add to the project inside the folder WebContent -> WEB-INF -> lib;
- add the project with the access data operations that you made in the previous classes: download the file "contacts.zip", verify if everything is working properly, generate the executable jar file

and add to the project inside the folder WebContent -> WEB-INF -> lib;

- create a package named: br.edu.ufabc.class5.servlet
- inside the new package, create a class named InsertServlet which extends HttpServlet, with the following:

```
public class InsertServlet extends HttpServlet {

    protected void service(HttpServletRequest request, HttpServletResponse
response) throws ServletException, IOException {
            // it searches the Writer
            PrintWriter out = response.getWriter();

            // searching request parameters of insertion
            String name = request.getParameter("name");
            String email = request.getParameter("email");
            String address = request.getParameter("address");

            // it instantiates the object Contact
            Contact contact = new Contact();
            contact.setName(name);
            contact.setEmail(email);
            contact.setAddress(address);

            ContactDAO dao = new ContactDAO();
            dao.insert(contact);

            // it prints name of the added contact
            out.println("<html>");
            out.println("<body>");
            out.println("Contact "+contact.getName()+ " successfully inserted");
            out.println("</body>");
            out.println("</html>");
    }
}
```

- map the class InsertServlet in the file web.xml, adding to the file the following:

```
<servlet>
    <servlet-name>Insert</servlet-name>
    <servlet-class>br.edu.ufabc.class.servlet.InsertServlet</servlet-class>
</servlet>

<servlet-mapping>
    <servlet-name>Insert</servlet-name>
    <url-pattern>/insert</url-pattern>
</servlet-mapping>
```

- restart Tomcat server and access the application in the browser: http://localhost:8080/class5/index.html
- Specify the method in the form so that the data is sent by POST (instead of GET), so the data do not appear in the URL;
- **Exercises.** Using the operations of the project contacts, implement:

1) Updating;
2) Deletion;
3) Listing of all students.