

# Internet Technologies



Lab1 2011  
Introduction

# Overview

---

- What will we do in the labs?
- Project
  - Requirements
  - Examples
  - Evaluation
- Tools

# How to reach us?

---

- Cavada Dario:
- [cavada@ectrlsolutions.com](mailto:cavada@ectrlsolutions.com)
  
- Mehdi Elahi:
- [mehdi.elahi@stud-inf.unibz.it](mailto:mehdi.elahi@stud-inf.unibz.it)
  
- The lab material is on
  - <http://www.inf.unibz.it/~ricci/IT/index.html>

# Labs - organization

---

- We have **12 labs in which we will:**
  - Run the software examples
  - Solve small exercises
  - **and also work on the project**

# Structure of the Project

---



- ❑ The **application** must run on the application server that we shall indicate in the labs
- ❑ The **report** must describe clearly in **min 2000, max 3000** words, plus images
  - The **functions** of the web application and their **motivation**
  - The **architecture** of the application (modules and their roles) – use figures
  - Main **classes** and main **methods**
  - Major **technical problems** found during the work
- ❑ The project will be **evaluated** according to: complexity of the implemented functions, user interface usability and completeness, organization of the code, coverage of the required technologies.

# Functions

---

## □ **User Management**

- List existing users of the system
- Creation of a new user
- Deletion of the existing user
- List and modify access rights of the users - check boxes with some capabilities (min 3) – e.g.
  - A user can comment all items
  - A user can download an item with label “parties”
- User registration and login to the system

# Functions (II)

---

## □ **Items management**

- Users add, edit or remove items
- Users comments or reviews items
- Administrator can manage the comments (edit, remove, add)

## □ **Personalization**

- Salutation for a returning user
- List resources that are new from the last visit
- Customization of the layout for a class of users.

# Techniques – MUST be used

---

- ❑ Static HTML: "natürlich"
- ❑ CSS: all the look and feel must be in CSS files
- ❑ Javascript: check input and manage menus
- ❑ Servlet
  - Reading (parameters and headers) and writing headers and resulting page
  - Session management with cookies and session object
  - Redirect the client
  - Forward to another page or servlet
- ❑ JSP
  - Expressions, scriptlets and declarations
- ❑ Beans
- ❑ DBMS access through JDBC
- ❑ Integration of JSP and Servlets (forward and include) using MVC pattern.



# Software Components

---

- ❑ DBMS – PostgreSQL ([lamj.inf.unibz.it](http://lamj.inf.unibz.it))
- ❑ Application server – Tomcat 6.x ([lamj.inf.unibz.it](http://lamj.inf.unibz.it))
- ❑ Programming language – Java 1.6
- ❑ IDE – Eclipse or Netbeans
  
- ❑ Minimal Framework –we will provide you with a minimal framework:
  - Layout
  - Example CSS
  - Connection to DBMS
  - JSP and Servlet examples

# Project Evaluation

---

- Usability
  - Minimum level of usability! We should be able to visit all the system functions and use them without any "manual" – the navigation through the functions should be supported
- No errors
  - The system should run smoothly without errors and with reasonable response times
- All the required functions should be supported
- All the required techniques should be used
- The report
  - must clearly illustrate the design choices: functions and the technical implementation
  - **min 2000, max 3000** words, plus images.

# Timeline

---

- ❑ Written exam is on ???
- ❑ The projects should be uploaded not later than ??? on the web site ... (instructions will follow)
- ❑ The report should be upload together with the project as a PDF file and in the home page there must be the link to the pdf

# Evolution of Project 1/10

---

- ❑ First you will create a static HTML web page
- ❑ You will validate your HTML using W3C validators

- [home](#)
- [teaching](#)
- [cv](#)
- [research](#)
- [misc.](#)

## **Linus::misc**

### **Links**

[kalnai.blogspot.com](http://kalnai.blogspot.com)

My blog about experiences in mountains. Sorry only in Lithuanian language.

[photos@megalogika.lt](http://photos@megalogika.lt)

Some traveling photos.

[PhD@inf.unibz.it](http://PhD@inf.unibz.it)

Webpage of the PhD students at the Free University of Bolzano.

# Evolution of Project 2/10

---

- Next, you will extend it with CSS

## LINAS::MISC

### LINKS

[kalnai.blogspot.com](http://kalnai.blogspot.com)

My blog about experiences in mountains. Sorry only in Lithuanian language.

[photos@megalogika.it](mailto:photos@megalogika.it)

Some traveling photos.

[PhD@inf.unibz.it](mailto:PhD@inf.unibz.it)

Webpage of the PhD students at the Free University of Bolzano.

[home](#)

[teaching](#)

[cv](#)

[research](#)

[misc.](#)

# Evolution of Project 3/10

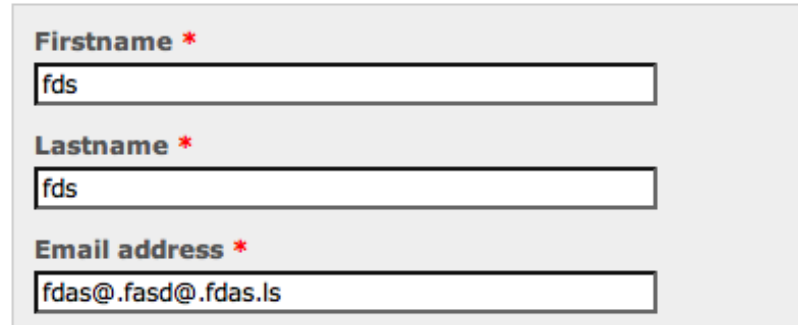
---

- ❑ You will create HTML forms for submitting data to the server
- ❑ You will add basic Java Script functionality to your web page
  - Form fields checking
  - Fast image preloading
  - etc

**There are errors with your registration:**

**! Please enter a valid email address**

**! The email addresses you entered did not match**

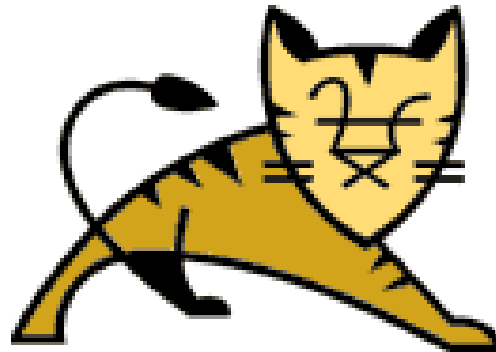


The screenshot shows a registration form with three input fields. The first field is labeled 'Firstname \*' and contains the text 'fds'. The second field is labeled 'Lastname \*' and also contains 'fds'. The third field is labeled 'Email address \*' and contains 'fdas@.fasd@.fdas.ls'. Above the form, there are two red error messages: '! Please enter a valid email address' and '! The email addresses you entered did not match'.

# Evolution of Project 4/10

---

- Configure Tomcat application server
- Implement initial server side application
  - Posted data managing (from HML Forms)
  - Uploading and displaying photos/music



# Evolution of Project 5/10

---

- ❑ Create DDT and XML of trusted users database
- ❑ Check Validity
- ❑ Advanced – RSS feed of news on your page

```
<?xml version="1.0" e
<quiz>
  <question>
    Who was the forty-second
    president of the U.S.A.?
  </question>
  <answer>
    William Jefferson Clinton
  </answer>
  <!-- Note: We need to add
  more questions later.-->
</quiz>
```

**XML**



# Evolution of Project 6/10

---

- ❑ Add redirect function to the application
- ❑ Respond differently depending on the web-browser
- ❑ Maybe somebody wants to make WAP response...



**Netscape**



# Evolution of Project 7/10

---

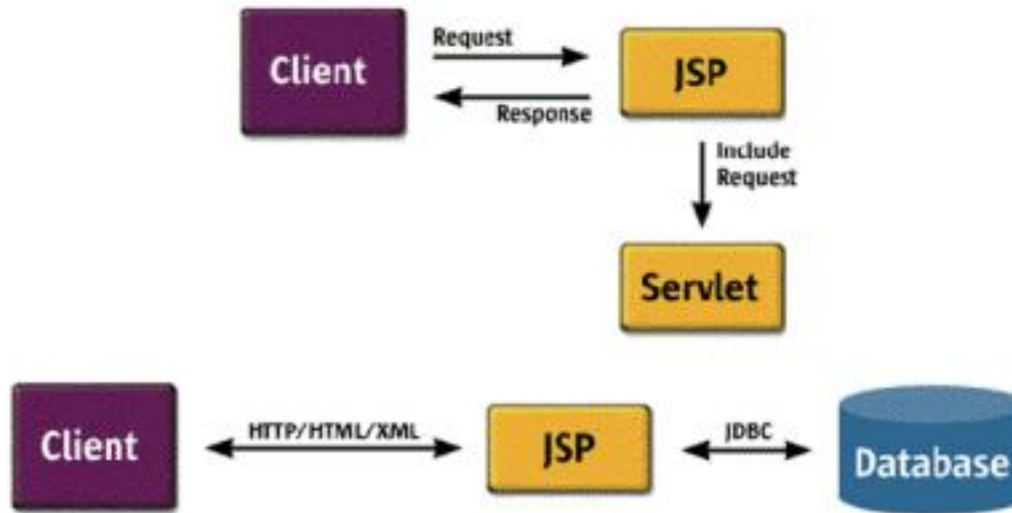
- ❑ Add cookies to track the persons that access the page
- ❑ Maybe implement functionality to allow some context only for trusted users (from XML)
- ❑ Respond to old users with a message



# Evolution of Project 8/10

---

- Replace starting page with a JSP page



# Evolution of Project 9/10

---

- Add database support
  - Retrieve data using JDBC
  - We will use PostgreSQL for our projects
  - Display the data



# Evolution of Project 10/10

---

- Implement a shopping/visiting cart
  - User can select what pictures to download in a single zip from different albums
  - Other information managing within the session



# Project Evaluation

---

- The project will be evaluated according to:
  - complexity of the implemented functions
  - user interface usability and completeness
    - Learn from bad examples:
      - <http://www.webpagesthatsuck.com>
      - <http://www.havenworks.com/> 😊
    - Good practical guide:
      - <http://www.usability.gov>
      - <http://www.w3schools.com/quality/default.asp>
  - organization of the code

# Tools

---

- Java IDE for server side coding, XML editing, validating
  - Eclipse
  - NetBeans
- Web Browsers
  - Firefox firebug + codeburner
  - Firefox developer plugin
- rdesktop (only for linux users (we suggest using windows or mac 😊))
  - `rdesktop turing.inf.unibz.it -d UNIBZ -u _USERNAME_ -a 16 -g 1280x960`

# Java Reminder

---

- Create your first webapp
  - JSP
  - Servlet
- Install Firefox plugins

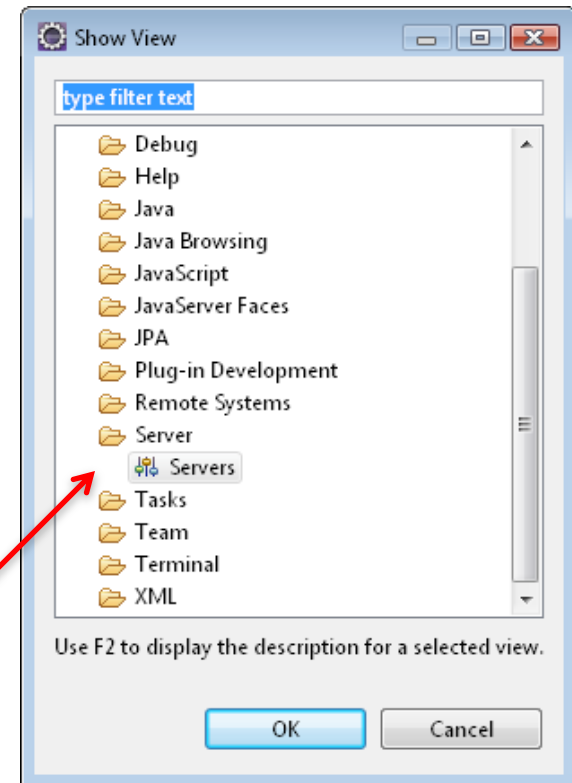
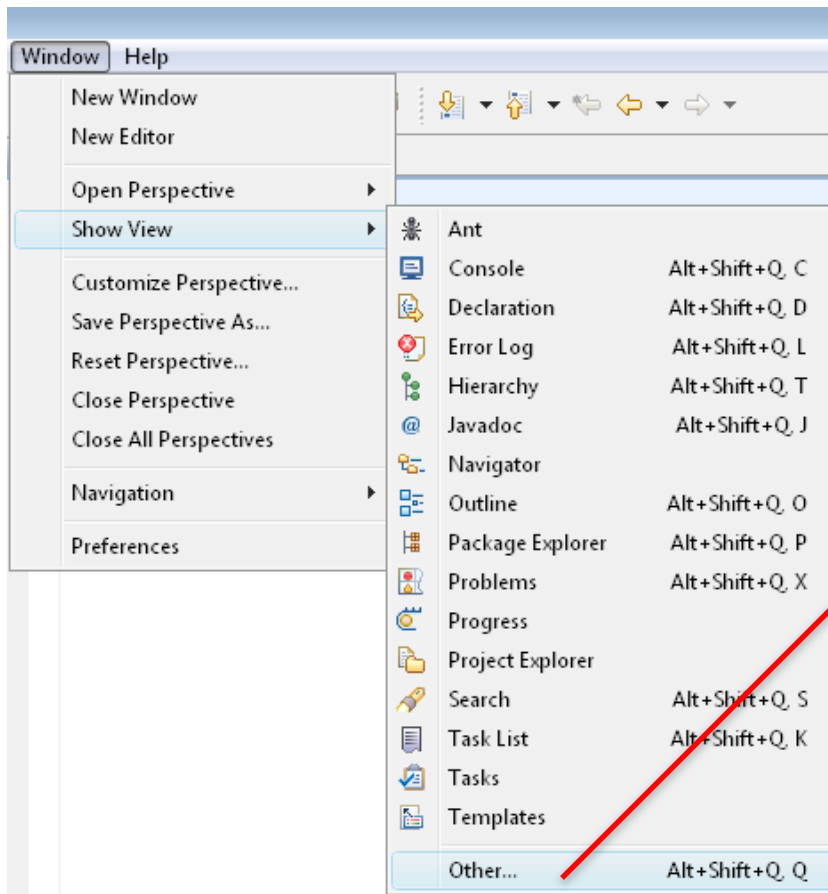


# Install Tomcat on your IDE

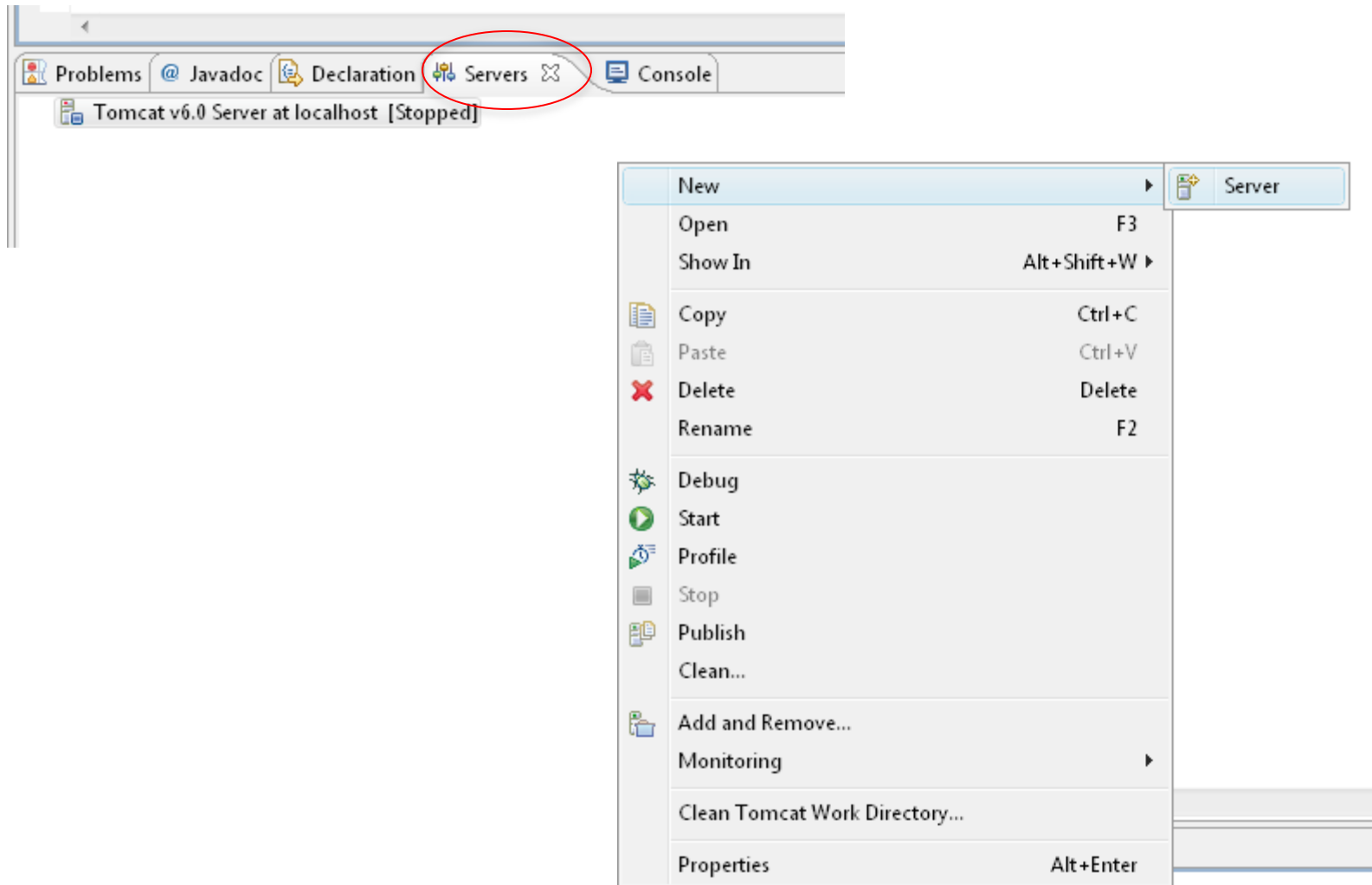
---

- Requirements:
  - J2 SDK 1.6
  - Tomcat 6.0.14
  - Eclipse or NetBeans

# Eclipse: Show Server View



# Eclipse: Define New Server



# Eclipse: Define New Server (cont.)

**New Server**

**Define a New Server**

Choose the type of server to create

Server's host name: localhost

[Download additional server adapters](#)

Select the server type:

type filter text

- Apache
  - Tomcat v3.2 Server
  - Tomcat v4.0 Server
  - Tomcat v4.1 Server
  - Tomcat v5.0 Server
  - Tomcat v5.5 Server
  - Tomcat v6.0 Server**

Publishes and runs J2EE and Java EE Web projects and server configurations to a local Tomcat server.

Server name: Tomcat v6.0 Server at localhost

Server runtime environment: Apache Tomcat v6.0 [Add...](#)

[Configure runtime environments...](#)

< Back Next > Finish Cancel

**New Server Runtime Environment**

**Tomcat Server**

Specify the installation directory

Name: Apache Tomcat v6.0.14

Tomcat installation directory: C:\cots\apache-tomcat-6.0.14 [Browse...](#)

apache-tomcat-6.0.14 [Download and Install...](#)

JRE: Workbench default JRE [Installed JREs...](#)

< Back Next > Finish Cancel

# Eclipse: new project

The image shows the Eclipse IDE interface. The 'File' menu is open, displaying various options. A red arrow points from the 'Other...' option in the 'File' menu to the 'Dynamic Web Project' option in the 'New' wizard dialog.

**File Menu Options:**

- New (Alt+Shift+N)
- Open File...
- Close (Ctrl+W)
- Close All (Ctrl+Shift+W)
- Save (Ctrl+S)
- Save As...
- Save All (Ctrl+Shift+S)
- Revert
- Move...
- Rename... (F2)
- Refresh (F5)
- Convert Line Delimiters To
- Print... (Ctrl+P)
- Switch Workspace
- Restart
- Import...
- Export...
- Properties (Alt+Enter)
- 1 library.jsp [ext/ext-web/docroot/...]
- 2 init.jsp [ext/ext-web/docroot/html/...]
- 3 build.xml [ext/ext-web]
- 4 liferay-portlet-ext.xml [ext/...]
- Exit

**New Wizard Dialog:**

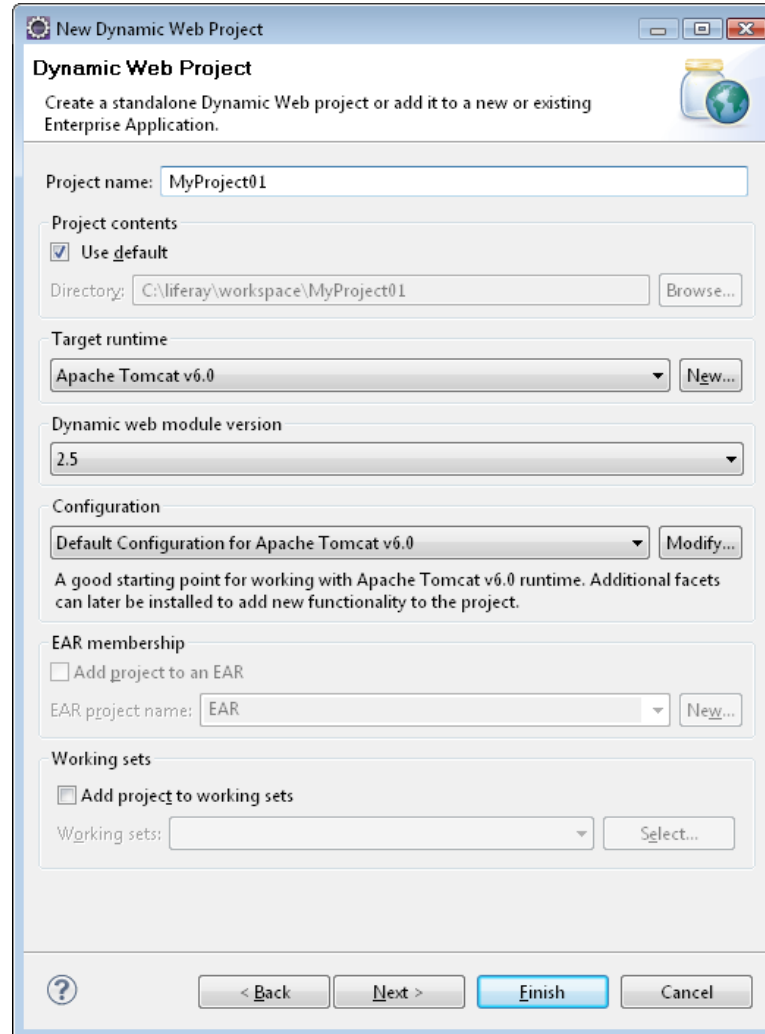
**Select a wizard**  
Create a Dynamic Web project

Wizards:

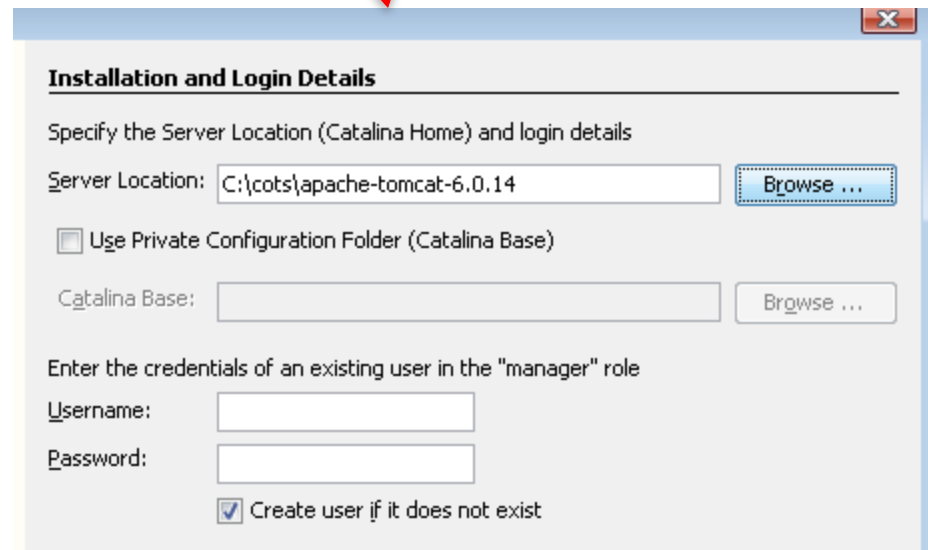
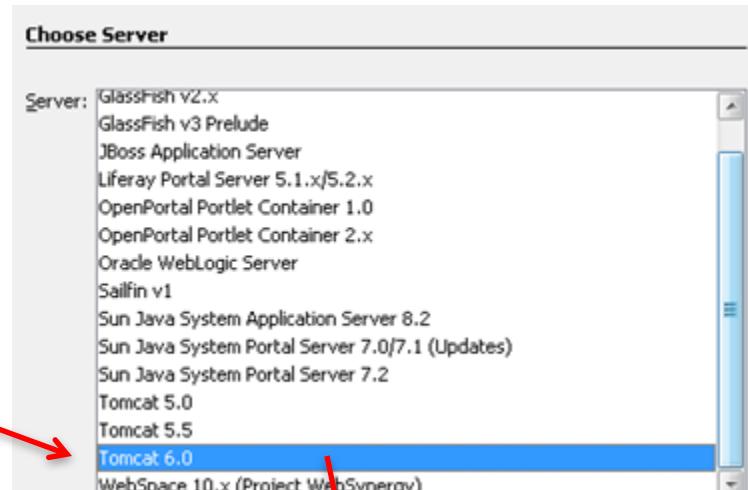
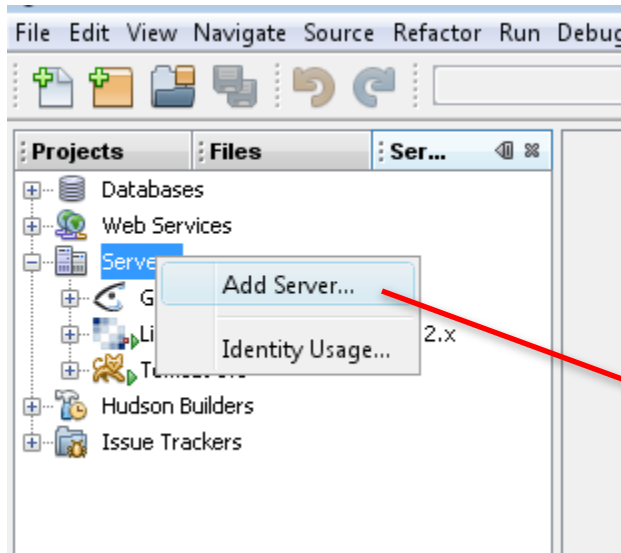
- type filter text
- Server
- SQL Development
- Tasks
- User Assistance
- Web
  - CSS
  - Dynamic Web Project**
  - Filter
  - HTML Page
  - JSP
  - JSP Tag
  - Listener
  - Servlet

Buttons: < Back, Next >, Finish, Cancel

# Eclipse: new project (cont.)



# NetBeans: Define New Server



# NetBeans: new project

The image shows the NetBeans IDE 6.7.1 interface. The 'File' menu is open, and the 'New Project...' option is selected. A red arrow points from the 'New Project...' menu item to the 'Choose Project' dialog box. In the 'Choose Project' dialog, the 'Java Web' category is selected in the 'Categories' list, and the 'Web Application' project type is selected in the 'Projects' list. Another red arrow points from the 'Web Application' project type to the 'Name and Location' dialog box.

**NetBeans IDE 6.7.1**

File Edit View Navigate Source Refactor Run Debug Profile Team

New Project... Ctrl+Majusc+N  
New File... Ctrl+N  
Open Project... Ctrl+Majusc+O  
Open Recent Project  
Close Project  
Open File...  
Open Recent File  
Project Group  
Project Properties  
Import Project

**Choose Project**

Categories:

- Java
- JavaFX
- Java Web
- Java EE
- Java ME
- Maven

Projects:

- Web Application
- Web Application with Existing Sources
- Web Free-Form Application

**Name and Location**

Project Name: MyWebapp

Project Location: C:\Workingdirectory\test

Project Folder: C:\Workingdirectory\test\MyWebapp

Use Dedicated Folder for Storing Libraries

Libraries Folder:

Different users and projects can share the same compilation libraries (see Help for details).

Set as Main Project