Fpt University

Introduction to Web-Based Java Applications (PRJ321/PRJ301)

Prerequisites

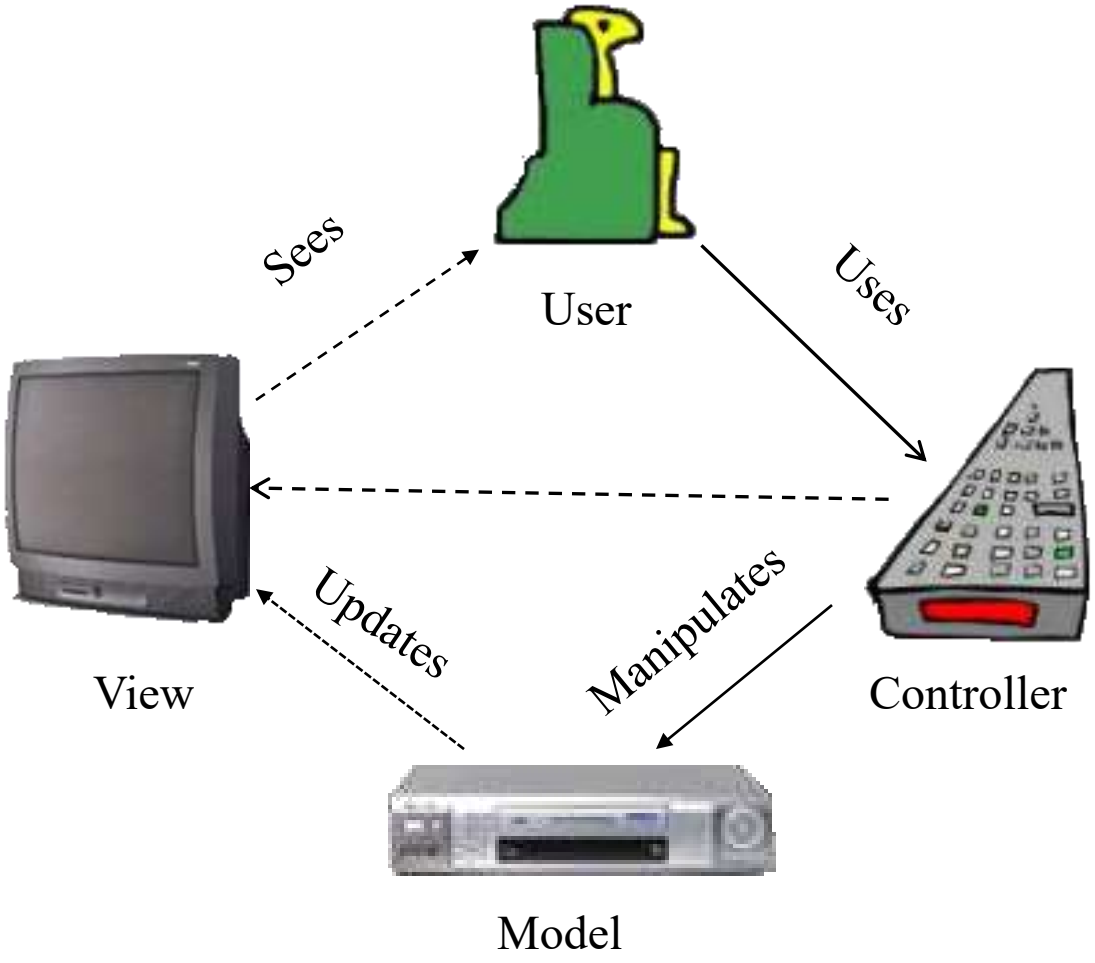
- **Completed:**
  - DBI202 (Database Systems)

Course Objectives

- This course **explores the features** of JavaEE (J2EE)
  - Understand the **core technologies** of **Java web** programming (Servlets, JSP, JavaBeans, Custom Tags, Filtering)
  - Understand and be able to **apply MVC architecture** for the web **combining with framework** (Struts 2)
  - Develop a **Web Application** (Servlets, JSP)

MVC Design Pattern

Model – View – Controller



This is a MVC Model

Course Objectives

- The MVC architecture is applied in web application

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Web Server Container

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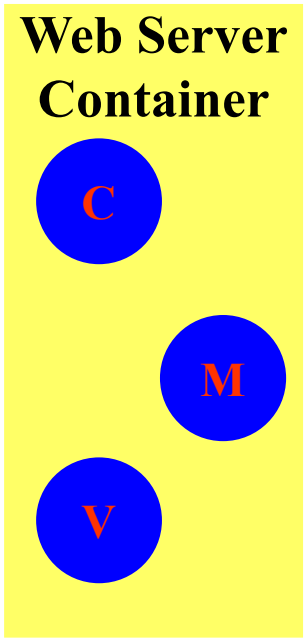

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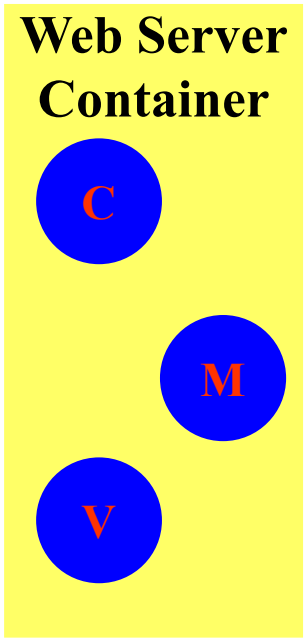

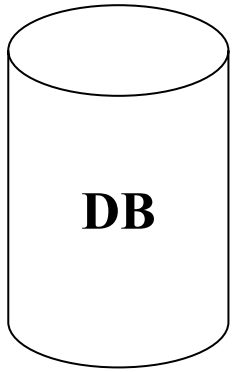

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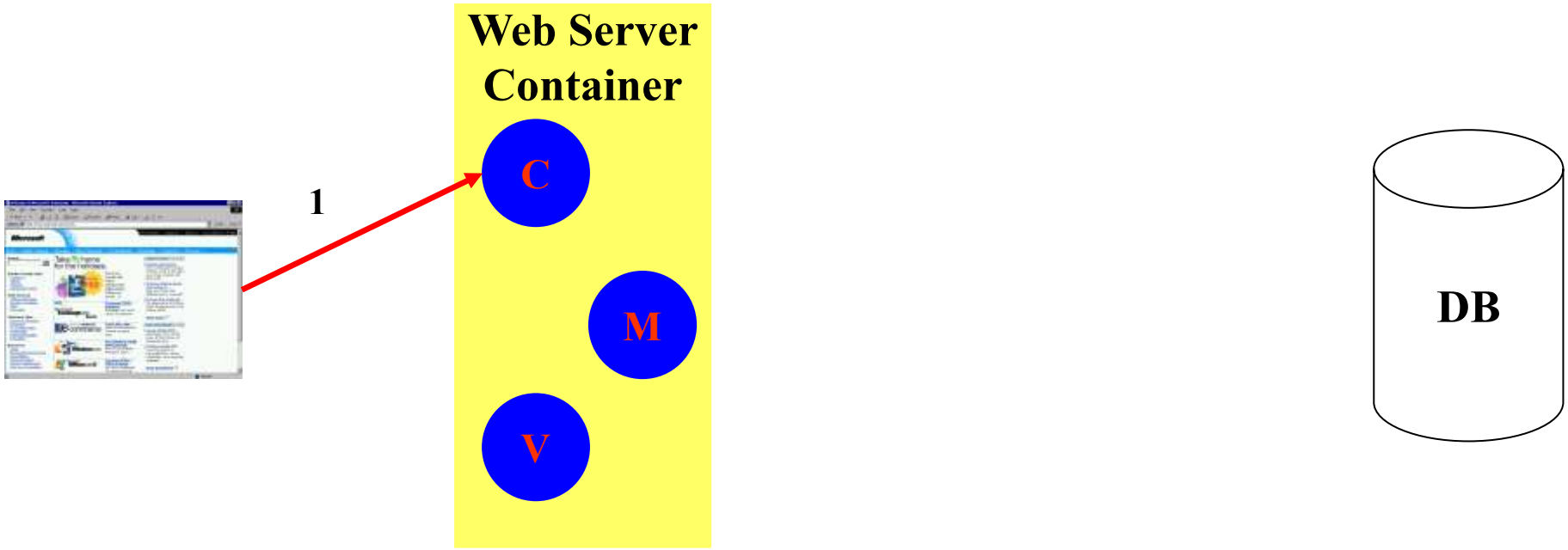

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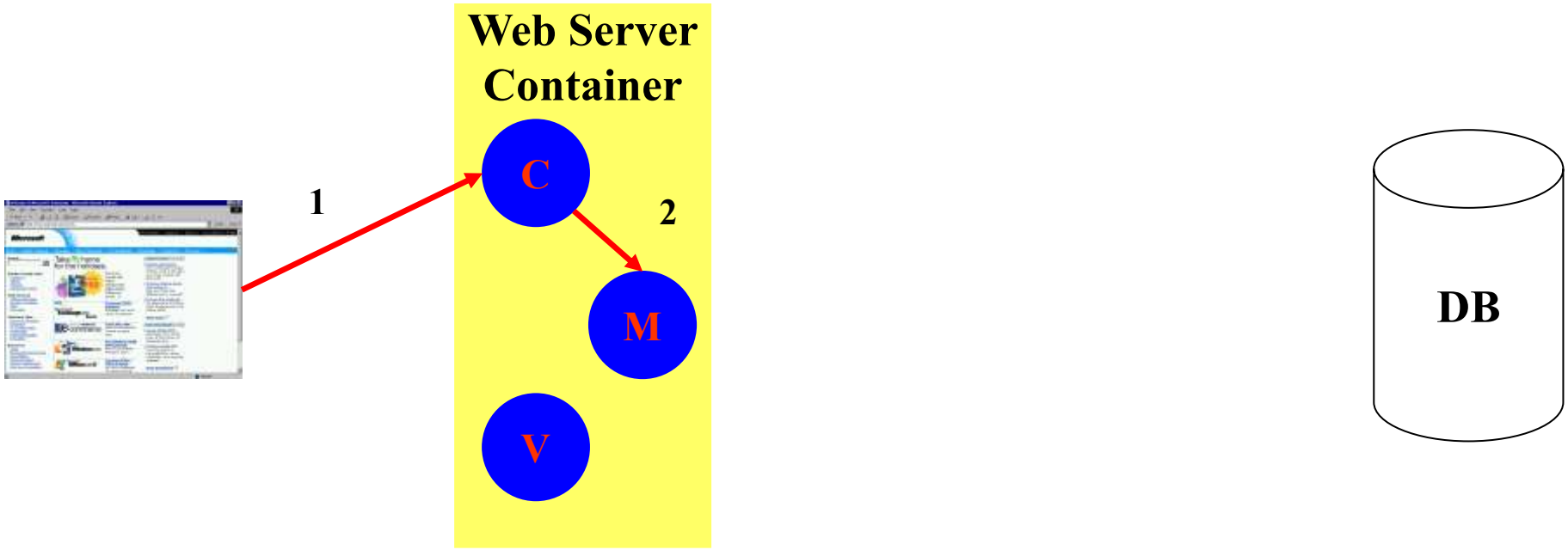

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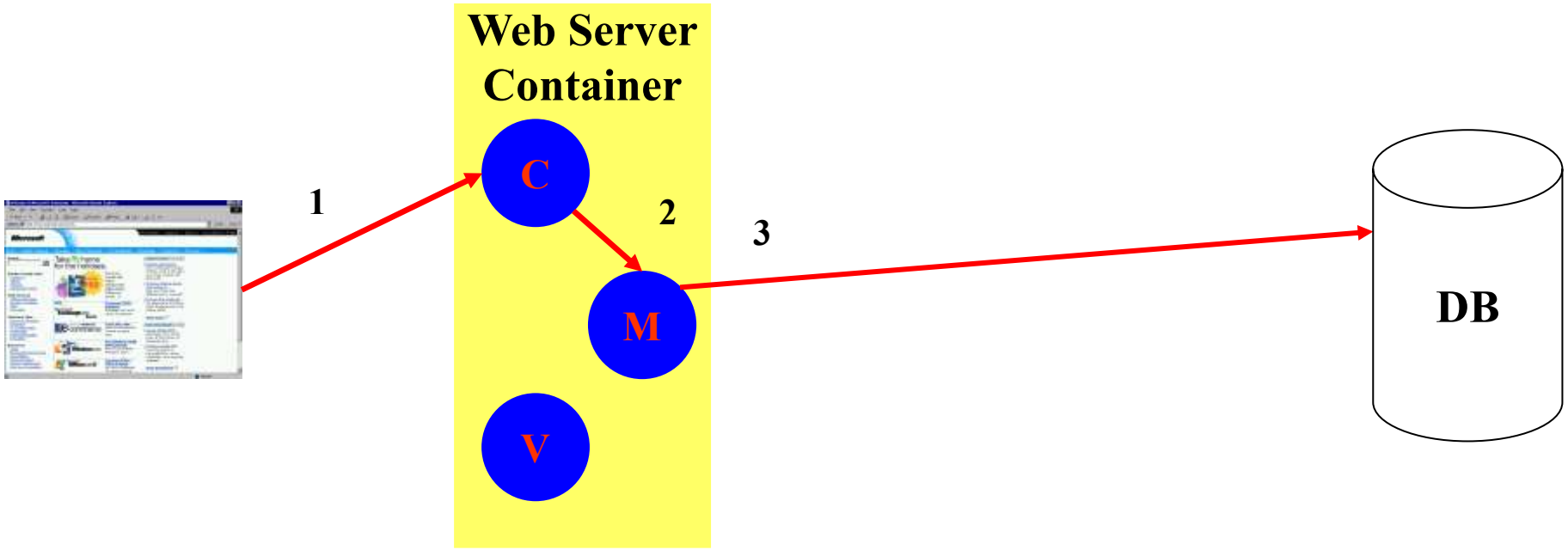

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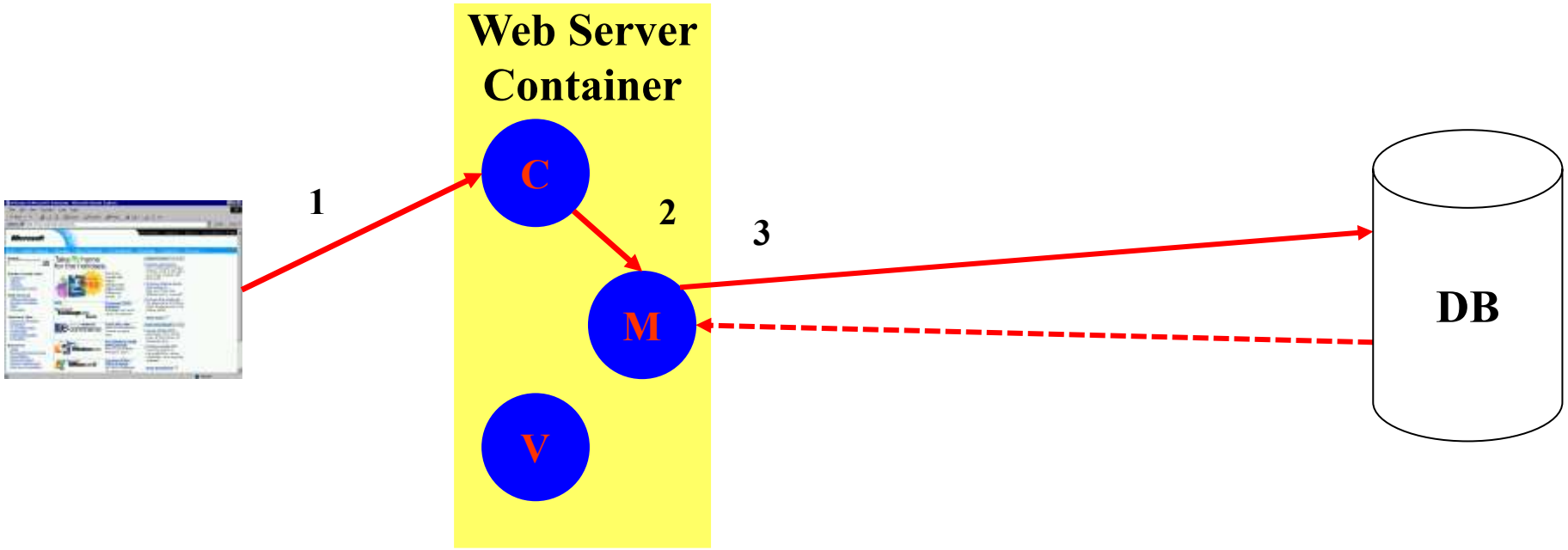

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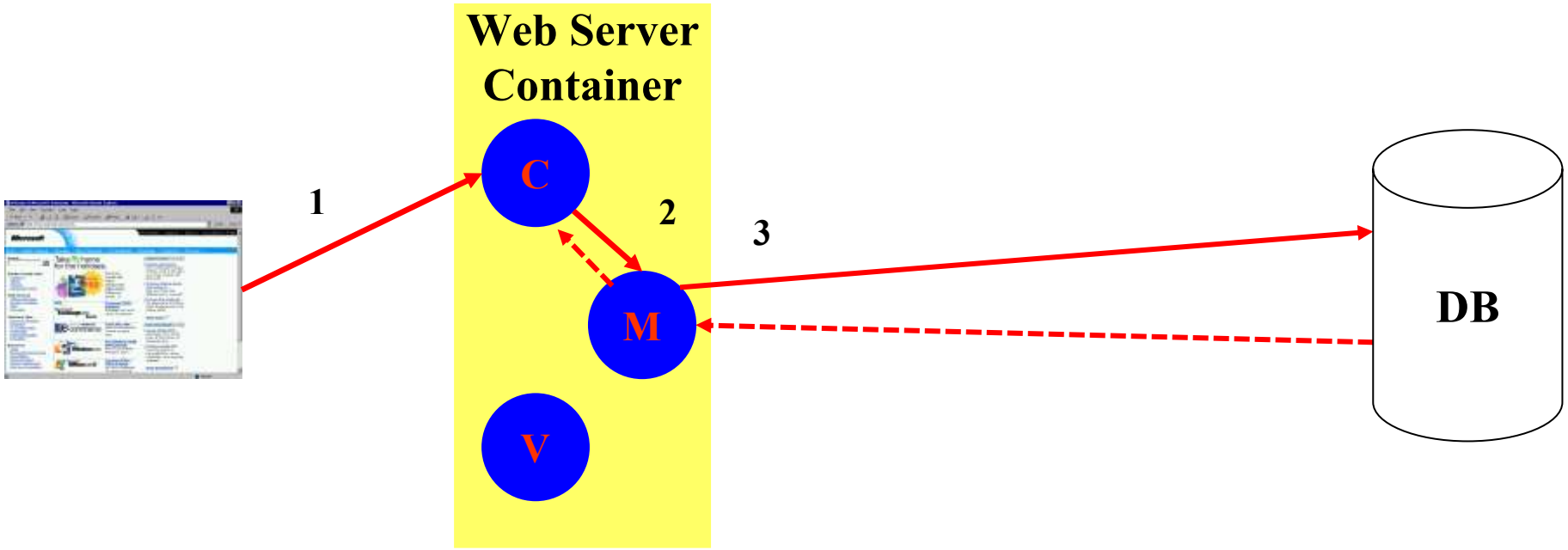

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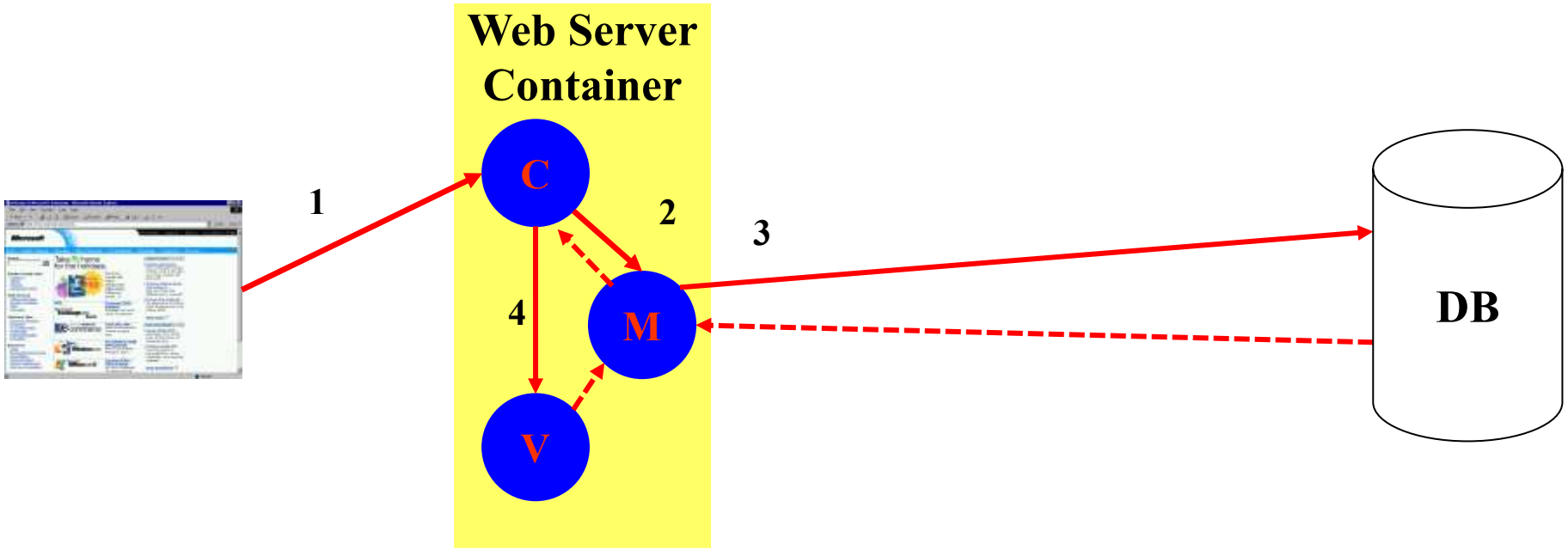

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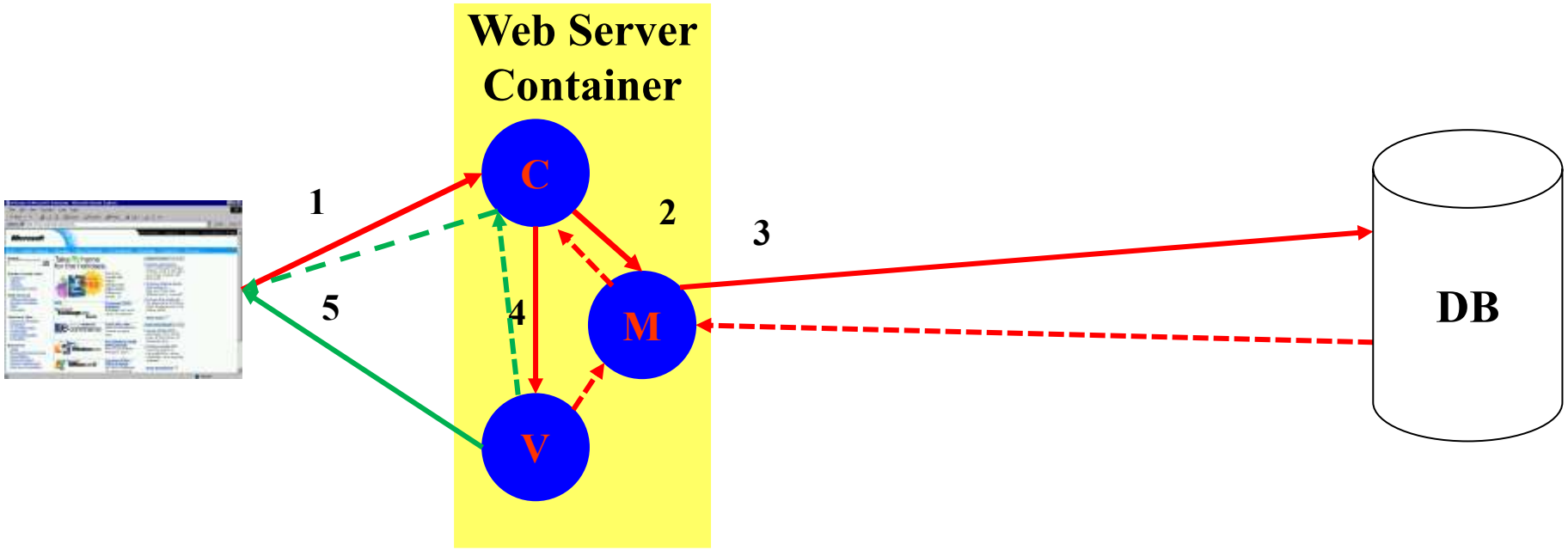

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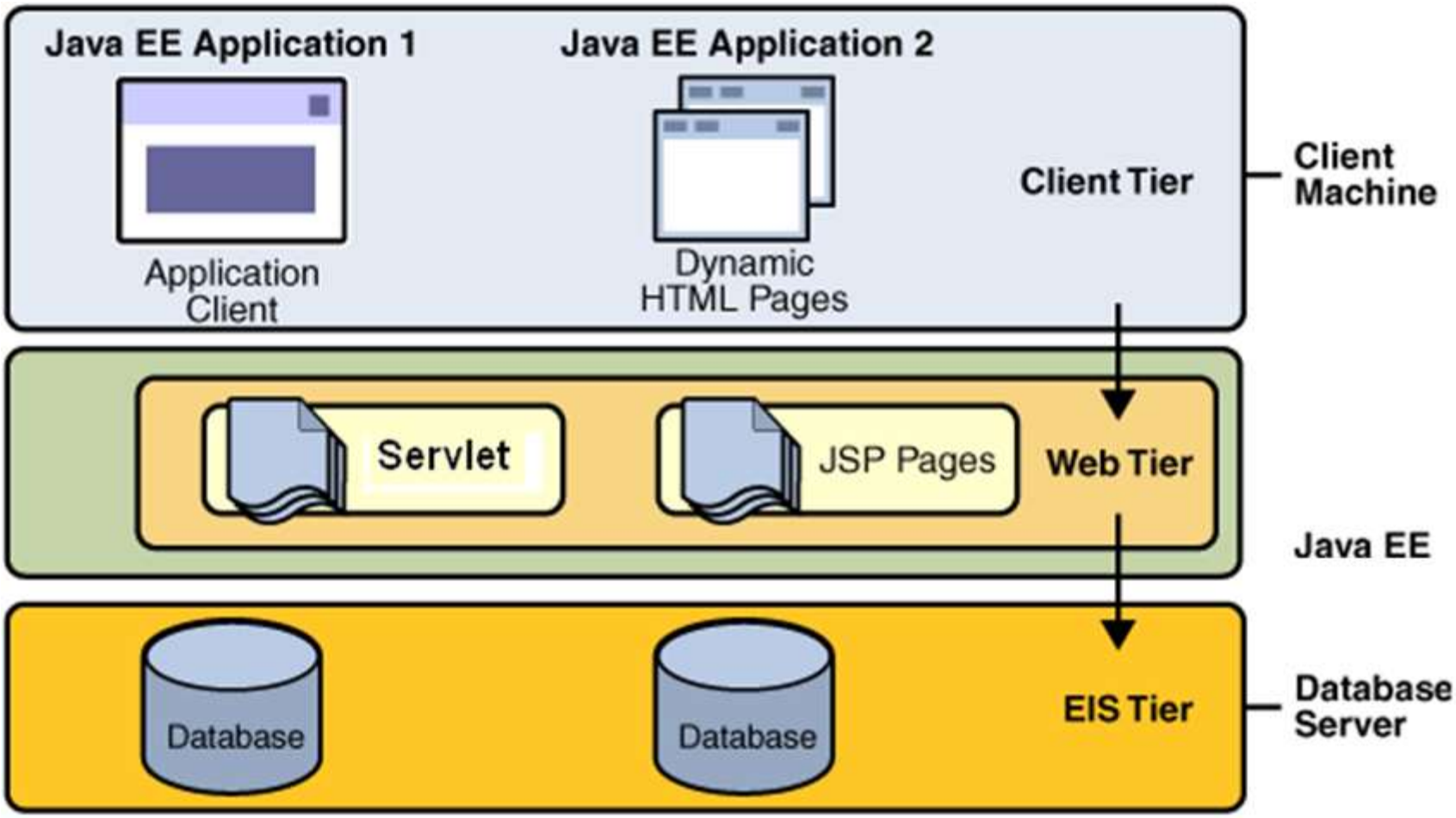
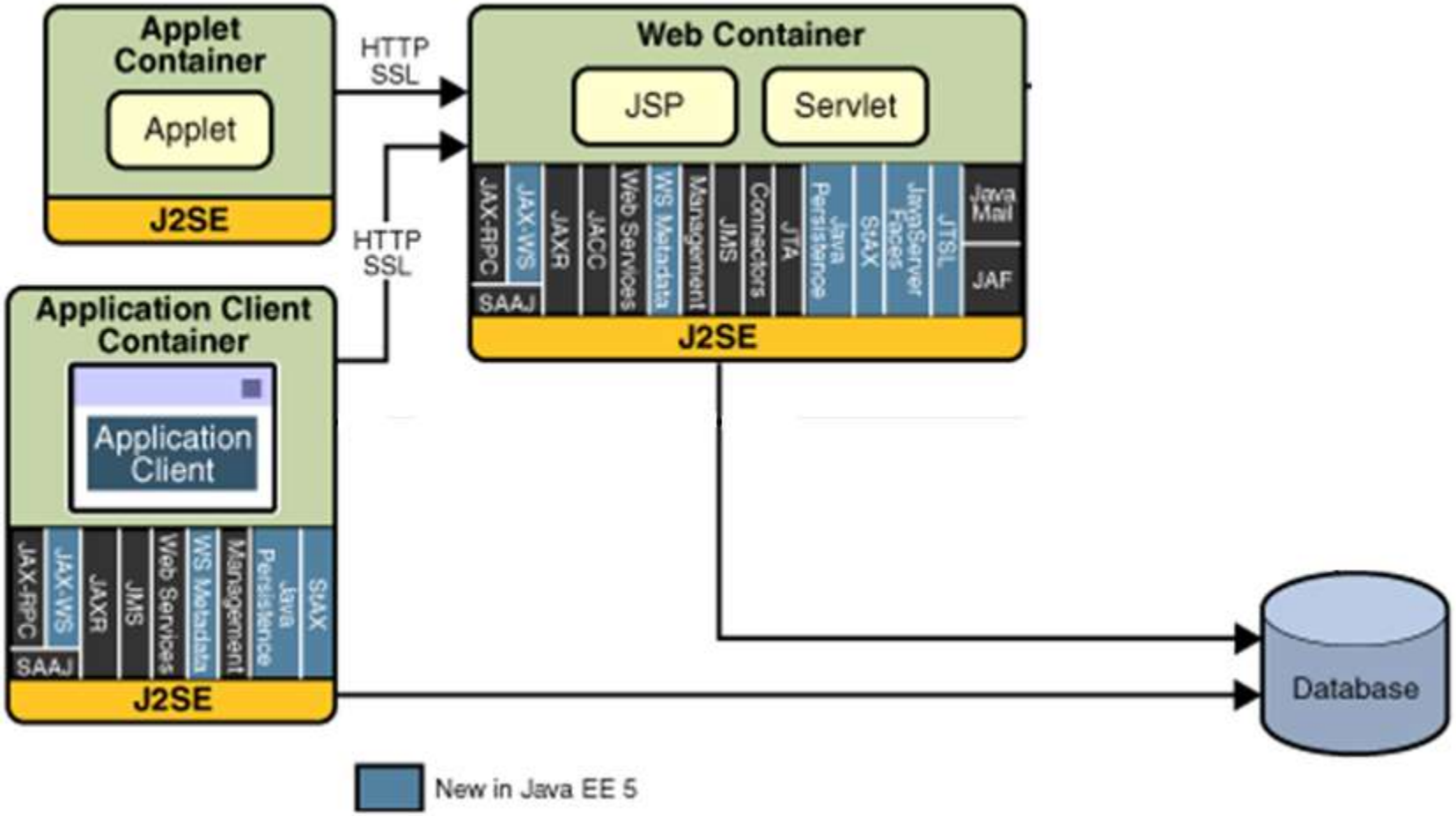


Course Objectives

- **J2EE 1.4/ JavaEE5**/ JavaEE6 Platform API



Course Objectives

- J2EE/JavaEE Technologies

Java EE 6 APIs

- Enterprise JavaBeans Technology
- Java Servlet Technology
- JavaServer Faces Technology
- JavaServer Pages Technology
- JavaServer Pages Standard Tag Library
- Java Persistence API
- Java Transaction API
- Java API for RESTful Web Services
- Managed Beans
- Contexts and Dependency Injection for the Java EE Platform (JSR 299)
- Dependency Injection for Java (JSR 330)
- Bean Validation
- Java Message Service API
- Java EE Connector Architecture
- JavaMail API
- Java Authorization Contract for Containers
- Java Authentication Service Provider Interface for Containers

Java EE 6 APIs in the Java Platform, Standard Edition 6 and 7

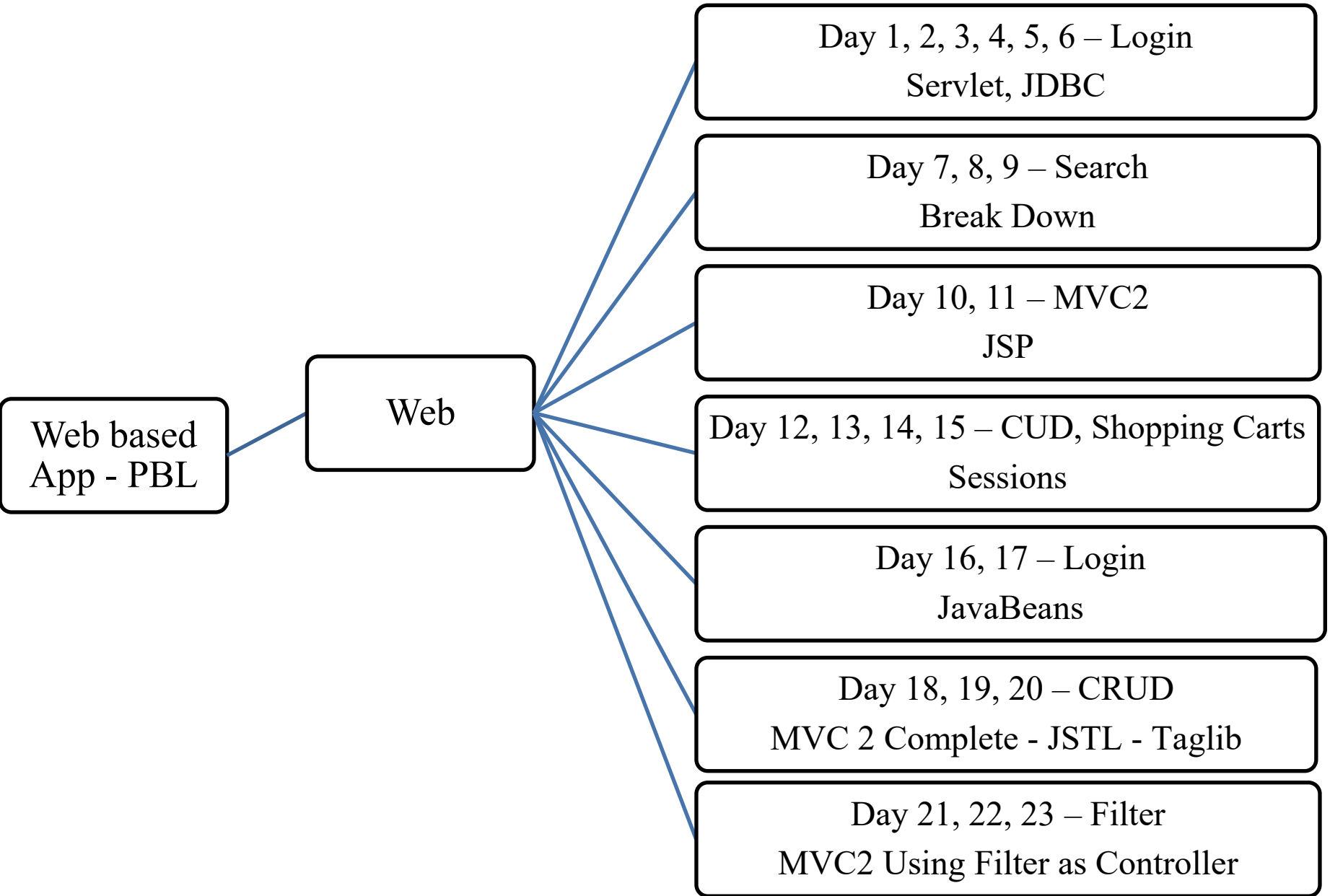
- Java Database Connectivity API
- Java Naming and Directory Interface API
- JavaBeans Activation Framework
- Java API for XML Processing
- Java Architecture for XML Binding
- SOAP with Attachments API for Java
- Java API for XML Web Services
- Java Authentication and Authorization Service

Course Description

1. Servlets Model
2. Web Application Interacting with Database
3. Web Application & Web Container
4. Java Server Pages (JSP)
5. Session Management
6. JavaBeans
7. JSP Tag Libraries – Custom Tags
8. Filters

Course Plan

- **See course plan on LMS**



Course Plan

- See course plan on LMS
- Agenda

1. The Servlet Model
2. Web Application Interacting with Database
3. Web Application & Web Container
4. Java Server Pages (JSP)
5. Session Management, Session & Listener (self-study)
6. JavaBeans
7. JSP Tag Libraries – Custom Tags
8. Filters
9. *Practical test*
10. *Project Presentation*

Materials/ References

- **Required Textbook**
  - Online Text book: Nicholas S. Williams, 2014, Professional Java® for Web Applications, Wrox Press
  - http://library.books24x7.com/toc.aspx?bookid=62587
- **Required References**
  - http://java.sun.com/docs/books/tutorial/jdbc/
  - https://docs.oracle.com/cd/B14099_19/web.1012/b14017/filters.htm
- **References**
  - http://java.sun.com/
  - Fan Page: https://www.facebook.com/TrongKhanh.Kieu/

Learning Environments

- JDK 7 (http://www.oracle.com/technetwork/java/index.html)
  - **Recommend**: JDK 7 Update 51, JDK 8 Update 66
- JDK 7 Documentation
- J2EE 1.4/JavaEE5 Core Patterns
- **NetBeans IDE 8.1/8.2 with supporting JavaEE** (http://www.netbean.org)
- **Bundle Tomcat 8.0.x/7.0.x** (http://tomcat.apache.org/)
- DBMS: **MS. SQL Server 2008/2014/2017** (http://www.microsoft.com/sqlserver/2008/en/us/default.aspx)
- Browser: **Internet Explorer ≥ 8.x**
- Driver Type 4 for MS. SQL Server: **sqlserver4.jar (**http://lms-undergrad.fpt.edu.vn/mod/resource/view.php?id=4566 **)**
- **Team Viewer for supporting**

Course Rules

- **How to conduct**
  - Prepare contents of the next session/ topic at home
  - Following lessons in classrooms and *review previous session at the beginning of class in every day (penalty marks on workshops)*
  - Completing chapter assessments in time and Quizzes (via LMS)
- **Communication**
  - Class
  - Interchange by FU-HCM LMS, Forum
  - Discussing actively in your teams and in classrooms
  - Free to question and answer
- **Others**
  - Off phone
  - Use laptops under teacher's instruction (No game, no chat in class)

Evaluation Strategy

- Must attend more than 80% of contact hours (if not, not allow to take exam).
- **Evaluating**
  - **02 Progress Test (Q)** 10 %
  - **02 Workshop (Lab)** 10 %
  - **01 Assignment (Prj)** 40 %
  - **01 Practical Exam (P)** 20 %
  - **Final Exam (FE)** 20 %
- **Total score**
  - 10% (Q) + 10% (Lab) + 40% (Prj) + 20% (P) + 20% (FE)
- **Pass**
  - Total score ≥ 5 and Final Examination ≥ 4 (of 10)
  - **Every components > 0**
- **Retake** only the Final Exam when not passed

How to study

- This course is **complex knowledge** (**however**, it's **attractive and exciting**), so you need to keep tight grip on it
  - **Read**
    - On the books to get the general concept
    - Reference, study, collection from internet, your classmates, forum …
  - **Attend lectures**
    - Listens, understand, then make your own notes
    - Give your explanation about some topic in lectures
    - Ask questions
    - Give some examples that are not existed in your book
    - Practice all the exercises, demo to make your sense
  - **After classes**
    - Discuss your classmate in directly, on forum
    - Do the lab, assignments to submit via CMS, and do more exercises
    - Build your teams in yourselves to support together in studying

→ Make question to deposit marks for components in progress

How to exam/test

- This course is **required following rules**, so you **need to focus and practice** your exercises and homework in try your best everyday
  - **Progress Tests (if students violate, they take 0 marks)**
    - **No** books and **No** conversations
  - **Practical Exam (if students violate, they take 0 marks)**
    - **Obey requirements and lecturer's recommended in his lecture**
    - **No** internets, **No** emails, **No** chats, **No** conversation
    - **Not copy or paste** from available/previous code.
    - All are try it yourselves **manually**
    - … Nothing else
    - You do only work with **Netbeans IDE** tools and **DBMS. (without configuring svn)**
  - **Workshop/Assignment (if students violate, they take 0 marks)**
    - **Obey requirements and lecturer's recommended in his lecture**
    - **Not** copy (copy code, contents, style)
    - Submission of all source code **does not delete anything**

Academic policy

- Cheating, plagiarism and breach of copyright are serious offenses under this Policy.
  - **Cheating**
    - Cheating during a test, making a project, or an exam is construed as talking, peeking at another student's paper, or any other clandestine method of transmitting information.
    - Cheating during in making lab and assignment as copy source code, copy style, same meaning in progress, …
    - **To verify, student's code in project can be deleted, then he/she must be retyped to make the program running correctly. Or/And make new required functions (Otherwise, he/she takes 0 marks for his/her project/quiz)**
  - **Plagiarism**
    - Plagiarism is using the work of others without citing it; that is, holding the work of others out as your own work.
    - **To verify, student must be described functionality dataflow and how it work (Otherwise, he/she takes 0 marks for his/her project)**
  - **Breach of Copyright**
    - If you photocopy a textbook without the copyright holder's permission, you violate copyright law.

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Enjoy the Course

- Be enthusiastic about the material because it is interesting, useful and an important part of your training as a software engineer.
- Our job is to help you learn and enjoy the experience.
- We will do our best but we need your help.
- So, let's all have fun together with Web-Based Java Applications!!!

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Q & A