

Vietnam and Japan Joint ICT HRD Program

ITSS Software Development **Chapter 10. Confirm Architecture Design**

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Two kinds of Architecture Design

◆ **System Architecture Design:**

- To be designed the system architecture which meet to the **system requirements** by IT Architects in the system architecture design process
- Higher level Application Specialists may design the architecture

◆ **Software Architecture Design**

- To be design the software architecture which meet to the **software requirements** by Application Specialists (with IT Specialists' aid) in the software architecture design process

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System Architecture Design

- ◆ System Architecture Design is done based on the following 2 viewpoints:
 - Functional Requirements: User authentication, display user screen, communication through Internet, business logic (course registration), data store...
→ “Web-Based with DB Architecture”
 - Non-Functional Requirements: Reliability/Fault tolerance, Efficiency/Performance, Usability, Security (a part of functionality?)....
→ “Web-Based with DB Architecture”, duplexing of firewall, duplexing of Web Server for load balancing....

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Confirm Software Architecture Design

- ◆ Usually, in software development process, the main part of system architecture is already designed and given.
- ◆ However, in software development process, it is necessary to confirm the software to keep the requirements

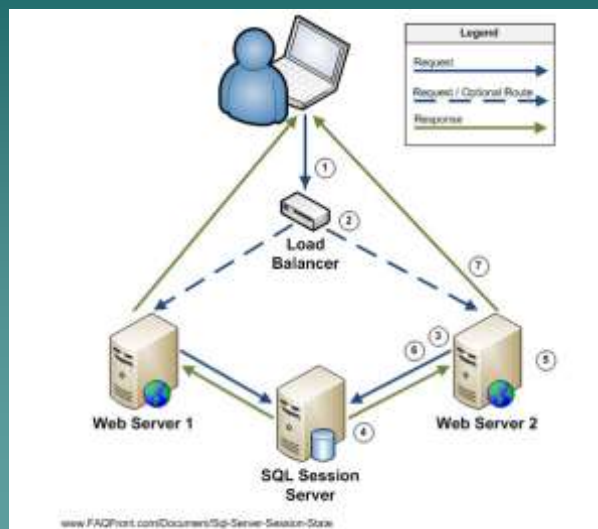
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Use case “Course Registration”

- ◆ *Multiple users must be able to perform their work concurrently. The system shall support up to 50 users to operate simultaneously “Course Registration” operation and all users can receive the result of the operation within 10 seconds*
- ◆ **Response Time:** The amount of time between a request is Submitted and the first response is produced is called response time.

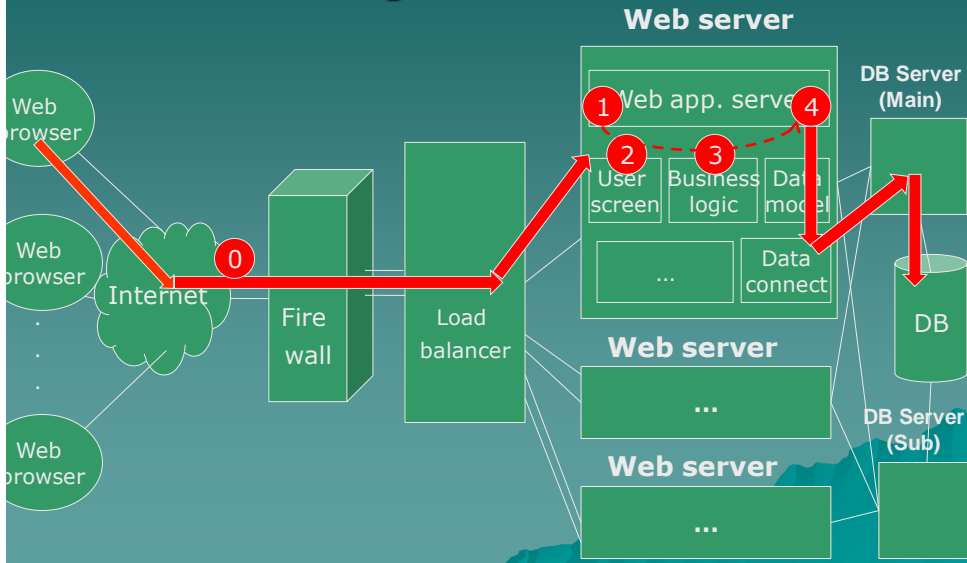
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Web server – Load balancer



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Efficiency/Performance Design/Estimation



Software performance* design and evaluation

*) : "Performance" is general term, is strongly related to "time efficiency" of Quality sub-characteristics

◆ In the **software architecture design process**

- the developer designs or selects the software architecture that meets to the requirements
- the developer evaluate the design is met to the requirements or not!! → Can use prototype

◆ In the program/software test of **Software Integration process**

- the developer evaluate and confirm the software to meet requirements

Question?

