

# NSS

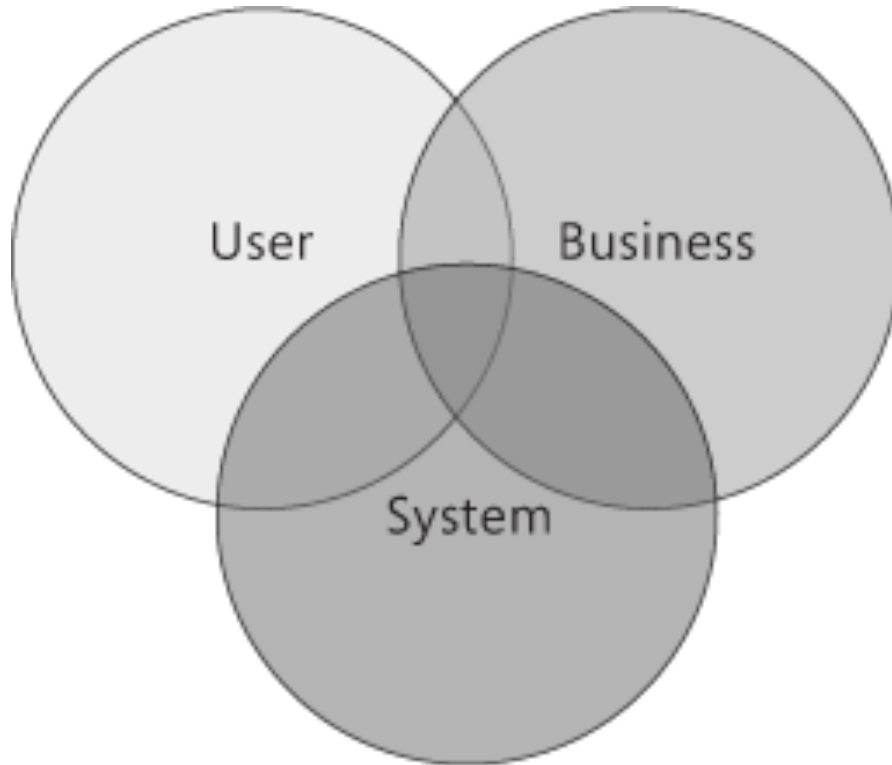
**Architectures**

# Software Architecture

“Software architecture encompasses the set of significant decisions about the organization of a software system including the selection of the structural elements and their interfaces by which the system is composed; behavior as specified in collaboration among those elements; composition of these structural and behavioral elements into larger subsystems; and an architectural style that guides this organization. Software architecture also involves functionality, usability, resilience, performance, reuse, comprehensibility, economic and technology constraints, trade offs and aesthetic concerns.”

(Shaw and Garlan 1996)

# Design Considerations

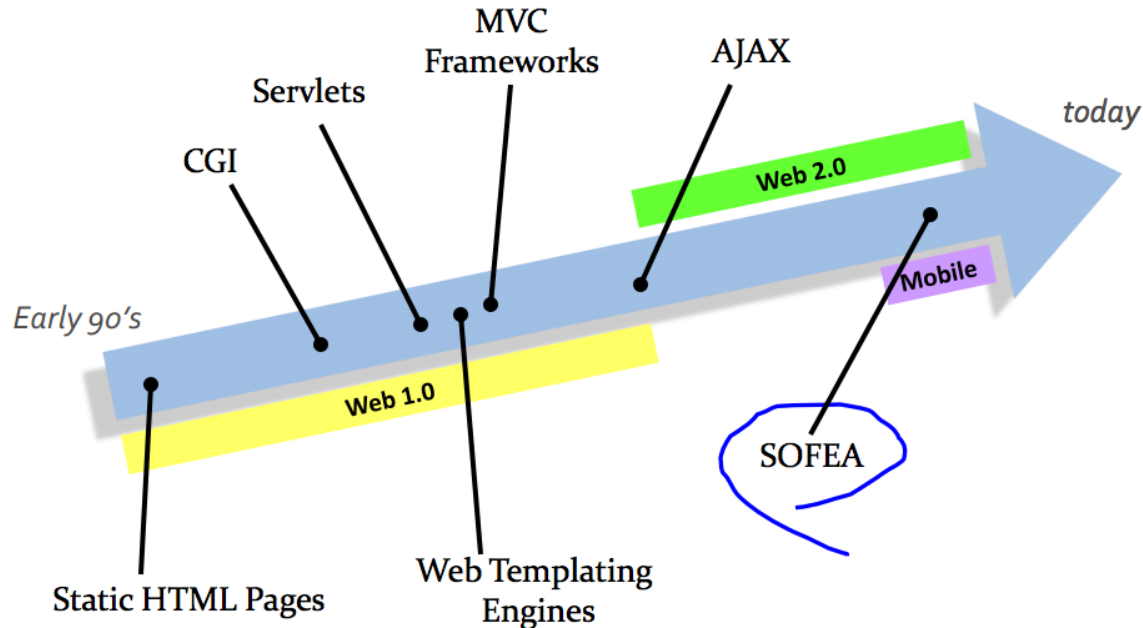


# Architecture should address

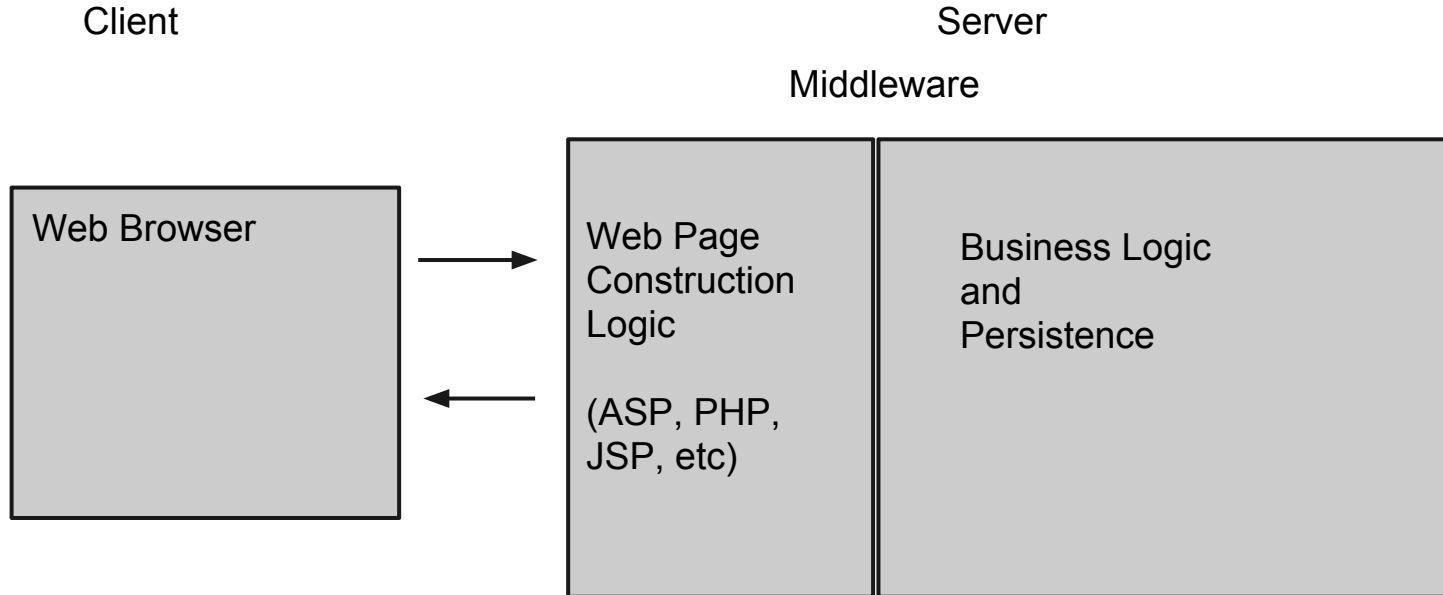
- Expose the structure of the system but hide the implementation details.
- Realize all of the use cases and scenarios.
- Try to address the requirements of various stakeholders.
- Handle both functional and quality requirements.

# Web Application Architectures

## Arc of Web App Architecture History \*



# Traditional Web Architecture



### Presentation tier

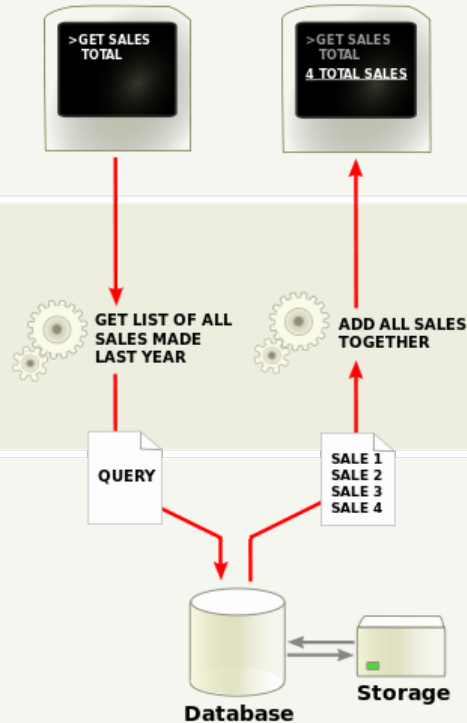
The top-most level of the application is the user interface. The main function of the interface is to translate tasks and results to something the user can understand.

### Logic tier

This layer coordinates the application, processes commands, makes logical decisions and evaluations, and performs calculations. It also moves and processes data between the two surrounding layers.

### Data tier

Here information is stored and retrieved from a database or file system. The information is then passed back to the logic tier for processing, and then eventually back to the user.

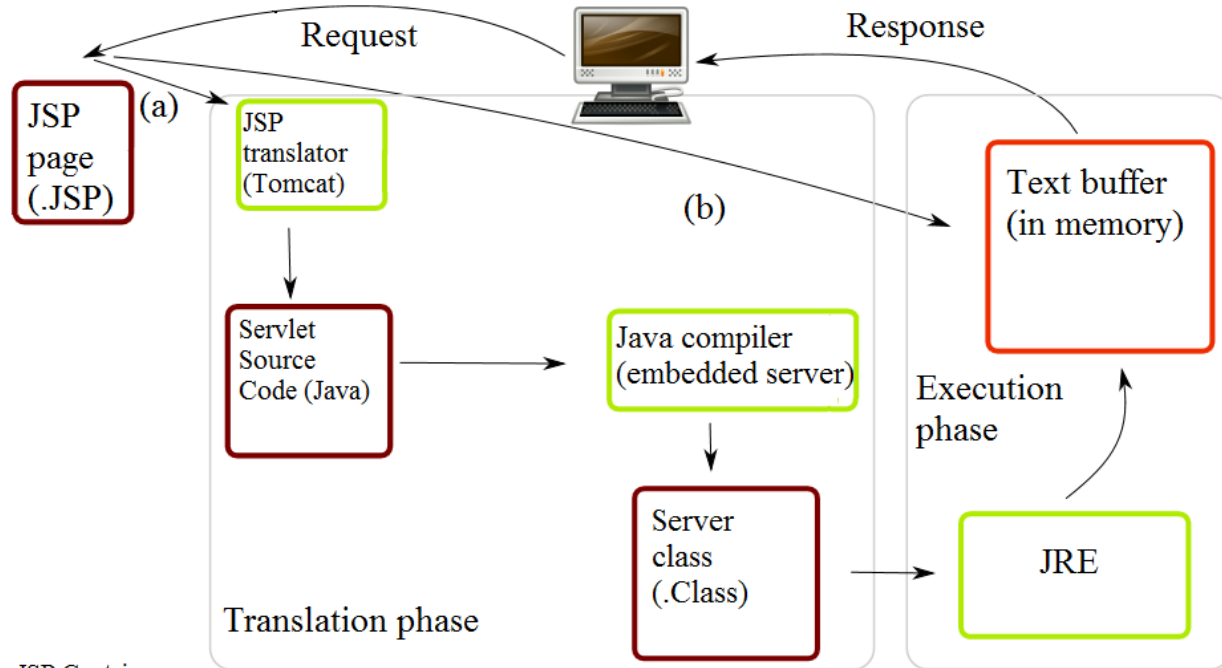


# Common Gateway Interfaces

CGI is a method of obtaining data from or sending data to databases, document or other programs.



# Servlets



JSP Container

(a) Translation occurs at this point, if JSP has been changed or is new.

(b) If not, translation is skipped.

# Web Template Systems

Use combined component web site pieces to generate client specific applications.





Service-Oriented Front-End Architecture