



CS 446 - Tutorial 2

Sept. 24th, 2010

Architecture Document Tutorial



Goals

- Get you comfortable with the architecture document deliverable
- Go over the assignment requirements
- Answer any preliminary questions you have on the deliverable



Goal of the Deliverable

- You are to produce a report that documents the architecture of the software that you propose to develop for your system
 - **PDF format**
- Your target audience is a manager or developer who is somewhat but not intimately familiar with the technologies you might be using or with software architecture.



Title Page

- Title
 - **System Name**
- Group Members
 - **Names, Student IDs, Quest Ids**
 - **Mention your group name too**
- Course Number & Instructor
- Date



Overview

- Give an overview of what's in your report
 - **Highlight the headings of your report**
 - **Give the key focus of each heading**



Architecture

- Give the overall structure of the system
 - **Major components and interactions**
 - Can be subsystems, packages, modules
 - Also include DBs, data files, 3rd party components
 - **Focus on the high level**
 - Do not focus on classes, variables, etc.
 - **Focus on interactions BETWEEN components**
 - Do not focus on interactions WITHIN components



Architecture *Cont'd*

- Explain the functionality of each component
- Explain how your architecture meets your non-functional requirements



Architecture - *Cont'd*

- Relate architecture to the styles discussed in class
 - **Mention two other possible styles & discuss them**
- Do not over complicate your design
 - **System should be easy to understand with simple interfaces between components**



Architecture - Diagrams

- Diagrams are helpful in conveying your ideas
 - **Diagrams alone are pretty useless**
 - **Always include some text explaining your diagram and do not forget to include a legend!**
 - **Can use UML if you want, or any other representation but sure to clearly explain your notation if you are using your own representation.**

Examples

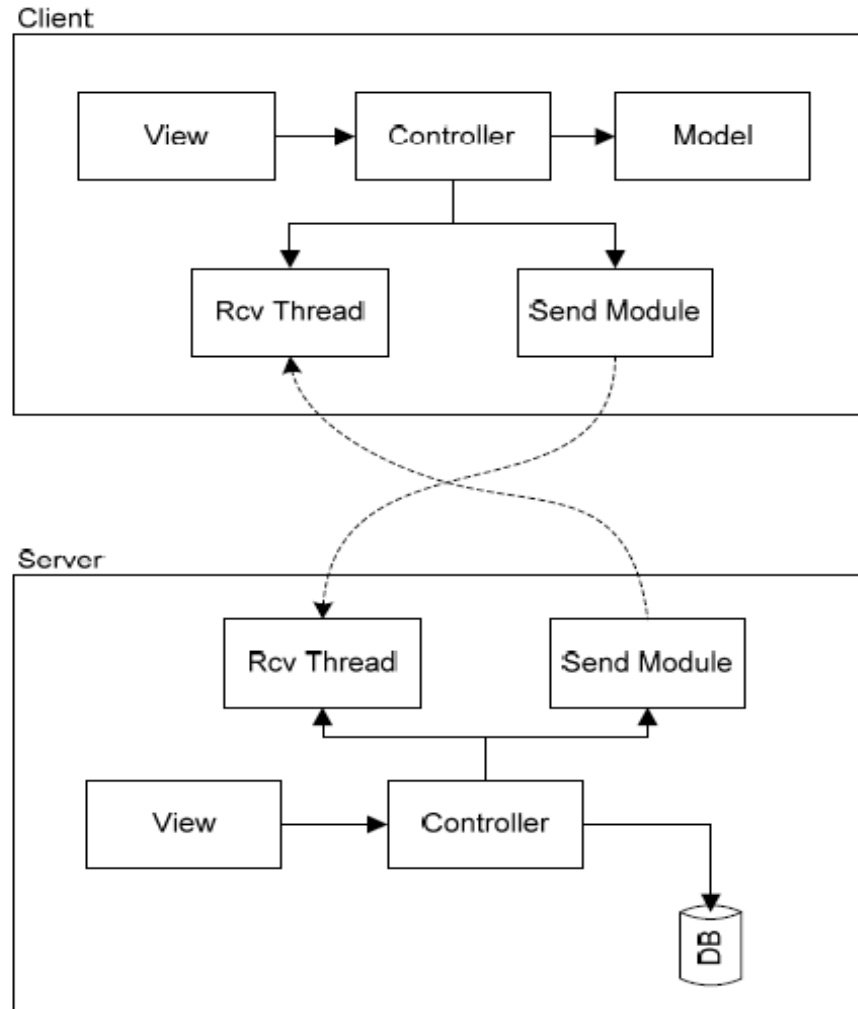
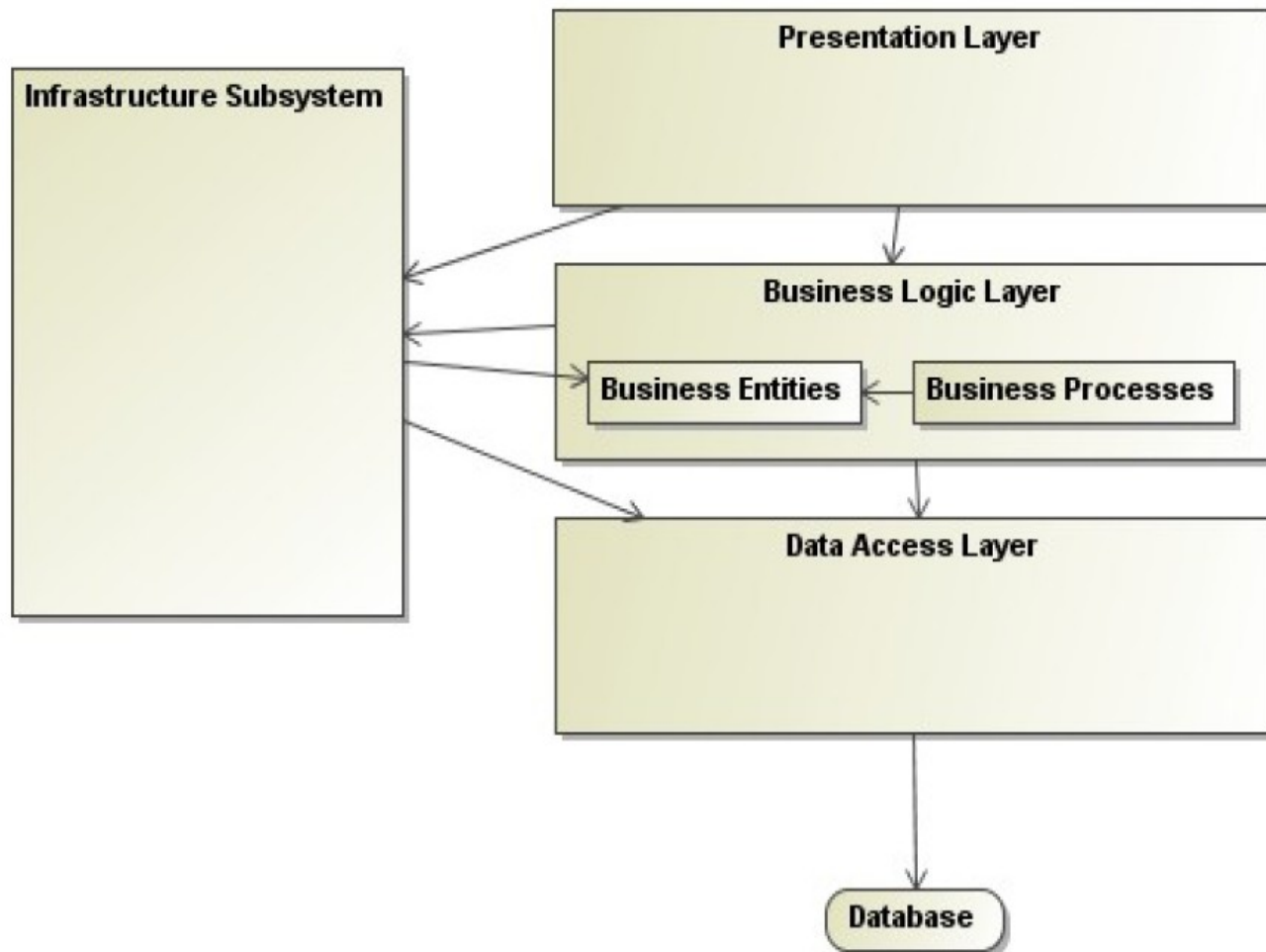
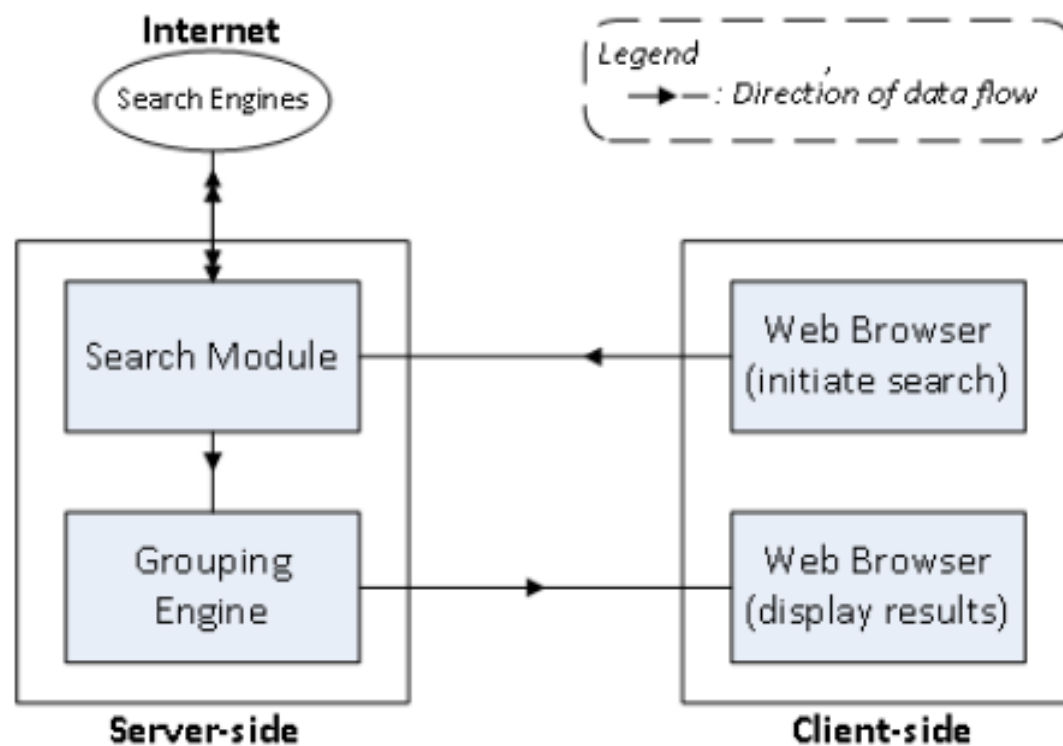


Figure 1. Client and Server applications and modules

Examples



Examples



Examples

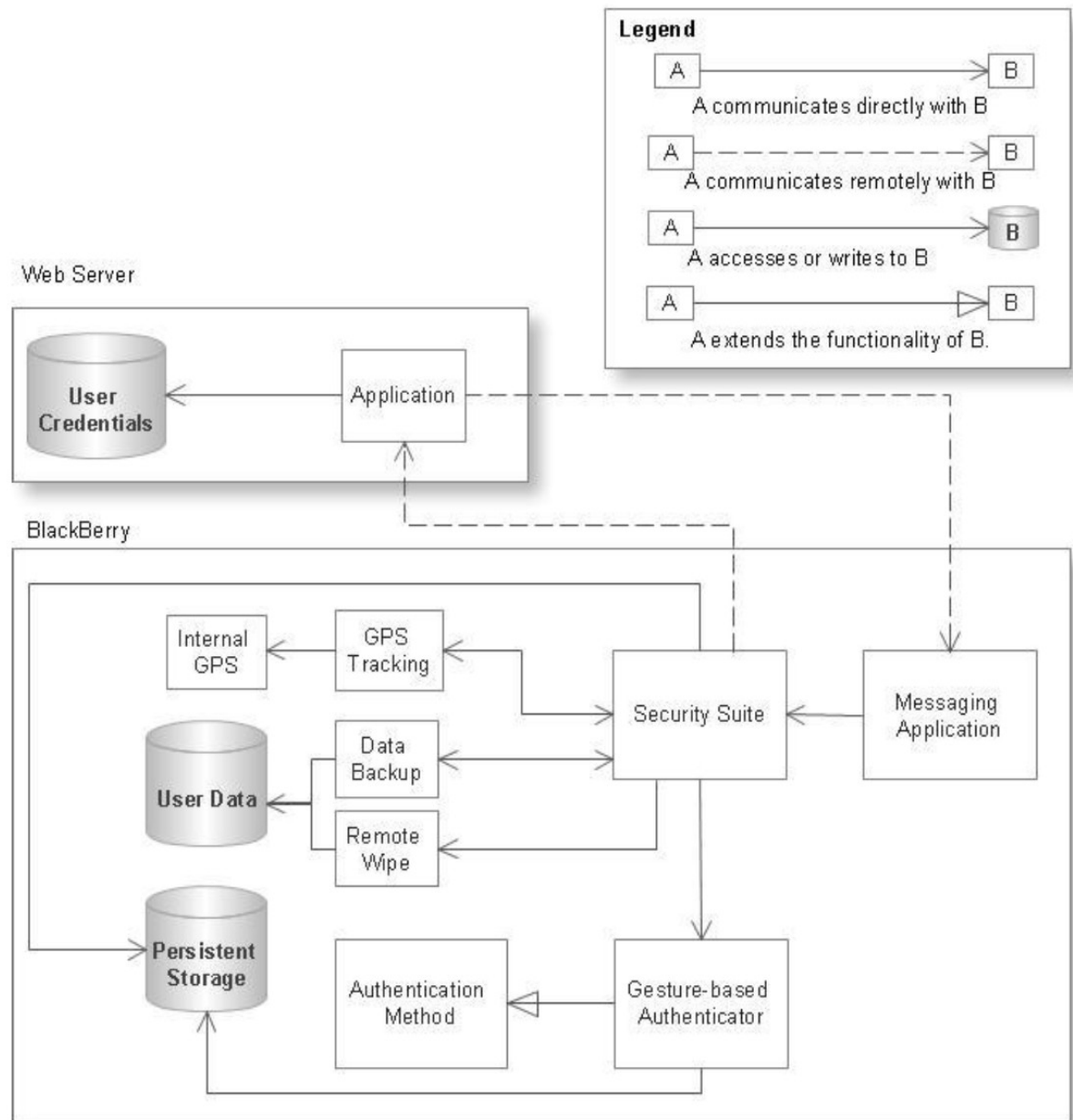


Figure 1: High Level View of Client-Server and Module-Based Architecture **13**



Architecture - Final Thoughts

- There are tools to help with the Diagrams
 - **Microsoft Visio**
 - **Netbeans UML plugin (free)**
 - **Argouml (free)**
- Use meaningful names for your components/modules
- Don't get too low level
 - **But, include any abstractions or utilities that you will use**



Use Cases

- Use the use cases described in your proposal
 - **Explain how these use cases map to your architecture**
 - **Which components in your architecture will implement the functionalities outlined in your use cases**
- Feel free to add more use cases if needed



Methodology

- How do you plan to implement your proposed architecture
 - **Order of design & implementation**
 - **Who will implement each component?**
 - **How will you test it (briefly) ?**
 - **How long will it take ?**
 - **What is your time plan for the rest of the project (Can use a Gantt chart if you want) ?**



Future Considerations

- Can your system accommodate future changes?
 - **What are possible future changes/additions to your system?**
 - **How does your architecture support these changes?**
 - **Is there anything that must be changed in your architecture?**
- What are the key parts of your system?
 - **Are their parts that are more risky than others?**
 - **How are you going to check the feasibility of these parts?**



Personal Component

- Overview of your architecture
 - **Summarize key components/modules & the relationships between them**
 - **What parts will you be involved in?**
 - **What will your role be (designing, implementing, testing etc.)?**
 - **This is should NOT be a simple repetition of the group component**
 - **Should be YOUR overall understanding of the system in YOUR own words**
 - **1.5 pages**



General Tips

- Use heading and subheadings
- Label all diagrams and tables
- Feel free to include a Table of Contents, List of Figures, List of Tables
- Write clearly
 - **Use simple language**
 - **Don't be overly wordy**
 - **Include diagram legends**



Questions ?