Development of Knowledge-based Interpretation and Recommendation (KIR) System

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Agenda

- Motivation
- System Development
  - KIR Windows Application
  - KIR Web Portal
- Future Work
Motivation

- System can be used by Doctors, CFD engineers, Teachers, Students.
- User-Friendly Graphic User Interface (GUI).
- Easy to search information about diseases, diagnostic information on the knowledge database.
- Grid-enabling and integration of the CFD simulation and analysis.
Basic System Requirements

- Provide initial Information about patient
- Be able to CFD modelling and Simulation
- Apply CFD analysis
- Provide full diagnostic information
- Account management
- Common Knowledge-Base management
Interface Development

- Two version
  - Single PC application
  - Web-based Portal
- Development Tools
  - Java
  - Gridsphere (Grid Portal Framework)
  - MySQL
KIR Windows Application

- Need to install on each desktop machine.
- Support both Windows and Unix machines
- Based on Java Swing and MySQL
Upgrade to Web-based Portal

■ **Drawbacks of the PC version**
  ■ Need to install on each machine
  ■ Synchronize the data might be hard
  ■ Only support single user to access

■ **Our solution: KIR Portal**
  ■ Central management on server
  ■ Less requirement for users
  ■ Support multiple users
  ■ Ease development of grid enabling the system utilizing grid portal framework (gridsphere)
KIR Portal

- JSR 168 (Java portlet standard) compliant
- Deploy on Apache Tomcat Server
- Reuse web components provided by gridsphere
  - Such as user authentication
Future Work

- Grid-enable the CFD simulation and analysis
- Provide the facility to prepare, execute and monitor CFD jobs on cluster environment
- Enhance the functionalities of the existing interface
Open Questions and Suggestions on Future Work?