

CSE4/586 Distributed Systems Fall2005
Exam1
October 14, 2005
Time: 1.00-1.50pm

Name:

Person Number:

Instructions:

1. **Please answer all the questions given below.**
2. **This is a closed book exam. However you may use the 2 pages of any information you have prepared as a review for the topics covered in the exam.**
3. **Use the blue books for you answers.**
4. **Do not write an essay. Use lists/enumeration to state the facts and/or your explanation.**

Questions:

1. (40 points) A data warehouse is a distributed system that supports a large distributed data repository and a sophisticated decision support system. Major requirements of data warehousing are discussed below:
 - a. A data replication manager that manages the copying and distribution of databases as defined by the administrator. Data can be from various sources including live feeds. All data received is transformed and cleansed before they are brought into the warehouse.
 - b. An informational database that contains the meta data and also the local data and intelligence.
 - c. An information directory that combines the functions of a technical directory and business directory and information navigator. Its primary purpose is help an analyst determine where the various information are located. Information directory gets its information by discovering and querying meta data repositories above. It needs to keep everything up to date.
 - d. Decision support system that can anything from a simple SQL querying tool to a sophisticated execution information system.

Design a system to meet the need described above. Describe using architecture, protocols, API, implementation and technologies.

2. (15 points) **(Distributed File System)** Describe the architecture and implementation details with any special features of Network File System.
3. (15 points) **(Web services : UDDI)** Describe the architecture of UDDI? How you will use its API to enable services of a business on to the web.
4. (10 points) **(Web Services: Porttype)** What is a porttype with reference to Web services. Explain with an example.
5. (10 points) **(Process state)** Discuss the difference between stateful and stateless servers with examples.
6. (10 points) **(Interprocess communication)** What is remote procedure call (RPC)? Mention an alternative to RPC? When is it advantageous to use the alternative?