

Email Server

Java Classes

Available

AvailableList

EmailServer

FileIO

Globals

Message

NetIO

Record

SearchAndSort

Tree

TreeNode

Utils

Data Files

_accounts.txt

_available.txt

_messages.dat

_rtree.txt

_specs.txt

_stree.txt

Data Files

`_accounts.txt`

- Maintains user identifications and first names
- Each line contains both pieces of information
- Identification and name are joined together
- Identification is of fixed size
- Example 323776272Adam
- Information retrieved at the start of program

Data Files

`_available.txt`

- Maintains record slots available in `_messages.dat`
- Retrieved at start of main program
- Saved at regular intervals
- Saved after server shutdown

Data Files

_messages.dat

- Maintains messages of all clients
- Messages are of variable size
- Messages are broken into fixed sized records
- Records are joined through links
- File is not sorted
- Messages are located with indexing
- File can contain large number of messages
- Each message is saved immediately

Data Files

`_rtree.txt`

- Maintains index of messages by receiver identification
- Maintains pointers to messages in `_messages.dat`
- Allows for very fast access of messages
- AVL tree used as data structure: Balanced binary tree
- Retrieved at start of program
- Saved at regular intervals
- Saved after server shutdown

Data Files

`_specs.txt`

- Maintains the program's settings
- Server's ip-address
- Port number
- Debug switch
- Retrieved at the very beginning of program
- Information accessible only to programmer

Data Files

`_stree.txt`

- Maintains index of messages by sender identification
- Maintains pointers to messages in `_messages.dat`
- Allows for very fast access of messages
- AVL tree used as data structure: Balanced binary tree
- Retrieved at start of program
- Saved at regular intervals
- Saved after server shutdown

Exercise

Using the Java classes and the data files of the next slide,

1. Locate the class that creates each of the data files and draw a red line between the class and the data file
2. Locate each class that accesses a data file, whether it's a read or a write operation, and draw a blue line between them

File Access and Creation

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Dependencies Map

