

Senior Java Developer Homework

Task is to create a tool, using java, that reads an organizational hierarchy into memory and produce stats on demand. Code should be ready to turn over to someone else for maintenance.

Functional Requirements:

Read an org hierarchy data file

- format: orgId, parentOrgId, name
- e.g:
 - 1, null, Foo
 - 2, 1, Bar
 - 4, 3, Baz
 - 5, 2, Qux
 - 3, null, Xyzzy

Read a user data file

- format: userId, orgId, numFiles, numBytes
- e.g:
 - 1, 1, 10, 200

After reading the data files, log the organizational tree to a third file:

- Plaintext output
- Tree order is assumed, parent and then its children, then the next parent
- One line per org:
 - orgId, totalNumUsers, totalNumFiles, totalNumBytes // stats for an org are itself + all of its children
 - Indent child orgs to indicate the tree structure

Internal public api

```
- OrgCollection
  - Org getOrg(orgId)
    // return list of orgs below this node in the tree;
    // inclusive = include orgId within list
  - List<Org> getOrgTree(orgId, boolean inclusive)
- Org
  - int getTotalNumUsers() // return total number of users in this org and any children
  - int getTotalNumFiles() // return total number of files in this org and any children
  - int getTotalNumBytes() // return total number of bytes in this org and any children
  - List<Org> getChildOrgs() // return the immediate children of the org
```

Non-functional Requirements:

- No dependencies other than the jvm (a test framework such as JUnit or TestNG is acceptable)
- Provide source code - please do not send .jar or .class files, they will be rejected by our email system
- Implement a few executable tests.. an exhaustive test suite is not needed
 - Provide your test input file(s)
- Provide directions:
 - How to compile and run your tests
 - How to create/execute a new test of your code with new data files
- Document your thought process
 - Did you make any assumptions? what were they?
 - Why did you do use the algorithms you did? what alternatives were there?
 - What if there were 500 million rows in the data file, would you make any changes? Where would your code break?