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Operating System's

Bug Tracker Project – GitHub Repository: https://github.com/rohansikder/BugReportProject

How to Run:

Run Provider once this is the Server, Run Requester this is the client, you can run many instances of Requester, many clients can run and use the server at once.

Bug.Java, User.Java: Bug and User classes have the getters and setters for creating a bug/User.

BugList.java, UserList.java: Both List classes are similar Creating A separate User/Bug linked list. All the methods in both classes are synchronised so when a client enters a method no other clients can enter the method till the Client is finished. – Comments in code explain all methods

Provider.Java: Provider is the server, in here the Socket is created which the client can connect to. In here there is also both Shared Linked lists for Users and Bugs which all clients have access to, in provider both linked lists are populated using the text files using the readUsers and readBugs methods.

Requester.Java: Requester is the client firstly it connects to the server by creating a new socket and connecting to the server socket. Each client gets their own thread when they start up. The client communicates with the user by sending messages and receiving messages with the server thread using the sendMessage method. I also have a sendLoginVerification this is used to for a Boolean flag to check if the user has logged in.

ServerThread.Java: In serverThread this is where the client messages are passed to. There are 6 Menu Options:

1. *Register*: In here the program asks for all info for registering and then checks if the email is unique and there are not any other accounts which have the same email, if it's the same email as it asks the user to try again, if not then the user is added to the userLinkedList with no bugs Assigned to them. A unique UserID is also created when the user is added to the LinkedList, and then the user details are also outputted to the user.txt file which contains all users.

2. *Login*: In here user enters user login details – it gets checked to see if it is valid, if its valid then a Boolean flag is sent to the client, so it allows the user to access other functionality. If not, Unsuccessful login is showed to client and asked to try again.

3. *Add Bug*: In here program asks for Bug details which the client enters, A unique BugID and Timestamp is created by the server when the bug is added to the linked list. Then it writes all bug details to bugs.txt file which contains all bugs.

4. *Assign Bug to Developer*: In here the program asks for the ID of the bug and the ID of the user, which is going to be assigned, two checks are firstly done to check if that bug and user exists, if they exist the user is then assigned to that bug with the bugID and the status of the bus is changed to ASSIGNED. After the LinkedList is updated, the updateData method is called to update the txt files with the new LinkedList info.

5. *View Unassigned Bug: In here the program calls getUnassignedBugs which returns a string of all bugs that have OPEN or CLOSE status.*

6. *Change status of bug:* In here the program asks for the bugID and the new status, firstly it checks if the bugID exists and if it does it puts the new status to upper case and then updates the status, After the LinkedList is updated, updateData is called to update the bug.txt file with the new information.

users.txt: Each user is stored on a new line and is separated by a comma in the following format:

test,2,test@gmail.com,python,1

- test is the name.
- 2 is the unique UserID.
- test@gmail.com is the email.
- python is the department.
- 1 is the bugID which the user is assigned to – This is 0 when the user is newly created meaning the user has no bug assigned to the user.

bugs.txt: Each bug is stored on a new line and is separated by a comma in the following format:

4,Chrome,2022-11-26:21-29-36,Windows,Crashes when downloading png file,OPEN

- 4 is the unique BugID.
- 2022-11-26:21-29-36 is the time stamp of when the bug was added.
- Windows is the platform.
- Crashes when downloading png file this is the description of the bug.
- OPEN is the status of the bug.