

Overview of the Plagiarism detection system:

1. Admin and Instructor/TA are type of users in this system which will be created through the UserFactory class.
2. First, administrator will add a user to the system. The user will then be stored in the database.
3. When we hit the URL, an object of the PlagiarismApplcation class is created and when the user enters his credentials, using this object, credentials will get validated.
4. When the Instructor/TA wants to access the system, he/she will login to the system, here the PlagiarismApplication class will first validate the credentials entered by user and accordingly give/deny access to the system. A new session singleton session will be created for the user.
5. In our system, we have made use of a Factory design Pattern wherein our FunctionalityFactory provides different type of functionalities that our system can perform, which are as follows:
 - a. File upload
 - b. Review result
 - c. Plagiarism run

This keeps our code flexible to add more specialized functionalities.

6. While using the system, user performs file upload, at that time, the FileUpload class will be called via the factory and the filename + the AST structure of the files will be stored in an array of object of type StudentAssignment.
7. When the user gives the command to start plagiarism check, the StudentAssignment objects will be picked up and compared against all other files. The checkPlagiarismComplete method of PlagiarismRun class will be called here via the factory, and after all files are checked, it will return true and an alert will be displayed to the user stating check is completed.
8. When the check is running, two filenames and the line numbers that are similar in both files will be stored in an object of class Result.
9. User will then give a command to view results via the factory calling the object of class ReviewResults which can be
 - a. View difference between 2 files
 - b. View top 10 similar files
 - c. View report of all files.
10. User can also download the report of the plagiarism check.
11. User will then logout of the system and the session will end.