**Project Problem statement**

**Automated Grading and Feedback Tool for Java**

We want our project to automatically correct, and grade the student program assignments in a timely manner and provide the useful feedback both to the students and to the respective instructor. This software application needs to automatically unzip the assignment files, compile and run them and test with different test cases and compare the resulted output with respective test case results. This software application also needs to check the program structure for proper indentation, comments, wide spaces and finally provides proper feedback and grades for the assignments.

Today we have a manual correction of the student program assignments done by Teaching Assistants and Instructors in many universities. If we continue with this, it will be time-consuming and need to have a number of Teaching Assistants for this job and it is possible that they miss deadlines and might make few mistakes during evaluation.

We will use scripting languages, databases, and data visualization tools and techniques to address this problem. Scripting languages are used to unzip the file, compile the code, run the code and check the program structure. Databases are used to store the necessary data and results to provide feedback to both students and professors. And also, we use databases for analysis purpose. Finally, data visualization tools and techniques used to provide a graphical representation of the information for students to know the progress of their assignments and a combined class information for the instructors to know where to concentrate in upcoming lectures.