

Course Project

Testing a JAVA program for Student Grading



Ain Shams University - Faculty of Engineering
Computer & System Engineering Program
CSE337s: Software Testing– Fall 2025

It is required to build an application for movie recommendation system using **JAVA**. The application requires the following as inputs data:

1. Movie Title: the movie title should be such as every word in the title starts with a capital letter
2. Movie Id: it must contain all the capital letters in the title followed by 3 unique numbers
3. Movie genre: the genre of the movie (horror, action, drama, ...etc)
4. User Name: It must be Alphabetic characters and Spaces. the name should not start with space.
5. User Id: this field must be Alphanumeric characters of exact length of 9 characters. It should start with numbers and might End with only one Alphabetic character. The users' ids must be unique

The application inputs are 2 files (movies.txt, users.txt).

The movies.txt file contains the following:

1. The first line contains the movie title and movie id separated by a comma
2. The second line contains movie genres separated by a comma
3. And so on for every movie

The users.txt file contains the following:

1. The first line contains the user's name and user id separated by a comma
2. The second line contains the movie ids that the user likes separated by a comma
3. And so on for every user

The output of this application is a file named recommendations.txt contains the following:

1. The first line contains the user's name and id separated by a comma
2. The second line contains the movies titles recommended for the user separated by a comma
3. And so on for every user

The recommendation system works as following:

If the user likes a movie from genre X, then the system recommends all other movies in that genre for the user

In case of any error in the inputs file, the output file should contain the error message

Error	Error Message
Error in movie title	ERROR: Movie Title {movie_title} is wrong
Error in movie id letters	ERROR: Movie Id letters {movie_id} are wrong
Error in movie id unique numbers	ERROR: Movie Id numbers {movie_id} aren't unique
Error in user name	ERROR: User Name {user_name} is wrong
Error in user id	ERROR: User Id {user_id} is wrong

In case of multiple errors in the files: only output the first error encountered in the output file

Requirements: Work in groups as early as possible. Each group should be 6 students (same ones of labs). One submission is required by each group.

1. Build the described application using JAVA. Make sure to validate that each of the input is fulfilling the requirement before any processing.
2. You need to test each unit of your application separately.
3. White box, data flow and black bock testing are required
4. Integration testing is required as well

Tips:

To speed up building your application, the following links might help you:

1. <https://codescracker.com/java/program/java-program-read-file.htm>
2. <https://codescracker.com/java/program/java-count-occurrence-of-each-word-in-string.htm>

First delivery due date is: by end of the day of **28th of Nov. 2025** through LMS that **covers only item No. 1 & 2.** It includes:

1. The first version of the application.
2. Set of test case to test **as maximum of the units possible** that validate the input data and the movie recommendations output.
3. Use JUnit to create your testcases
4. Use Jira or Bugzilla to track your bugs
5. Use one of the testcase templates documents to describe your test cases