CST8130: Data Structures

Assignment #3 - Final Grade Calculator

Test Plan

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Section #302 (8:00am to 10:00am Monday)

Assign3 Class

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| **Condition Description** | **Sample** | **Result** |
| Opening the course info file and handling any possible errors. | User enters a file path which does not exist, or a file which they do not have permission to read from. | An appropriate error message is outputted and the main function returns. |
| The course info file is not in the correct format. | User enters a file path which can be successfully opened, but upon reading the file, an InputMismatchException is thrown from one of the following constructors:  Course.Course(Scanner)  GradeCategory.GradeCategory(Scanner)  Assessment. Assessment(Scanner) | An appropriate error message is outputted, the course info file is then closed, and the main function returns. |
| Some other Exception occurs while reading the course info file. | The user deletes the course info file while it is being read from. | An error message is outputted, the course info file is closed. |
| **Everything goes well.** | **User enters a file path which can be successfully opened; data in that course info file is valid.** | **The Course, GradeCategory, and Assessment classes have been successfully constructed, the file is closed, and the program is ready to process individual students from the student file.** |
| Opening the student info file and handling any possible errors. | User enters a file path which does not exist, or a file which they do not have permission to read from. | An appropriate error message is outputted and the main function returns. |
| The student info file is not in the correct format. | User enters a file path which can be successfully opened, but upon reading the file, an InputMismatchException is thrown from one of the following methods:  Course.processStudent(Scanner)  GradeCategory.processCategory(Scanner)  Assessment.processAssessment(Scanner) | An appropriate error message is outputted and the main function returns. The student info file is closed. |
| Some other Exception occurs while reading the student info file. | The user deletes the student info file while it is being read from. | An error message is outputted, the student info file is closed. |
| **Everything goes well.** | **User enters a file path which can be successfully opened; data in that student info file is valid.** | **The program keeps reading individual students from the file until all students are processed.** |

Course Class

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| **Condition Description** | **Sample** | **Result** |
| Invalid data read when processing the course info file in the constructor. | There was an alphabetic digit instead of a number when calling Scanner.nextInt(), or an InputMismatchException was thrown by GradeCategory.GradeCategory(Scanner). | This exception travels up the stack to main() where it is handled, the program should quit. |
| Invalid data read when processing the student info file in the processStudent() method. | There was an Exception thrown by GradeCategory.processCategory(Scanner). | This exception travels up the stack to main() where it is handled, the program should quit. |
| **Invalid data read when processing the student info file in the processStudent() method.** | **There was an Exception thrown by GradeCategory.processCategory(Scanner).** | **This exception travels up the stack to main() where it is handled, the program should quit.** |

GradeCategory Class

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| **Condition Description** | **Sample** | **Result** |
| Invalid data read when processing the course info file in the constructor. | There was an alphabetic digit instead of a number when calling Scanner.nextInt(), or an InputMismatchException was thrown by Assessment.Assessment(Scanner). | This exception travels up the stack to main() where it is handled, the program should quit. |
| Invalid data read when processing the student info file in the processCategory() method. | There was an Exception thrown by Assessment.processAssessment(Scanner). | This exception travels up the stack to main() where it is handled, the program should quit. |

Assessment Class

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| **Condition Description** | **Sample** | **Result** |
| Invalid data read when processing the course info file in the constructor. | There was an alphabetic digit instead of a number when calling Scanner.nextFloat(). | This exception travels up the stack to main() where it is handled, the program should quit. |
| Invalid data read when processing the student info file in the processAssessment() method. | InputMismatchException thrown by Scanner.nextFloat(). | This exception travels up the stack to main() where it is handled, the program should quit. |