COMI 2510 Advanced Programming and Design
Assignment 4

For this project, you will be reading data from a text file, processing it, and writing it out to another text file. A sample text file is provided. This is not necessarily the file I will use to test your program.

You do not know and may not assume the number of lines of text in the file. Each line of text will be referred to here as a record.

At the end of this document are images of three sample text files. A text file represents the grades submitted for an individual course. Each line of the file represents one student's grade.

The file is tab-delimited. Each line of the file is a single grade record for a semester at a fictitious college. Each record consists of a course number (at CCRI we call this a CRN), e.g. 4750, the department code, e.g. ACC, the department, e.g. Accounting, the name of the course (note that there might be a space in the name), e.g. Business Accounting, the course, e.g. ACC101, the grade, e.g. A-, and the section number, e.g. 001.

When your program has finished running, the output file should be a tab-delimited summary of course data. The output file for each of the sample files given at the end of this assignment would look like:

File 1:

Course No.	Subject	Course	Course Title	A	A-	B	B-	B+	C	C+	D	D+	F	I	W	Transfer	Passing
4750	Accountin	ACC101	Business Accounting	6	2	0	1	2	0	1	0	0	1	0	0	12	12

Enlarged:

Course No.	Subject	Course	Course Title	A	A-	B	B-
4750	Accountin	ACC101	Business Accounting	6	2	0	1

B+	C	C+	D	D+	F	I	W	Transfer	Passing
2	0	1	0	0	1	0	0	12	12

File 2:

Course No.	Subject	Course	Course Title	A	A-	B	B-	B+	C	C+	D	D+	F	I	W	Transfer	Passing
3157	Biology	BIO320	Anatomy	4	2	1	1	0	1	1	1	1	1	0	1	10	12

File 3:

Course No.	Subject	Course	Course Title	A	A-	B	B-	B+	C	C+	D	D+	F	I	W	Transfer	Passing
3494	Business	BUS251	Marketing Fundamentals	2	3	0	1	1	1	0	1	0	0	0	0	8	9

These have been imported into Excel, which is easy to do with a tab-delimited text file.

The output is a summary of the input file in which each of the grades in the course have been counted (i.e. how many A's, how many A-'s, etc.)

Two columns are added by the program: "Transfer" and "Passing." Transfer is the number of grades in the course that are C or higher. Passing is the number of grades in the course that are D or higher. Your

program should compute these sums and write them to the output text file. Note that the output text file also includes a tab-delimited header line.

Program this system in Java. Use an Array or ArrayList class.

Hand in your completed project code.

File 1:

```
4750    ACC Accounting  Business Accounting ACC101  A-  001
4750    ACC Accounting  Business Accounting ACC101  B+  001
4750    ACC Accounting  Business Accounting ACC101  B-  001
4750    ACC Accounting  Business Accounting ACC101  A   001
4750    ACC Accounting  Business Accounting ACC101  A   001
4750    ACC Accounting  Business Accounting ACC101  B+  001
4750    ACC Accounting  Business Accounting ACC101  A-  001
4750    ACC Accounting  Business Accounting ACC101  A   001
4750    ACC Accounting  Business Accounting ACC101  A   001
4750    ACC Accounting  Business Accounting ACC101  F   001
4750    ACC Accounting  Business Accounting ACC101  A   001
4750    ACC Accounting  Business Accounting ACC101  C+  001
4750    ACC Accounting  Business Accounting ACC101  A   001
```

File 2:

```
3157    BIO Biology Anatomy BIO320  A   001
3157    BIO Biology Anatomy BIO320  W   001
3157    BIO Biology Anatomy BIO320  D+  001
3157    BIO Biology Anatomy BIO320  D   001
3157    BIO Biology Anatomy BIO320  F   001
3157    BIO Biology Anatomy BIO320  B   001
3157    BIO Biology Anatomy BIO320  A-  001
3157    BIO Biology Anatomy BIO320  A-  001
3157    BIO Biology Anatomy BIO320  A   001
3157    BIO Biology Anatomy BIO320  B-  001
3157    BIO Biology Anatomy BIO320  A   001
3157    BIO Biology Anatomy BIO320  C   001
3157    BIO Biology Anatomy BIO320  A   001
3157    BIO Biology Anatomy BIO320  C+  001
```

File 3:

```
3494    BUS Business    Marketing Fundamentals  BUS251  C   006
3494    BUS Business    Marketing Fundamentals  BUS251  A   006
3494    BUS Business    Marketing Fundamentals  BUS251  A-  006
3494    BUS Business    Marketing Fundamentals  BUS251  D   006
3494    BUS Business    Marketing Fundamentals  BUS251  A   006
3494    BUS Business    Marketing Fundamentals  BUS251  A-  006
3494    BUS Business    Marketing Fundamentals  BUS251  B+  006
3494    BUS Business    Marketing Fundamentals  BUS251  B-  006
3494    BUS Business    Marketing Fundamentals  BUS251  A-  006
```

Assignment 4 Rubric

Component		Quality			
		Exceptional	**Acceptable**	**Amateur**	**Unsatisfactory**
	Run-time specifications 63%	63 pts: The program meets all of the run-time specifications, with no additional unspecified functionality.*	50 pts: There is additional unspecified functionality or the program produces incorrect results in no more than 5% of the customer's tests.	25 pts: The program produces incorrect results in no more than 10% of the customer's tests.	10 pts: The program produces incorrect results in more than 10% of the customer's tests.
	Design specifications 25%	25 pts: The program is a well-designed object oriented system using arrays.	20 pts: Design mostly meets specifications but is awkward in places.	12 pts: Design can be improved.	5 pts: Arrays are not integral to the functionality of the program.
	Documentation 12%	12 pts: The program contains comments including the programmer's name and date. Javadoc comments are included as shown in the text for all classes. There are block comments (as many as necessary) for each distinct block of code which accurately describe what the block is accomplishing.	9 pts: The header comment is incomplete but contains name and date, and/or the block comment(s) aren't clear. Javadoc comments are missing components less than 10% of the time.	6 pts: The documentation partially meets the exceptional guidelines with several poorly written comments and/or missing comments or missing components less than 25% of the time.	2.5 pts: 25% or more of the comments are missing or unhelpful.

*If you want to change the functional specifications of the program in any way, you must clear it with your customer (the instructor) in writing prior to making the changes. Include documentation of the specification changes when you submit your program.