159.272 Programming Paradigms

Tutorial 2: cvs2html

Objectives

1. explore and use APIs in the Java API, in particular java.io
2. use runtime parameters

Deadline

- see stream
- no late submissions allowed

Instructions

Your task is to create a converter that can transform csv[1] files containing student data into html files.

1. download students.csv from stream
2. create an Eclipse project
3. copy students.csv into the Eclipse project folder
4. in this project, create a package nz.ac.massey.cs.pp.tutorial2.id<yourstudentid>, replace <yourstudentid> by your student number, like nz.ac.massey.cs.pp.tutorial2.id42
5. within this package, create a class CSV2HTMLConverter
    1. this class is executable, i.e. it has a main method
    2. the main method has two parameters:
        1. the first parameter is the name of an csv input file
        2. the second parameter is the name of an html output file
    3. that means that you can run the program as follows:
    java nz.ac.massey.cs.pp.tutorial2.id42.CSV2HTMLConverter students.csv students.html
    4. the output is a simple html file, with student data stored in a table.
    5. an example output file students.html can be downloaded from stream – do not include this file in your project
6. create a class Student within the same package
    1. each row in the input csv file should first be converted to an instance of Student
    2. then all Student instances are converted into html

Deliverables

1. export your Eclipse project as follows to a zip file:
    1. in Eclipse, select Project, then select File > Export > General > Archive File
    2. once the project has been exported, check the zip file created (use WinZip, 7Zip or similar) to make sure that the sources code files, students.csv, .project and .classpath are all included. .project and .classpath might not be visible, you may need to enable "show hidden files" in your zip tool or OS file explorer.
2. upload this zip file to stream

1 CSV stands for comma separated file – this is a popular simple file format to store tabular data. Most spreadsheet programs like OpenOffice and MS Office can import/export CSV files.

Prerequisites

This is what I expect **internal** students to know **before** they come to the tutorial. This means that I expect internal students to prepare for this tutorial. Failure to do so may result in the tutorial being marked as 0. The reason for this is that we cannot afford to waste time in the labs.

Students are expected to:

1. create Eclipse projects
2. create classes
3. use packages
4. understand basic Java syntax rules

Grading

1. this tutorial is worth 1%
2. the maximum number of points you can get is 2 (this will be scaled to allow for half points)
3. internal students have to submit **and** to physically attend the tutorial to get points – make sure your name is signed off by the lecturer or tutor before you leave the lab

Hints

1. to find out how a class works, google for the fully qualified class name, and go to http://docs.oracle.com/javase/7/docs/api/
2. classes you might find useful to read from text files line by line:
    1. java.io.BufferedReader, in particular the method readLine
    2. java.util.StringTokenizer , this will be useful to parse a single lines
3. classes you might find useful to write text to files:
    1. java.io.FileWriter
4. in these classes, check for inheritance:
    1. a class also supports methods inherited from its superclass
    2. if you look for a method like foo(String), you can also use methods that work on superclasses of String, like foo(CharacterSequence)
5. many io (file-) related classes have methods that declare exceptions. We did not yet discuss exception handing in the lectures, but you can ignore this by adding the following clause to all method declarations (including the main method!):
   void foo(..) **throws Exception**
6. if you reference files without the full path name ("students.csv", and note "c:/temp/students.csv"), your java program will look for these files in the project folder (do not hardcode file names in the main method ! they are supplied as parameters)