Seneca College

March 05, 2020

Applied Arts & Technology
SCHOOL OF COMPUTER STUDIES

JAC444 Final Code and Demo Date: March 13, 2020

Workshop 7

Notes:

i. Each task should be presented during the lab, demo worth 70% of the workshop marks and code uploading worth the other 30%.
ii. Make sure you have all security and check measures in place, like wrong data types etc., implement proper Exception Handling techniques
iii. Given output structure is just for student to have a glimpse what the output can look, students are free to design the output better in any way.
iv. The final code as zip should be submitted by the midnight to avoid late penalties which are 10% each day late.
v. The workshop will be marked as follows:
    a. Proper naming of the class/s expected.
    b. Proper documentation for all the class/s, method/s etc. used.
    c. Clear naming for the variables, class/s, methods expected.
    d. Output should be clear, and sentences should make sense.
    e. Clear all debugging fields, data, line etc. used in the code.

Other inputs can be given during demo, so make sure you test your program properly.

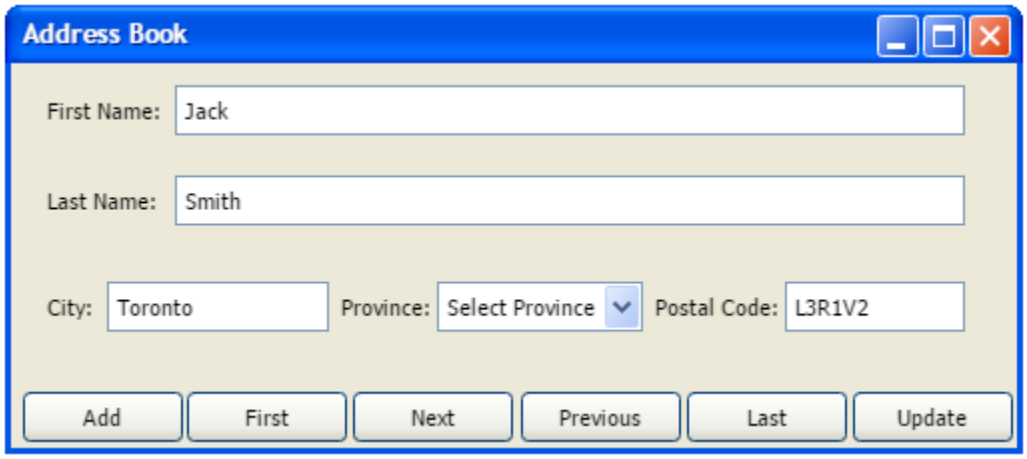
Task 1: The following workshop is based on some research as well.
Research Part:

During the lecture and in the workshop 5 you have practiced different concepts on

- How to read a file.
- How to write a file.
- Mostly everyone has practiced FileReader or FileWriter, FileInputStream or FileOutputStream, Buffered Readers etc.
- This particular workshop required you to first search on **RandomAccessFile,**
    - Advantages.
    - Where to use it.
    - How to use it.

Once you have read about the advantages and disadvantages of the RandomAccessFile in java then you can start the coding for the workshop.

Coding Part:
Write a program that stores, retrieves, adds and updates addresses as shown in the figure below. Use ***random access file*** for reading and writing an address. When the program starts your files should contains minimum 5 proper records **[make sure the added records are proper not some random strings and/ or postal code etc]**.
Hint: Use fixed-length string for storing each attribute in the address.



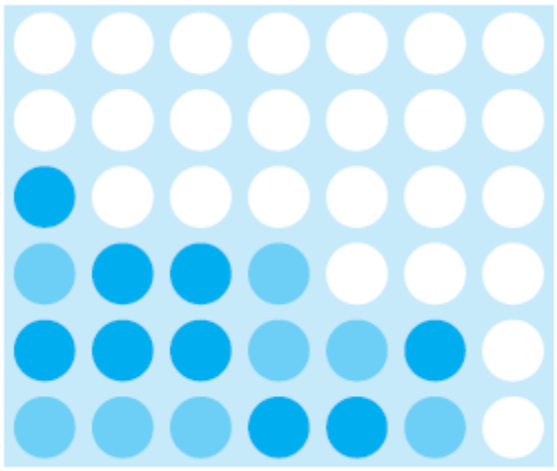
Deliverables: there will be two different deliverables for this workshop.

1. A word document includes your findings about Random Access File. [1.5%]
    a. Advantages
    b. Disadvantages
    c. Usage.
    d. Syntax.
    e. Constructors
    f. Methods

    Note: Also include your references from where you search.
2. Code for the application. [3.5%]

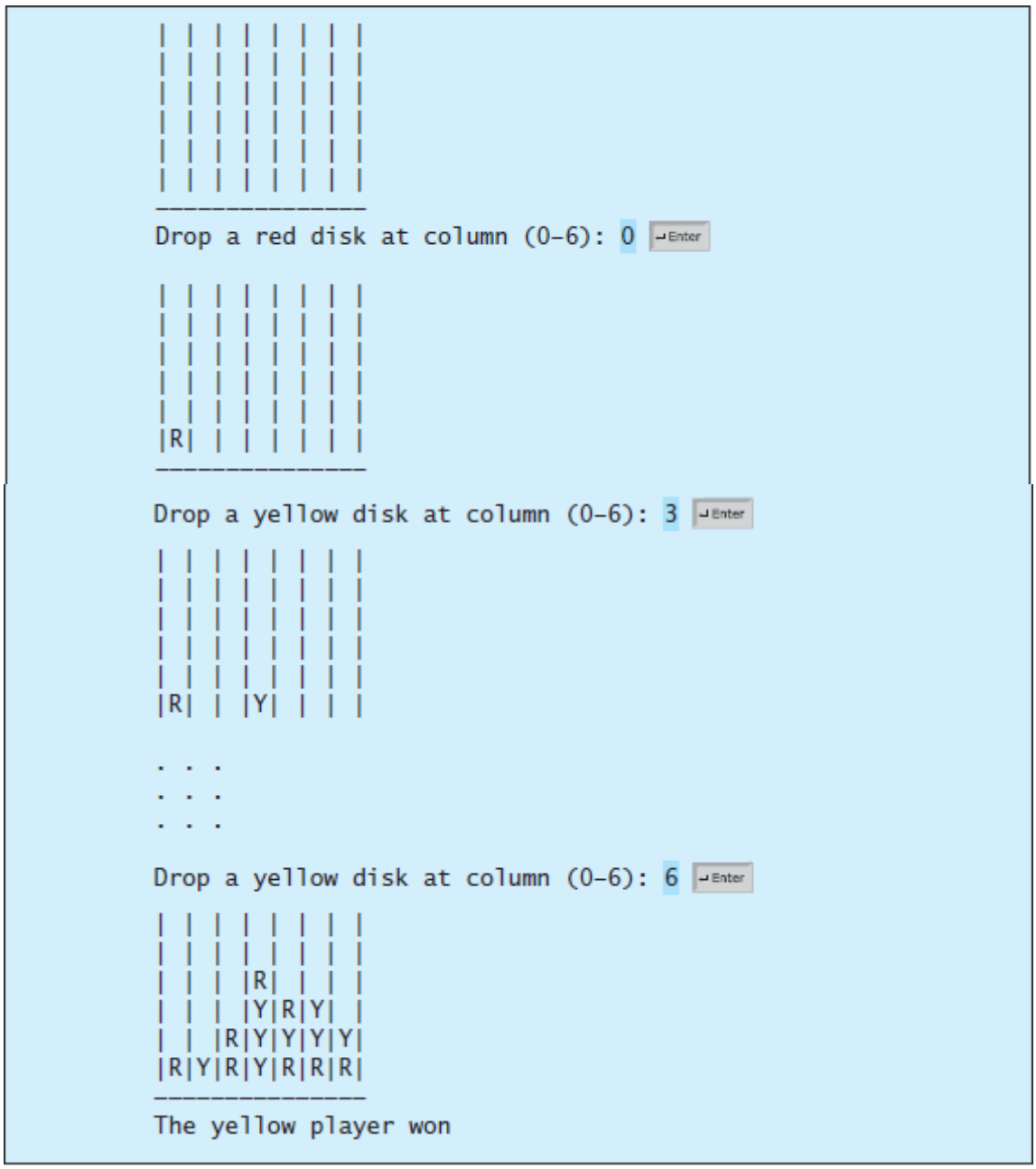
Upload both in one zipped or Rar or 7zip or jar file formats on the blackboard.

Task 2: (Game – Connect four) (Students can implement the game with JavaFX or without)
Connect four is a two-player board game in which the players alternately drop colored disks into a seven-column, six-row vertically suspended grid, as shown below.



The objective of the game is to connect four same-colored disks in a row, a column, or a diagonal before your opponent can do likewise. The program prompts two players to drop a red or yellow disk alternately. In the preceding figure, the red disk is shown in a dark color and the yellow in a light color. Whenever a disk is dropped, the program redisplays the board on the console and determines the status of the game (win, draw, or continue). Here is a sample run:

(continue on the next page)



Drop a red disk at column (0–6): 0 Enter
R						

Drop a yellow disk at column (0–6): 3 Enter
R			Y			
. . .
. . .
. . .
Drop a yellow disk at column (0–6): 6 Enter
			R			
			Y	R	Y	
		R	Y	Y	Y	Y
R	Y	R	Y	R	R	R

The yellow player won