
ASSIGNMENT 04

CLO – 4

POINTS: 30

It is Ali's birthday today. His parents have arranged a big birthday party at home tonight. All his friends and cousins are invited. For the party, Ali's father has arranged the chairs in R rows and C columns.

When the party begins, Ali's mother decided to distribute chocolates to all kids. She gives the box of chocolates to one of the kids sitting at one of the corner chairs: (1,1), (1,C), (R,0), or (R,C). Kids must pick one chocolate and hand the chocolate box over to the next kid. The next kid can be any kid sitting to the left, right, in the front, or at the back. For handing over the chocolate box to the next kid, following rules must be followed by all the kids. These rules are written in the order of their priority.

Rules:

1. If there is a kid in the right, who has not so far pulled out a chocolate from the box, the box must be moved to the right, i.e. (n, m+1).
2. If there is a kid in the left, who has not so far pulled out a chocolate from the box, the box must be moved to the left, i.e. (n, m-1).
3. If there is a kid in the front, who has not so far pulled out a chocolate from the box, the box must be moved to the front, i.e. (n-1, m).
4. If there is a kid at the back, who has not so far pulled out a chocolate from the box, the box must be moved to the back, i.e. (n+1, m).
5. If all the kids in the left, right, front, and back have already taken a chocolate, the kid, who has the box, will say out loud "UP!!"

Ali is being very impatient and wants to know whether he would say "up" or move the box along. If he would have to hand over the box, then he wants to know the direction (left, right, front, back) in which he will move it.

Please help Ali !!

Suppose Ali is sitting at chair (x, y).

Below is the sample information/data that you need to take from the user. Please follow the EXACT format, including how user will enter the values!! For example, the values of R and C must not be taken from user separately. The values must be comma-separated. This is true for all other user inputs.

Sample run 01:

Please enter values of R and C: 3,3

Please enter the corner kid who will first receive the chocolate from Ali's mother: 1,1

Please tell where Ali is sitting: 3,3

Ali will say "UP" !!

Sample run 02:

Please enter values of R and C: 2,3

Please enter the corner kid who will first receive the chocolate from Ali's mother: 1,3

Please tell where Ali is sitting: 2,2

Ali will move the box to the RIGHT!

LAB ASSIGNMENT 04

CLO – 3

POINTS: 10

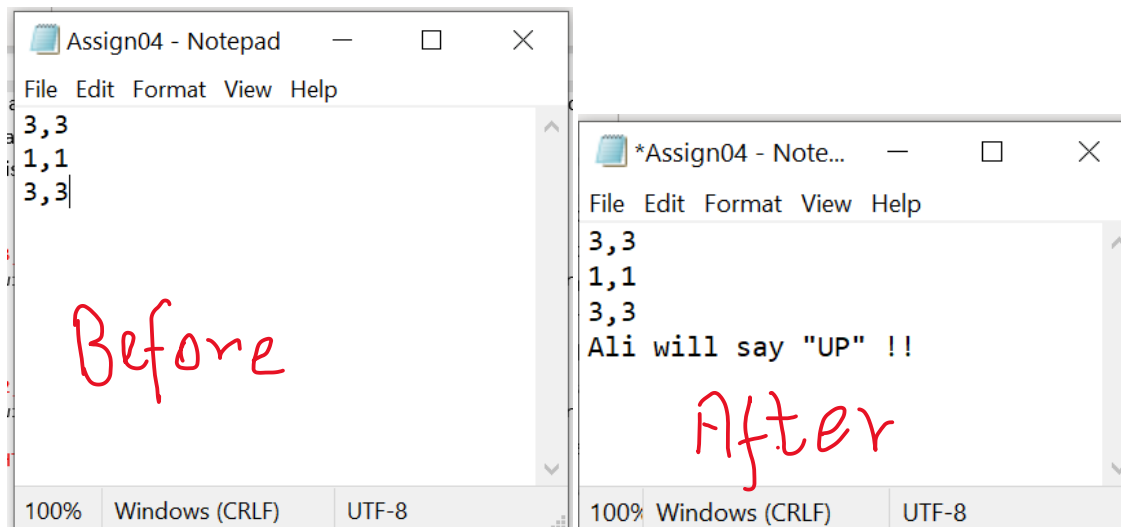
For the above scenario, you are required to include Text I/O in the above code. The rules are as follows:

1. Use one file only for reading and writing.
2. The data must not be over-written when you write to the file.
3. The information about R, C, corner kid, and Ali's chair must be fed to the program from the file.
4. The output of the program must be saved in the same file, without overwriting the information.
5. You must provide the relative file name while creating the file object. Absolute file name is not allowed.
6. You can only use following classes for I/O: Scanner, PrintWriter, FileInputStream, and FileOutputStream.

The structure of the file will be as follows.

The BEFORE file shows the contents of file before the program execution. First row (3, 3) shows values of R and C. Second row (1, 1) shows the corner kid who will get the chocolate box first. The third row (3, 3) shows the position of Ali. Please refer to the sample run 01 above.

The AFTER file shows the contents of the same file after program execution.



INSTRUCTIONS ON SUBMISSION

1. You must provide separate source codes to Assignment 04 and Lab assignment 04. The source code for Lab assignment 04 must include Text I/O.
2. Submissions must be the Java source code files, with dot java extension only.
3. Copying will lead to ZERO marks!!