Lab 7. Deadlock Detection

1. Problem Description

In this lab, you are asked to apply Banker's Algorithm to deadlock detection. Please refer to the course slides on Deadlock Detection. Your program should ask the user to specify an input file. The format of the input file is described below. The program will run the algorithm and display a message stating either that there is a deadlock or that there is not. If there is a deadlock, list the processes that are involved in the deadlock. Then you will give the user a chance to run another set of data.

2. Input Data Format

Number of processes (N) (*in* black)
Number of Resource Types (M) (in teal)
Available (unallocated) instances of each resource - 1 line of M numbers (*in* red)
Allocation matrix - N lines of M numbers (*in* **green bold**)
Request Matrix - N lines of M numbers (*in blue italic*)

Sample input data:

```
5
3
0 0 0
0 1 0
2 0 0
3 0 3
2 1 1
0 0 2
0 0 0
2 0 2
0 0 1
1 0 0
0 0 2
```

3. Submissions

- (80%) Well-commented source code
- (20%) Write a report that
  - describes how to compile and run your program
  - includes screenshots of your running program