CSC 456 Operating Systems
Spring 2021
Instructor: Dr. Stephen Krebsbach
Assignment #3
25 points Due: Tuesday March 2nd 11:00 AM (CST) **NO LATE ALLOWED**

Record You answers using the Quiz for Assignment 3

Please do the following.

5.1 Look at the Bankers-Algorithm Slides (posted on D2L) (also in class video)

Given the following snapshot of the system and assuming that the system is currently in a safe state; for each of the 3 requests; state if the request should (**raise an error, recourses currently unavailable be made to wait, will create unsafe state be made to wait, be granted**).

Each request should be considered independently of the others. That means each should be evaluated against the starting state of the system.

You should use the **Banker's algorithm** to determine the course of action.

	Allocation			**Max**			**Available**		
	A	**B**	**C**	**A**	**B**	**C**	**A**	**B**	**C**
P0	**0**	**1**	**0**	**7**	**5**	**3**	**3**	**3**	**2**
P1	**2**	**0**	**0**	**3**	**2**	**2**			
P2	**3**	**0**	**2**	**9**	**0**	**2**			
P3	**2**	**1**	**1**	**2**	**2**	**2**			
P4	**0**	**1**	**2**	**4**	**3**	**3**			

Evaluate each request separately against this starting state!

Request 1 P0 (1 , 1 , 1) then start over for
Request 2 P2 (4 , 0 , 0) then start over for
Request 3 P3 (0 , 3 , 0)

1) **raise an error, wait - resources currently unavailable, wait - will create unsafe state, grant**
2) **raise an error, wait - resources currently unavailable, wait - will create unsafe state, grant**
3) **raise an error, wait - resources currently unavailable, wait - will create unsafe state, grant**

5.2 Review Peterson's Algorithm Fig 5.2

What do each of the 3 requirements for the Critical Section problem address?

1) Mutual exclusion: Correctness or Efficiency or Fairness?
2) Progress: Correctness or Efficiency or Fairness?
3) Bounded wait: Correctness or Efficiency or Fairness?