CAS CS 350 HW7

Andrea Lopez

TOTAL POINTS

97 / 100

QUESTION 1

1 Q1 40 / 40

√ - 0 pts Correct

a)

- 4 pts Incorrect
- 5 pts No answer provided

b)

- 4 pts Incorrect
- 5 pts No answer provided

c)

- 3 pts minor error in reasoning/unclear reasoning
- 5 pts Correct answer but reasoning not provided
- 8 pts Incorrect
- 10 pts no answer provided

d)

- 3 pts Minor errors/unclear reasoning
- 5 pts Missing sample of execution/missing

reasoning

- 8 pts Incorrect
- 10 pts No answer provided

e)

- 4 pts incorrect/Missing semaphore initialization
- 4 pts Incorrect semaphore usage
- 8 pts Incorrect
- 10 pts No answer provided

QUESTION 2

2 Q2 27/30

- 0 pts Correct

a

√ - 1 pts Incorrect/Miss part of semaphore

initialization

- 1 pts Miss 1 essential semaphore lines

- 2 pts Miss 2 essential semaphore lines
- 3 pts Miss 3 essential semaphore lines
- 4 pts Miss 4 essential semaphore lines
- 5 pts Miss 5 essential semaphore lines
- 6 pts No answer provided
- 2 pts logical error

b)

- 1 pts Miss part of semaphore initialization
- 1 pts Miss 1 essential semaphore lines
- 2 pts Miss 2 essential semaphore lines
- 3 pts Miss 3 essential semaphore lines
- 4 pts Miss 4 essential semaphore lines
- 5 pts Miss 5 essential semaphore lines
- 6 pts No answer provided
- 2 pts logical error

c)

√ - 2 pts Missing/incorrect initialization

- 2 pts Minor error for the code of roommate
- 4 pts Incorrect code for the roommate
- 2 pts Minor error for the code of employee
- 4 pts Incorrect code for the employee
- 6 pts No answer for employee- 18 pts no answer provided

QUESTION 3

3 Q3 30 / 30

√ - 0 pts Correct

	2-11-	1
9)	equal them both to failse to guarantee 2-party mutual	ł
	exclusion:	-
	flag [i] = false	
, .	flag [j] = false	
L\	Initializing turn to j will have no impact because gris or	0+
	trying to acquire the critical section. Therefore, process	i
	Still has access to the critical section so no effect	+
	is seen.	
	Not the output would not be possible because line To	GIE EV
<i>C</i>)	is not executed! This is because flag[i] is set to the	-
	but in order for j to go to the contical section, flag (i)	654
	must be set to faise. However this doesn't happen	5 "
-0-	must be set to taise. However, the contical section it	
	because once j is done with the critical section jit	cal
	sets turn to i, so in would have to go through the conti	S
	sets turn to 1,50 m weeks to j. However, process is section to then set turn back to j. However, process is	
	not in the CS, so the output in line 7 is impossible.	
		nd
d)	Adding a break would cause a problem because it woo	na
		J
	it possible for there to be 2 process in the Cs at	
	time.	7
	example execution:	

Problem 1 continued ...

		Process		
(6	Procen i			
ď.				
2	print_line ("Procent i= entering (S"))	2		_
3	while (flag [i])			_
- 4	11/1/2 averaged	4		
5	print line ("process i: Inside (s");	5 C. 2 = bale		_
<u> </u>	pnn+ line (170	7 print-line ("processe j: enterin	n (50)	
7	1 1	7 print line ("process")	3	
2		B while (flag (i)) &		
В		9 if (turn == i) {		
9		10. flag(j) = false;		
10		11 break 53		
11		12 3	cs"\;	
12		Bepint-line (Procent je inside (
13		14 rint line recommend		
	turn = j flag[i] = falsej	15		
	1	16 turn=1;		
16		17 flag (i) = false; and		
17		ALLYSIA & WEST WIFE		
	* Both processes are insid	e the CS (so this doesn't		_
	mork)!!	i to the other of the contract of		_
	Wev E 3	1 1 2 2 3 3 40 K 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		_
	i se	21 Fales X 2101 - 11		_
		8 H		
		A ROBERT WAY BEEN AND		-
				-
			-	
				1
		<u> </u>		

Problem 1 continued -e) Modified code: Semaphore sem = 1; Process i: repeat: // remainder section wait (sem) 11 critical section starts! print-line ("Processi: Inside cs"); I and of critical section! *** signal (sem); // remainder section forever Process j: repeat: -// remainder section -2 wait (sem) -11 critical section starts! print-line (process j: inside cs"); Hend of critical section! sigmal (sem); // remainder section forever 0

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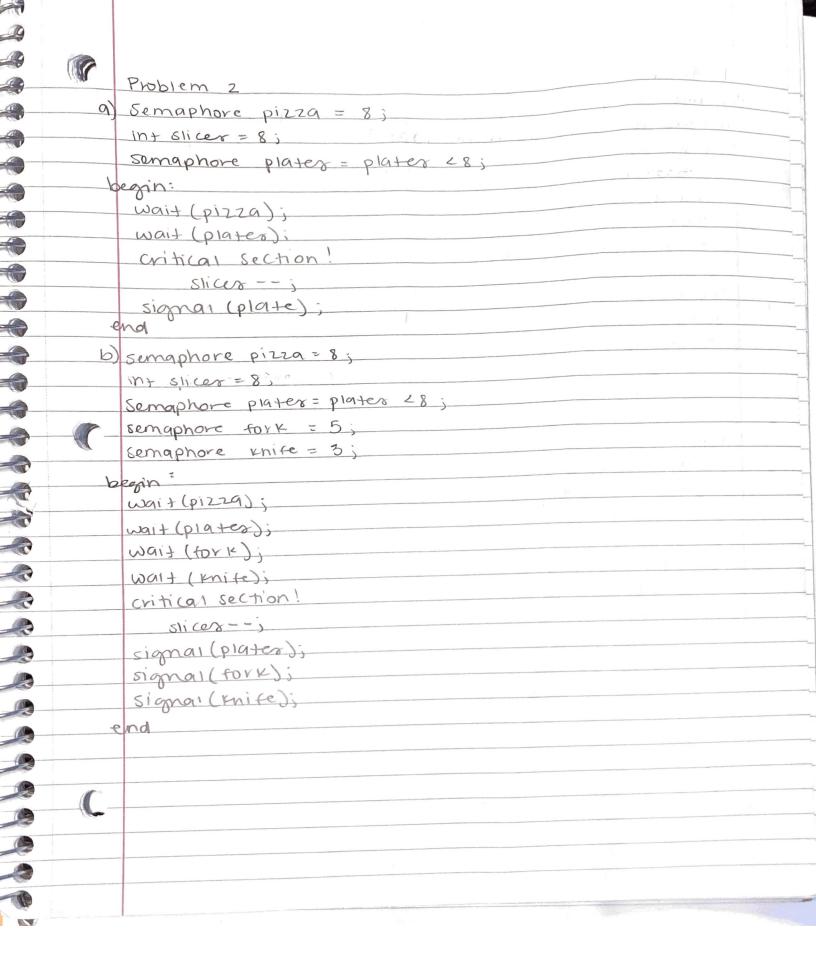
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1Q140/40

√ - 0 pts Correct

- a)
 - 4 pts Incorrect
 - 5 pts No answer provided
- b)
 - 4 pts Incorrect
 - **5 pts** No answer provided
- C)
 - 3 pts minor error in reasoning/unclear reasoning
 - 5 pts Correct answer but reasoning not provided
 - 8 pts Incorrect
 - 10 pts no answer provided
- d)
 - 3 pts Minor errors/unclear reasoning
 - 5 pts Missing sample of execution/missing reasoning
 - 8 pts Incorrect
 - 10 pts No answer provided
- e)
 - 4 pts incorrect/Missing semaphore initialization
 - 4 pts Incorrect semaphore usage
 - 8 pts Incorrect
 - 10 pts No answer provided



Problem 2 continued. 6 c) semaphone pizza = 8; 6 int slicer = 8; semaphore plates = plates = 8; 6 Semaphore fork = 5; semaphore inite = 3; Slmaphore m = 0; semaphore pizzeria = 0, mama Jane process begn "Roomies" process benin-wait (m); wait (pizza); wait (pizzeria); wait (plate); critical section! wait (fork); slicer = 8; wait (knite); for slice in range (8) & wait (m); signal (pizza); critical section! slices --; signal (m); if (slices <= 0) { end signal (pizzena); 3 signal (Pizza); signal (Knife); Signal (fork); signal (plate) signal (m); end

2 Q2 27/30

- O pts Correct

a

√ - 1 pts Incorrect/Miss part of semaphore initialization

- 1 pts Miss 1 essential semaphore lines
- 2 pts Miss 2 essential semaphore lines
- 3 pts Miss 3 essential semaphore lines
- 4 pts Miss 4 essential semaphore lines
- 5 pts Miss 5 essential semaphore lines
- 6 pts No answer provided
- 2 pts logical error

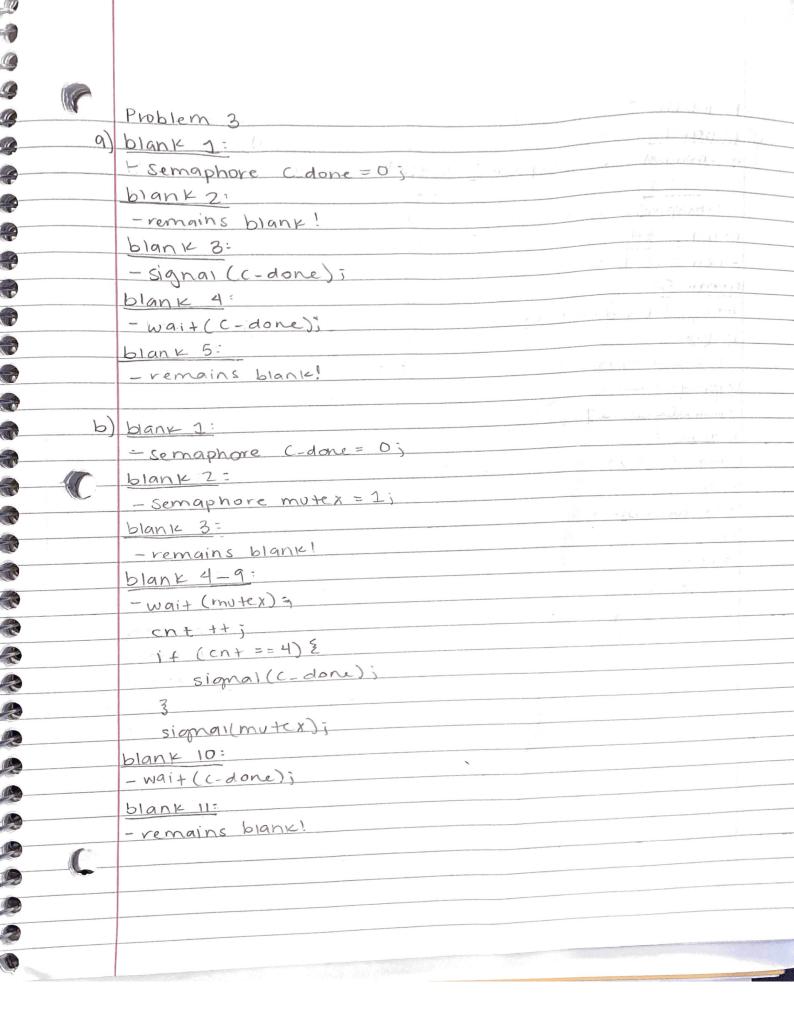
b)

- 1 pts Miss part of semaphore initialization
- 1 pts Miss 1 essential semaphore lines
- 2 pts Miss 2 essential semaphore lines
- 3 pts Miss 3 essential semaphore lines
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- 5 pts Miss 5 essential semaphore lines
- 6 pts No answer provided
- 2 pts logical error

c)

√ - 2 pts Missing/incorrect initialization

- 2 pts Minor error for the code of roommate
- 4 pts Incorrect code for the roommate
- 2 pts Minor error for the code of employee
- 4 pts Incorrect code for the employee
- 6 pts No answer for employee
- 18 pts no answer provided



Perblem 3 continued blank 1: Semaphore (-done[4]= [0,0,0,0]) blank 2: Semaphore mutex= 1; blank 3-4: -remain blank! blank 6: -signal (c-done (i)), blank 10: -wait ((-done [i])) blank 8: -wait ((mutex); blank 10: -remains blank!	The second secon	
Problem 3 continued blank 1: - Semaphore C-done[4]= [0,0,0,0]i blank 2: - Semaphore mutex= 1; blank 3-4: - remain blank! blank 6: - signal (C-done (il)); blank 6: - wait (C-done [j]); blank 8: - wait ((mutex); blank 9: - signal (mutex); blank 10: - remains blank!	, , , , , ,	
Problem 3 continued blank 1: - Semaphore C-done[4]= [0,0,0,0]i blank 2: - Semaphore mutex= 1; blank 3-4: - remain blank! blank 6: - signal (C-done (il)); blank 6: - wait (C-done [j]); blank 8: - wait ((mutex); blank 9: - signal (mutex); blank 10: - remains blank!		
Problem 3 continued blank 7: - Semaphore C-done[4] = [0,0,0,0]; blank 2: - Semaphore mutex = 7; blank 3: - remain blank! blank 6: - signal (C-done (i)); blank 7: - wait (C-done [j]); blank 8: - wait (mutex); blank 9: - signal (mutex); blank 10: - remains blank!		
Explain 3 continued blank 7: - Semaphore (-done[4]= [0+0+0+0]) blank 2: - Semaphore mutex= 1; blank 8: - remain blank! blank 0: - remains blank! blank 7: - wait ((-done[j])) blank 8: - wait(mutex); blank 9: - signal(mutex); blank 10: - remains blank!		
Dank 7: - Semaphore (-done[4]=[0,0,0,0]i blank 2: - Semaphore mutex= 1; blank 8: - remains blank! blank 6: - remains blank! blank 7: - wait ((-done[j])); blank 8: - wait(mutex); blank 9: - signal(mutex); blank 10: - remains blank!	Problem 2 - bouled	8 771
blank 2: Semaphore mutex = 1; blank 3-4: -kemain blank! blank 6: -signal ((-done (i)); blank 0: -vemains blank! blank 7: -wait (C-done [j]); blank 8: -wait (mutex); blank 10: -remains blank!	hland a	
blank 2: - Semaphare mutex = I; blank 3-4: - Kenain blank! blank 6: - Signal (C-done (i)); blank 7: - wait (C-done [j]); blank 8: - wait (mutex); blank 9: - Signal (mutex); blank 10: - remains blank! - remains blank! - Vemains blank! - Vemains blank!	- Sat - 1:	1/0.0
- Semaphore mutex = 1; blank 3-4: - Kemain blank! blank 6: - Signal (C-done (i]); blank 7: - Wait (C-done [j]); blank 8: - Wait (mutex); blank 9: - Signal (mutex); blank 10: - remains blank!	blance C-abrecing 6	10123
blank 3-4: -remain blank! blank 6: -signal (c-done (i1)); blank 7: -wait (C-done [j]); blank 8: -wait (mutex); blank 9: -signal (mutex); blank 10: -remains blank!	- Sa-	
-remain blank! blank 8: -signal (C-done (i)); blank 0: -wait (C-done [j]); blank 8: -wait (mutex); blank 9: -signal (mutex); blank 10: -remains blank! -remains blank! -remains blank!	semaphore mutex = 1)	
blank 6: - Signal (C-done (i)); blank 6: - remains blank! blank 8: - wait (mutex); blank 9: - signal (mutex); blank 10: - remains blank! I main distribution of the signal of		
- Signal (C_done (i)); blank 6: - remains blank! blank 8: - wait (C_done [j]); blank 9: - signal (mutex); blank 10: - remains blank! Find Julie 100 100 100 100 100 100 100 100 100 10		1
blank (c. done (1)); blank 7: - wait (C-done [j]); blank 8: - wait(mutex); blank 9: - signal(mutex); blank 10: - remains blank! - remains blank!		1 , 20 - 65.11 -
blank 7: - wait (C-done [j]); blank 8: - wait (mutex); blank 9: - signal (mutex); blank 10: - remains blank!	•	
blank 7: -wait ((-done [j])); blank 8: -wait(mutex); blank 9: - signal(mutex); blank 10: - remains blank! - remains blank!		
- wait ((-done [j])) blank 8: - wait (mutex); blank 9: - signal (mutex); blank 10: - remains blank! - remains blank!		
blank 8: -wait(mutex); blank 9: - signal(mutex); blank 10: - remains blank! (and the signal of		2 2 2 1
- Wait (mutex); blank 9: - Sig hal (mutex); blank 10: - remains blank! - And	-wait (C-done [j])	
blank 9: - signal (mutex); blank 10: - remains blank! - remains blank! - remains blank!	blank 8:	and a second a second and a second as a se
- Signal (mutex); blank 10: - remains blank! 10: 10: 10: 10: 10: 10: 10: 10	-wait(mutex);	
blank 10: - remains blank! - remains blank! - remains blank!	blank 9:	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1
blank 10: - remains blank! - remains blank! - remains blank!	- signal(mutex);	
	- remains blank!	. r
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		C 12 4 18 2
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3 Q3 30 / 30

√ - 0 pts Correct