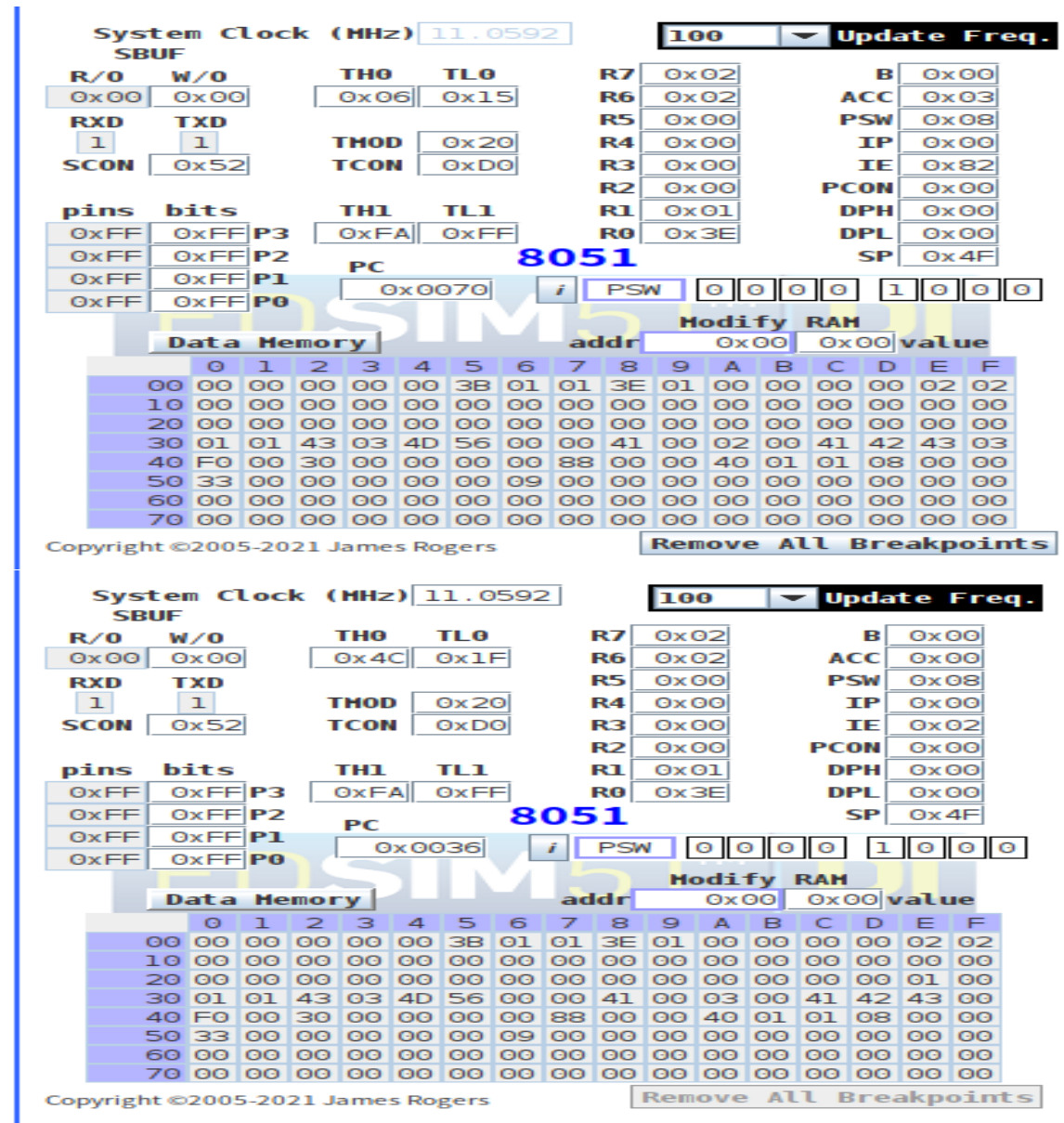# 1 Question 1: Take screenshots when the Producer is running and show semaphore changes

1 .Because currentThreadId() is 1 so can know producer is running,and Mutex(in 0x29) is changed from 1 to 0 in picture1 , and

Mutex(in 0x29) is changed from 0 to 1 in picture2 , and Full(0x3A) is chaged from 0 to 3, empty(0x3B) is changed from 3 to 0

2 Question 1: Take screenshots when the Comsumer is running and show semaphore changes

System Clock (MHz) 11.0592 100 Update Freq.

SBUF
R/O 0x00   W/O 0x41
RXD 1   TXD 0
SCON 0x50

THO 0x1B   TL0 0x13
THOD 0x20
TCON 0xD0

TH1 0xFA   TL1 0xFF

pins bits
0xDD 0xFD P3
0xFF 0xFF P2
0xFF 0xFF P1
0xFF 0xFF P0

PC 0x00A0

8051

R7 0x00   B 0x40
R6 0x01   ACC 0x01
R5 0x00   PSW 0x09
R4 0x00   IP 0x00
R3 0x00   IE 0x82
R2 0x00   PCON 0x00
R1 0x3C   DPH 0x01
R0 0x3E   DPL 0x01
SP 0x46

PSW 0 0 0 0 1 0 0 1

Modify RAM
addr 0x00   0x00 value

Data Memory

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	00	00	00	00	3B	01	01	3E	3C	00	00	00	00	01	00
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	01
30	01	00	43	03	4D	56	00	00	41	00	01	01	41	42	43	00
40	F0	00	30	00	00	00	00	88	00	00	40	01	01	08	00	00
50	38	00	00	00	00	00	08	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

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System Clock (MHz) 11.0592 100 Update Freq.

SBUF
R/O 0x00   W/O 0x43
RXD 1   TXD 1
SCON 0x52

THO 0xD6   TL0 0x07
THOD 0x20
TCON 0xD0

TH1 0xFA   TL1 0xFB

pins bits
0xFF 0xFF P3
0xFF 0xFF P2
0xFF 0xFF P1
0xFF 0xFF P0

PC 0x0086

8051

R7 0x02   B 0x40
R6 0x01   ACC 0x00
R5 0x00   PSW 0x08
R4 0x00   IP 0x00
R3 0x00   IE 0x02
R2 0x00   PCON 0x00
R1 0x3E   DPH 0x01
R0 0x3E   DPL 0x01
SP 0x46

PSW 0 0 0 0 1 0 0 0

Modify RAM
addr 0x00   0x00 value

Data Memory

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	00	00	00	00	00	3B	01	01	3E	3E	00	00	00	00	01	02
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	00	00	00	00	00	00	00	00	00	00	00	00	00	00	01	00
30	01	00	43	03	4D	56	00	00	41	00	00	03	41	42	43	00
40	F0	00	30	00	00	00	00	88	00	00	40	01	01	08	00	00
50	38	00	00	00	00	00	08	00	00	00	00	00	00	00	00	00
60	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

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1 .Because currentThreadId() is 0 so can know comsumer is running,and Mutex(in 0x29) is changed from 1 to 0 in picture1 , and Mutex(in 0x29) is changed from 0 to 1 in picture2 , and Full(0x3A) is chaged from 3 to 0, empty(0x3B) is changed from 0 to 3