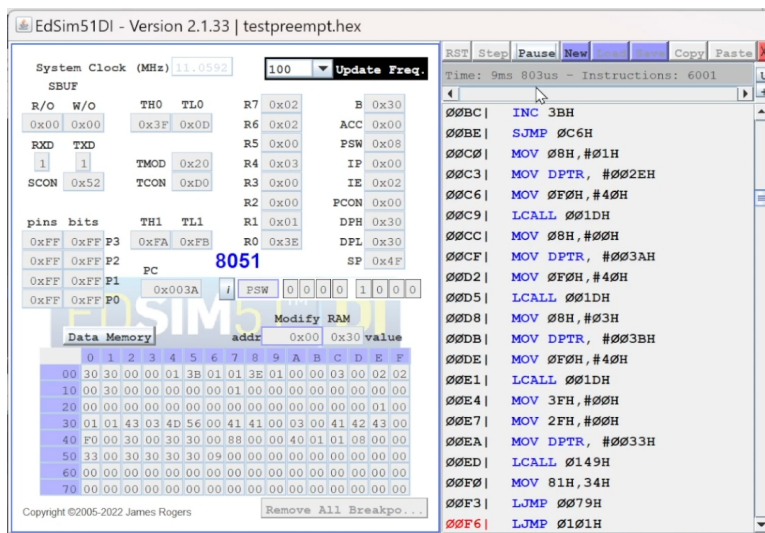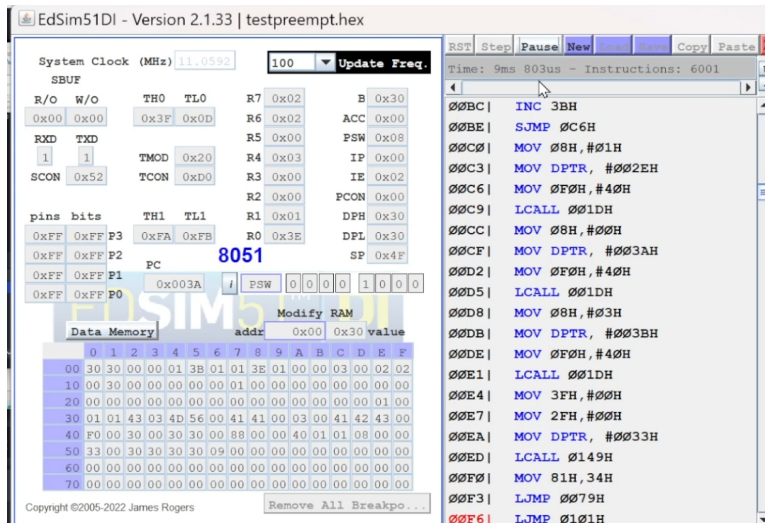# Checkpoint3

1.Typescript for compilation

I chose to implement on the Windows operating system, so I cannot use the 'rm' command. Here, I opted to use the 'del' command to achieve the same functionality.

```
C:\清大資工\OS\112os\ppc3>make clean
del *.hex *.ihx *.lnk *.lst *.map *.mem *.rel *.rst *.sym

C:\清大資工\OS\112os\ppc3>make
sdcc -c  testpreempt.c
sdcc -c  preemtive.c
preemtive.c:279: warning 85: in function ThreadCreate unreferenced function argument : 'fp'
sdcc  -o testpreempt.hex testpreempt.rel preemtive.rel
```

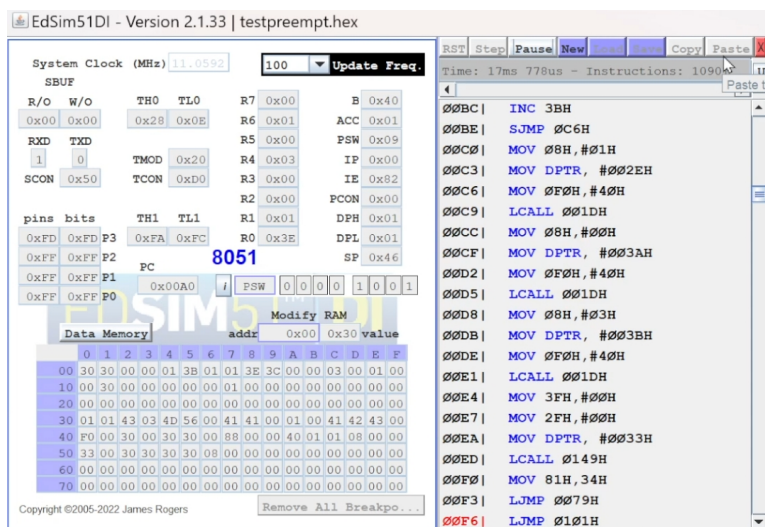## 2-1.Take screenshots when the Producer is running and show semaphore changes.

1.Because currentThreadID() is 1 (0x31),so we can know producer is running,and Mutex(0x2E) is changed from 1 to 0 in picture

2.Mutex(0x2E) is changed from 0 to 1, and Full(0x3A) is changed from 0 to 3 , and Empty(0x3B) is changed from 3 to 0

2-2Take screenshots when the Consumer is running and show semaphore changes.

EdSim51DI - Version 2.1.33 | testpreempt.hex

Time: 6ms 402us - Instructions: 3901

```
00BC|    INC  3BH
00BE|    SJMP 0C6H
00C0|    MOV  08H,#01H
00C3|    MOV  DPTR, #002EH
00C6|    MOV  0F0H,#40H
00C9|    LCALL 001DH
00CC|    MOV  08H,#00H
00CF|    MOV  DPTR, #003AH
00D2|    MOV  0F0H,#40H
00D5|    LCALL 001DH
00D8|    MOV  08H,#03H
00DB|    MOV  DPTR, #003BH
00DE|    MOV  0F0H,#40H
00E1|    LCALL 001DH
00E4|    MOV  3FH,#00H
00E7|    MOV  2FH,#00H
00EA|    MOV  DPTR, #0033H
00ED|    LCALL 0149H
00F0|    MOV  81H,34H
00F3|    LJMP 0079H
00F6|    LJMP 0101H
```
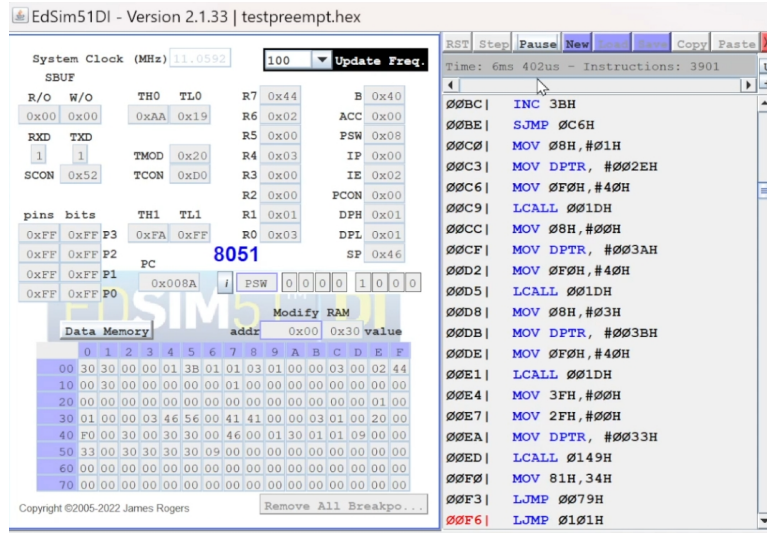
1.Because currentThreadID() is 0 (0x31),so we can know consumer is running,and Mutex(0x2E) is changed from 1 to 0 in picture

2.Mutex(0x2E) is changed from 0 to 1, and Full(0x3A) is changed from 3 to 0 , and Empty(0x3B) is changed from 0 to 3