3.1 [2 points] Typescript for compilation

```
$ make clean
```

del *.hex *.ihx *.lnk *.lst *.map *.mem *.rel *.rst *.sym *.asm *.lk

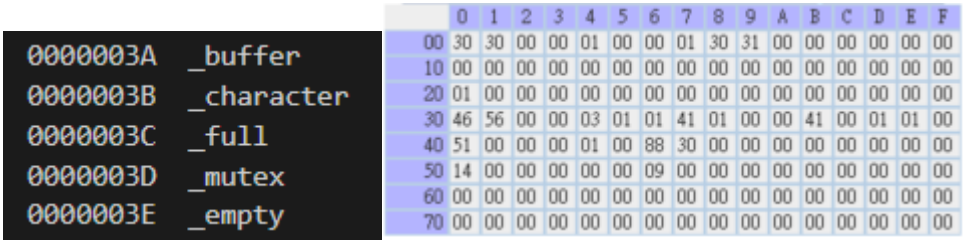
```
$ make
```

sdcc -c testpreempt.c
testpreempt.c:30: warning 158: overflow in implicit constant conversion
sdcc -c preemptive.c
preemptive.c:142: warning 85: in function ThreadCreate unreferenced function n
argument : 'fp'
preemptive.c:176: warning 158: overflow in implicit constant conversion
sdcc -o testpreempt.hex testpreempt.rel preemptive.rel

3.2 [18 points] Screenshots and explanation

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

  before:



  35 is 1, so now it is in producer. And mutex(3D), empty(3E) are set to 1, so it is ready to set buffer to character.

  after:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	30	30	00	00	01	00	00	01	30	31	00	00	00	00	00	41
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30	46	56	00	00	03	01	01	41	01	00	41	42	01	01	00	00
40	51	00	00	00	01	00	88	30	00	00	00	00	00	00	00	00
50	14	00	00	00	00	00	09	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

we can see that full(3C) is set to 1, and empty(3E) is 0, mutex(3D) decreased then increased so nothing changed.

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

before:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	30	30	00	00	01	00	00	01	31	30	00	00	00	00	00	41
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30	46	56	00	00	03	00	01	41	01	00	41	42	01	01	00	00
40	51	00	00	00	01	00	88	30	00	00	00	00	00	00	00	00
50	17	00	00	00	00	00	08	31	31	00	00	00	00	00	41	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

35 is 0, so now it is in Consumer. And full(3C) and mutex(3D) are set to 1, so it is ready to write to SBUF.

after:

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
00	30	30	00	00	01	00	00	01	31	30	00	00	00	00	00	41
10	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
20	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
30	46	56	00	00	03	00	01	41	01	00	41	42	00	01	01	00
40	51	00	00	00	01	00	88	30	00	00	00	00	00	00	00	00
50	17	00	00	00	00	00	08	31	31	00	00	00	00	00	41	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

we can see that full(3C) is 0 and empty(3E) is set to 1, mutex(3D) decreased then increased so nothing changed.