

```

PS C:\Users\josh9\OneDrive\桌面\phchou_OS\OS\project\project3> make clean
del *.hex *.ihx *.lnk *.lst *.map *.mem *.rel *.rst *.sym *.asm *.lk
PS C:\Users\josh9\OneDrive\桌面\phchou_OS\OS\project\project3> make
sdcc -c testpreempt.c
testpreempt.c:35: warning 158: overflow in implicit constant conversion
sdcc -c preemptive.c
preemptive.c:180: warning 85: in function ThreadCreate unreferenced function argument : 'fp'
preemptive.c:222: warning 158: overflow in implicit constant conversion
sdcc -o testpreempt.hex testpreempt.rel preemptive.rel
PS C:\Users\josh9\OneDrive\桌面\phchou_OS\OS\project\project3>

```

System Clock (MHz) 
 Update Freq.

R/O W/O TH0 TL0 R7 0x01 B 0x00

0x00 0x00 0x02 0x1F R6 0x50 ACC 0x00

RXD TXD 1 1 TMOD 0x20 R5 0x50 PSW 0x08

SCON 0x50 TCON 0xD0 R4 0x22 IP 0x00

pins bits TH1 TL1 R3 0x88 IE 0x82

0xFF 0xFF P3 0xFA 0xFF R2 0x00 PCON 0x00

0xFF 0xFF P2 PC 8051 R1 0x31 DPH 0x00

0xFF 0xFF P1 0x0014 PSW 0 0 0 0 1 0 0 0

0xFF 0xFF P0

addr	0x00	0x00	value
0	0	1	30
1	30	30	00
2	00	00	01
3	00	00	00
4	00	00	00
5	00	00	01
6	00	00	10
7	30	31	00
8	88	22	50
9	50	00	00
A	01	01	B5
B	00	00	00
C	03	00	00
D	00	00	01
E	00	00	00
F	01	00	00
10	47	66	66
11	30	00	00
12	00	00	01
13	00	00	00
14	20	0F	22
15	20	22	01
16	00	00	00
17	4F	50	00
18	00	00	01
19	01	01	03
20	41	01	02
21	41	01	02
22	01	00	00
23	00	00	00
24	30	46	56
25	00	02	01
26	03	41	01
27	02	41	01
28	02	01	00
29	00	00	30
30	40	63	00
31	00	00	01
32	00	00	88
33	30	30	00
34	00	00	01
35	00	00	00
36	10	00	00
37	50	14	00
38	00	00	00
39	00	00	09
40	30	30	00
41	00	00	01
42	00	00	00
43	10	00	00
44	60	82	36
45	00	00	00
46	00	00	00
47	11	33	33
48	32	32	80
49	32	00	00
50	00	00	00
51	70	C5	01
52	D8	01	D6
53	01	1C	D0
54	01	32	01
55	1C	00	81
56	CC	01	

RST Step Run New Load Save Copy Paste
Time: 9ms 4us - Instructions: 4995

```

ORG 0000H
0000LJMP 0099H
0003LJMP 000BH
000BLJMP 00A0H
000ELJMP 0087H
0011LJMP 000EH
0014*MOV 28H,#41H
0017LJMP 000EH
0019LJMP 000EH
001CLJMP 000EH
001ELJMP 000EH
0020LJMP 000EH
0022LJMP 000EH
0024LJMP 000EH
0026LJMP 000EH
0028LJMP 000EH
002ALJMP 000EH
002CLJMP 000EH
002ELJMP 000EH

```

R/O W/O TH0 TL0 R7 0x01 B 0x00

0x00 0x00 0x03 0x0D R6 0x50 ACC 0x01

RXD TXD 1 1 TMOD 0x20 R5 0x50 PSW 0x09

SCON 0x50 TCON 0xD0 R4 0x22 IP 0x00

pins bits TH1 TL1 R3 0x88 IE 0x82

0xFF 0xFF P3 0xFA 0xFF R2 0x00 PCON 0x00

0xFF 0xFF P2 PC 8051 R1 0x31 DPH 0x00

0xFF 0xFF P1 0x0029 PSW 0 0 0 0 1 0 0 1

0xFF 0xFF P0

addr	0x00	0x00	value
0	0	1	30
1	30	30	00
2	00	00	01
3	00	00	00
4	00	00	00
5	00	00	01
6	00	00	10
7	30	31	00
8	88	22	50
9	50	00	00
A	01	01	B5
B	00	00	00
C	03	00	00
D	00	00	01
E	00	00	00
F	01	00	00
10	47	66	66
11	30	00	00
12	00	00	01
13	00	00	00
14	20	0F	22
15	20	22	01
16	00	00	00
17	4F	41	00
18	00	00	00
19	01	01	03
20	41	01	02
21	41	01	02
22	01	00	00
23	00	00	00
24	30	46	56
25	00	02	01
26	03	41	01
27	02	41	01
28	02	01	00
29	00	00	30
30	40	63	00
31	00	00	01
32	00	00	88
33	30	30	00
34	00	00	01
35	00	00	00
36	10	00	00
37	50	14	00
38	00	00	00
39	00	00	09
40	30	30	00
41	00	00	01
42	00	00	00
43	10	00	00
44	60	82	36
45	00	00	00
46	00	00	00
47	11	33	33
48	32	32	80
49	32	00	00
50	00	00	00
51	70	C5	01
52	D8	01	D6
53	01	1C	D0
54	01	32	01
55	1C	00	81
56	CC	01	

RST Step Run New Load Save Copy Paste
Time: 9ms 4us - Instructions: 4995

```

ORG 0000H
0000LJMP 0099H
0003LJMP 000BH
000BLJMP 00A0H
000ELJMP 0087H
0011LJMP 000EH
0014*MOV 28H,#41H
0017LJMP 000EH
0019LJMP 000EH
001CLJMP 000EH
001ELJMP 000EH
0020LJMP 000EH
0022LJMP 000EH
0024LJMP 000EH
0026LJMP 000EH
0028LJMP 000EH
002ALJMP 000EH
002CLJMP 000EH
002ELJMP 000EH

```

002C is for empty. At the beginning, the empty is 1 and after wait , empty becomes 0. It means the semaphore changes, and 0029 is the producer code.

Data Memory				addr												0x00		0x00		value	
	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F					
00	30	30	00	00	01	00	00	10	30	31	00	88	22	4D	4D	00					
10	47	66	66	30	00	00	01	00	00	10	00	00	03	00	00	01					
20	0F	22	20	22	01	00	00	4C	4D	00	01	01	00	B5	00	30					
30	46	56	00	02	01	01	03	41	01	02	41	01	02	01	00	30					
40	60	00	00	00	01	00	88	30	30	00	00	01	00	00	10	00					
50	1C	00	00	00	00	00	88	30	30	00	00	01	00	00	10	00					
60	82	36	00	00	00	00	11	33	33	32	32	80	32	00	00	00					
70	C5	01	D8	01	D6	01	1C	D0	01	32	01	1C	00	81	CC	01					

System Clock (MHz) 11.0592
1000 Update Freq.

R/O W/O TH0 TL0 R7 0x00 B 0x00
0x00 0x4F 0x6E 0x18 R6 0x50 ACC 0x00

RXD TXD 1 1 TMOD 0x20 R5 0x50 PSW 0x88
SCON 0x50 TCON 0xD0 R4 0x22 IP 0x00

pins bits TH1 TL1 R1 0x30 PCON 0x00
0xFF 0xFF P3 0xFA 0xFC R0 0x31 DPH 0x00
0xFF 0xFF P2 0xFF 0xFF PC 0x0063 i PSW 1 0 0 0 1 0 0 0
0xFF 0xFF P1 0xFF 0xFF P0 0xFF 0xFF

Modify RAM
Data Memory addr 0x00 0x00 value

00 30 30 00 00 01 00 00 10 31 30 00 88 22 50 50 00
10 47 66 66 30 00 00 01 00 00 10 00 00 03 00 00 01
20 0F 22 20 22 01 00 00 4F 50 00 00 01 01 B5 00 30
30 46 56 00 02 00 01 03 41 01 02 41 01 01 01 00 30
40 63 00 00 00 01 00 88 30 30 00 00 01 00 00 10 00
50 1C 00 00 00 00 00 88 30 30 00 00 01 00 00 10 00
60 82 36 00 00 00 00 11 33 33 32 32 80 32 00 00 00
70 C5 01 D8 01 D6 01 1C D0 01 32 01 1C 00 81 CC 01

RST Step Run New Load Save Copy Paste
Time: 270ms 524us - Instructions: 147169
0040I INC R5
0041I MOV A,R5
0042I MOV R6,A
0043I RLC A
0044I SUBB A,0E0H
0046I MOV R7,A
0047I MOV 28H,R6
0049I MOV C,00H
004BI MOV 0AFH,C
004DI INC 2BH
004FI INC 2AH
0051I SJMP 0C4H
0053I ORL 89H,#20H
0056I MOV 8DH,#0FAH
0059I MOV 98H,#50H
005CI SETB 8EH
005EI MOV A,2AH
0060I JB 0E7H,0FBH
0063I JZ 0F9H

002C is for empty. At the beginning, the empty is 0 and after signal , empty becomes 1. It means the semaphore changes, and 0063 is the consumer code.

```

C: 00000014 _Producer testpreempt
C: 00000053 _Consumer testpreempt
C: 00000087 _main testpreempt
C: 00000099 __sdcc_gsinit_startup testpreempt
C: 0000009D __mcs51_genRAMCLEAR testpreempt
C: 0000009E __mcs51_genXINIT testpreempt
C: 0000009F __mcs51_genXRAMCLEAR testpreempt
C: 000000A0 _timer0_ISR testpreempt
C: 000000A4 _Bootstrap preemptive
C: 000000CA _ThreadCreate preemptive
C: 00000176 _ThreadYield preemptive
C: 000001DE _ThreadExit preemptive
C: 0000024D _myTimer0Handler preemptive

```