

3. Typescript and screenshots

3.1 Typescript for compilation

```
PS C:\Users\peggy\Downloads\OS_cp1> make clean
del *.hex *.ihx *.lnk *.lst *.map *.mem *.rel *.rst *.sym *.asm *.lk
PS C:\Users\peggy\Downloads\OS_cp1> make
sdcc -c testcoop.c
testcoop.c:74: warning 158: overflow in implicit constant conversion
sdcc -c cooperative.c
sdcc -o testcoop.hex testcoop.rel cooperative.rel
```

3.2 Screenshots and explanation

- ThreadCreate for main:

The screenshot displays the SIMS16 microcontroller simulator. The CPU registers section shows the Program Counter (PC) at address 8051. The instruction list on the right shows a sequence of instructions: JNZ 05H, LCALL 00F7H, SJMP 0F7H, MOV 99H, 38H, MOV 39H, 00EH, JBC 99H, 0EEH, SJMP 0FBH, MOV 39H, 00EH, MOV 38H, 00EH, MOV DPTR, #0009H, LCALL 0083H, LJMPL 002DH, LJMPL 0062H, RET, RET, RET, MOV 34H, 00EH, MOV 37H, 00EH, MOV DPTR, #004CH, and LCALL 0083H. The hardware interface at the bottom shows a 4-digit display with '8888', a 0.0V output, and a motor control section with 'Motor Enabled'.

- ThreadCreate for Producer:

The screenshot displays the SIMS16 microcontroller simulator. The CPU registers section shows the Program Counter (PC) at address 8051. The instruction list on the right shows a sequence of instructions: JNZ 05H, LCALL 00F7H, SJMP 0F7H, MOV 99H, 38H, MOV 39H, 00EH, JBC 99H, 0EEH, SJMP 0FBH, MOV 39H, 00EH, MOV 38H, 00EH, MOV DPTR, #0009H, LCALL 0083H, LJMPL 002DH, LJMPL 0062H, RET, RET, RET, MOV 34H, 00EH, MOV 37H, 00EH, MOV DPTR, #004CH, and LCALL 0083H. The hardware interface at the bottom shows a 4-digit display with '8888', a 0.0V output, and a motor control section with 'Motor Enabled'.

- Screenshot when the Consumer is running:
Current thread ID (0x35) is 0, which is the thread for Consumer.

