Section BD.9.03
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Ident. —.

Real Time Countdown Clock Module

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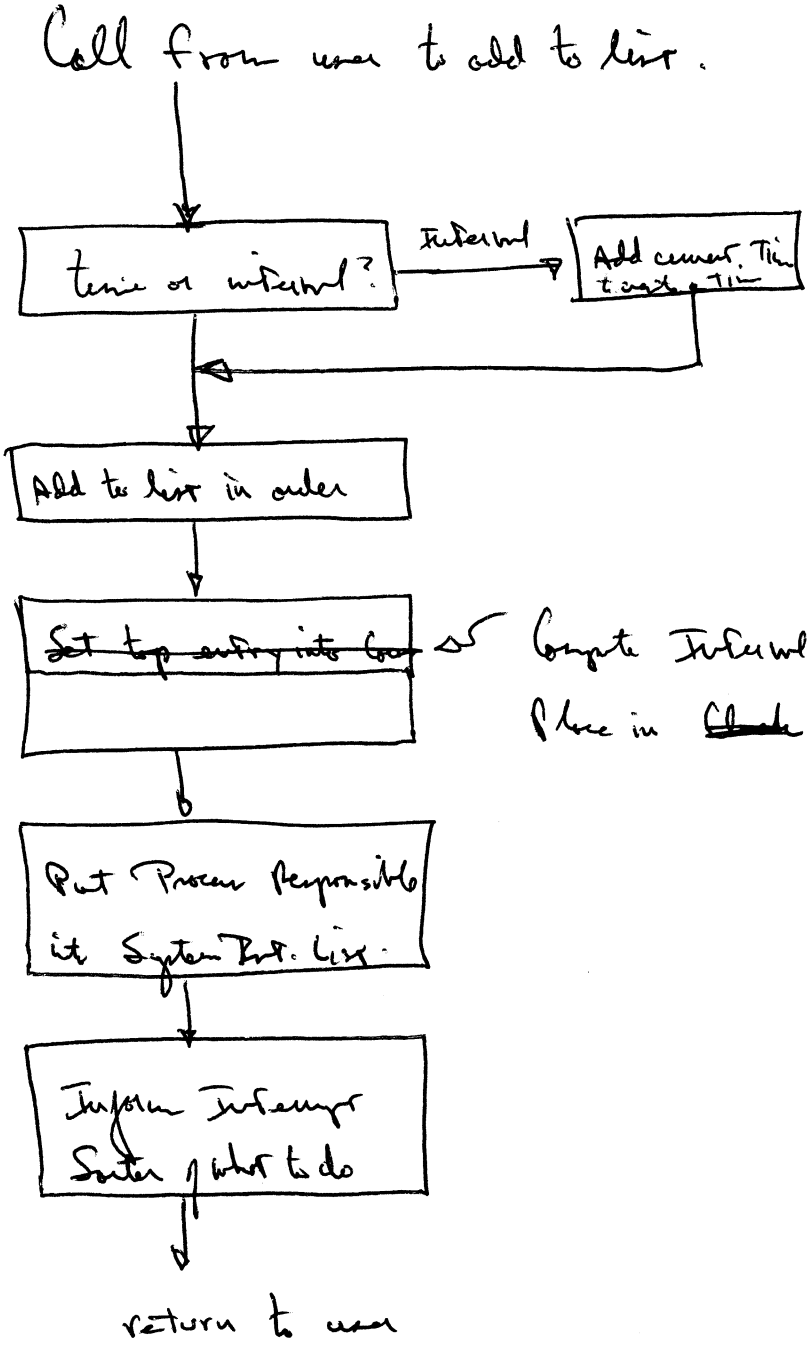
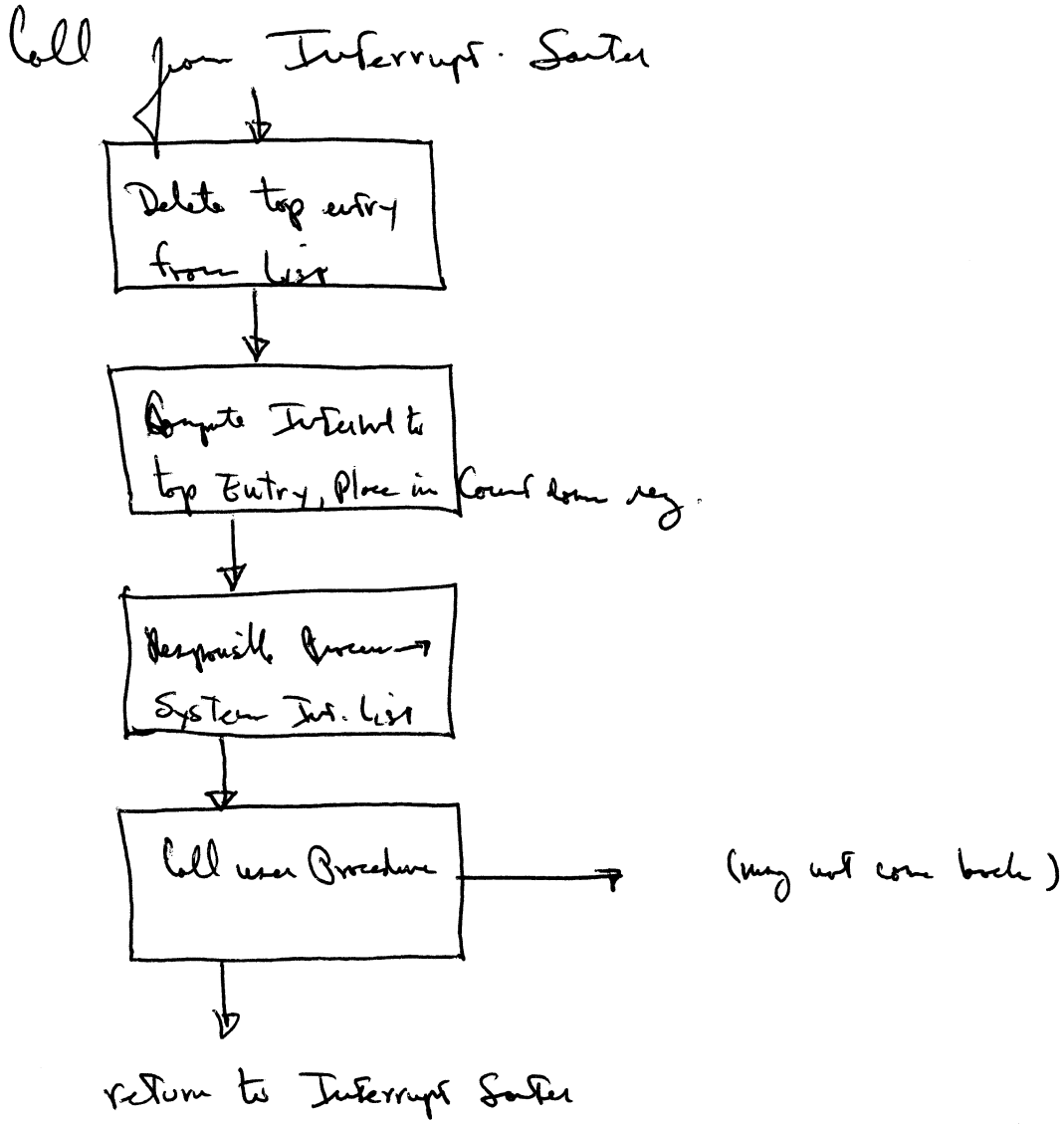
Purpose.

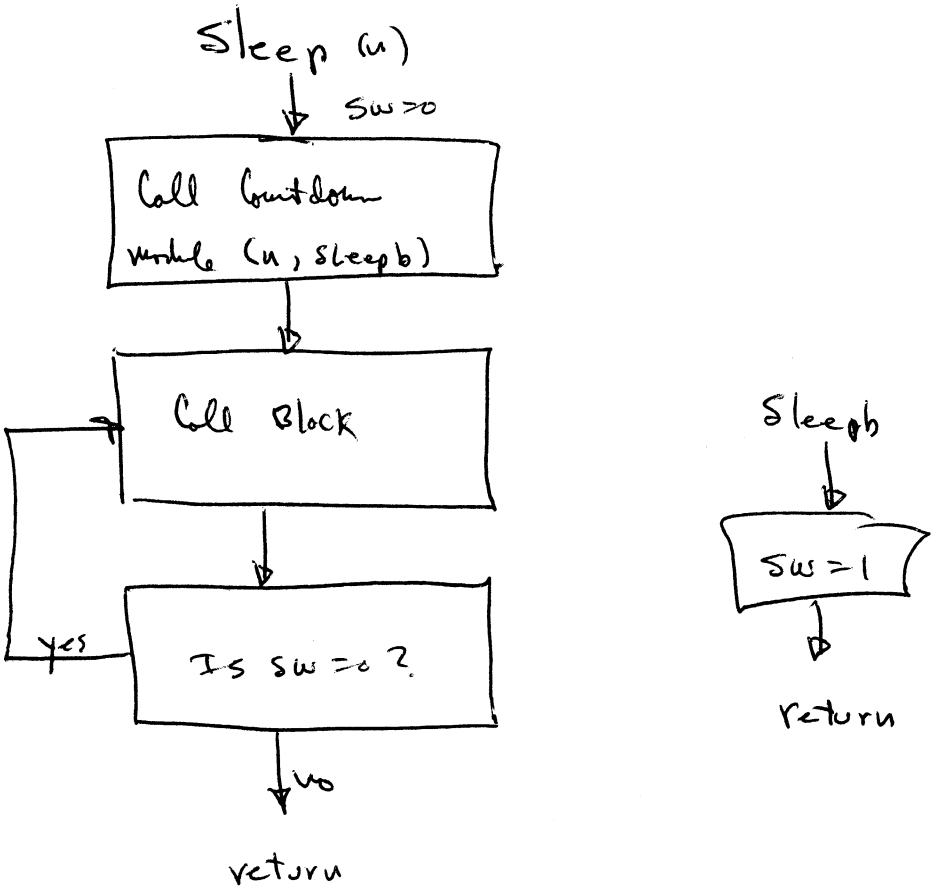
The real-time countdown clock is a hardware register synchronized with the calendar clock, and capable of producing a system interrupt when it passes counts to zero. The countdown clock module is a procedure which any process may call upon to request that a process interrupt be generated at a specific time or after a specific interval.

Discussion.

The countdown clock module operates on a part of the process which calls it. When a process this module has 4 entry points, 3 of which are called to set up or remove or list calendar interrupts, and one of which is called by the Interrupt Scanner when a process interrupt, actually happens from the calendar clock.


Call from user to add to list.
time or interval?
Interval
Add current Time to entry Time
Add to list in order
Set top entry into Countdown
Compute Interval to top entry, Place in Countdown Reg.
Put Process Responsible in System Prot. List.
Inform Interrupt Sender what to do
return to user


Call from Interrupt Sorter
Delete top entry from list
Compute Interval to top Entry, Place in Count down reg.
Reenable Processor System Int. List
Call user Procedure
(may not come back)
return to Interrupt Sorter


Sleep (n)
sw=0
Call Countdown
module (n, sleepb)
Call Block
yes
Is sw=0 ?
no
return
Sleepb
sw=1
return

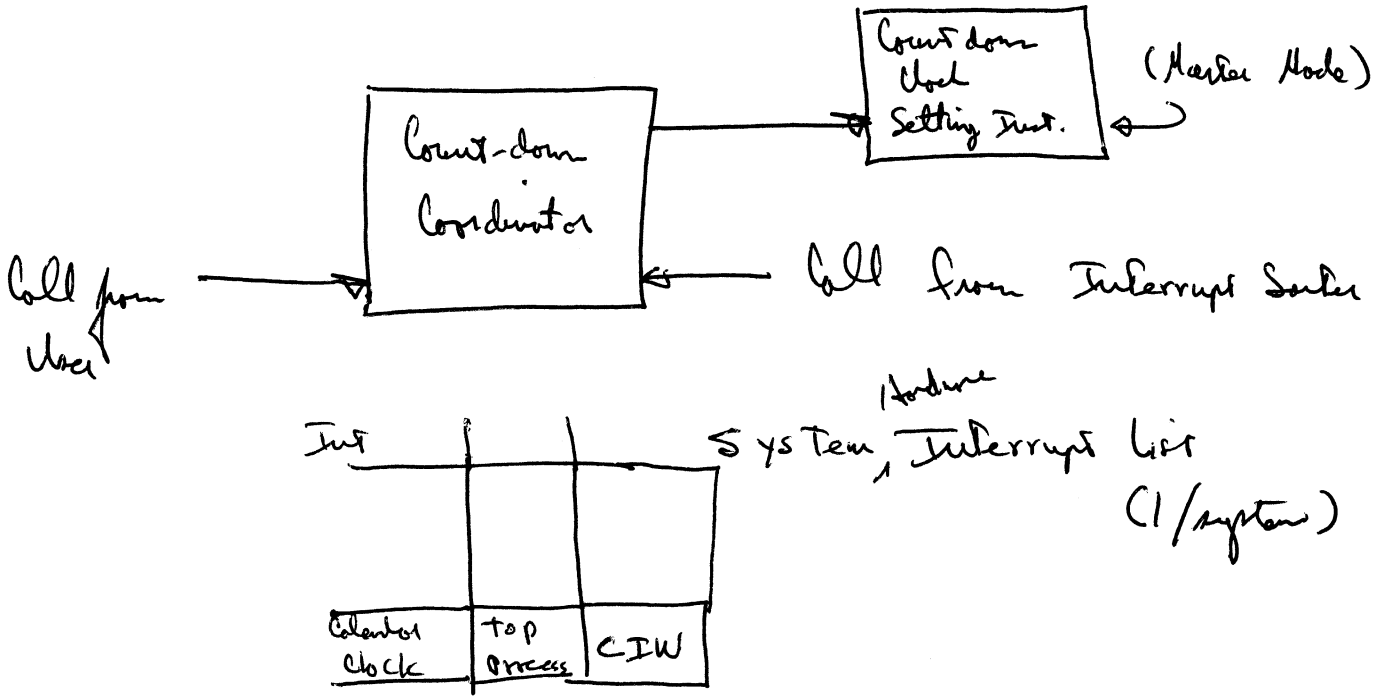
Countdown Clock Coordination

Entries from user calls:

1. Set Real-Time Interrupt (Calendar Time, procedure name)
2. Set Real-Time Interrupt (Calendar Interval, procedure name)
3. Delete Real-Time Interrupt (Calendar Time , proc. name)
4. List Real-Time Interrupts (List)

Entries on Calendar Interrupt (A Process Interrupt)

1. Real-Time Interrupt directed to this process has happened.



CIW is the system standard Calendar Interrupt Word.

Wakeup List (in order) (1/system)

52 bit time	Process I.D.	Procedure to call	Interval or Calendar Time switch