MAINLINE

1. Set up stacks for supervisor mode and IRQ mode
2. Initialize GPIO1 clock
3. Set up GPIO1_31 for falling edge interrupt
4. Initialize INTC for both GPIO1_31 and UART2
5. Map UART2
6. Initialize UART2 clock
7. Initialize UART2 Baud rate, etc.
8. Enable IRQ interrupt
9. Wait loop

INT_DIRECTOR

1. Save registers
2. Check if interrupt from UART2
    a. IF UART2, go to TALKER_SVC
    b. ELSE, cleanup, enable, and return to infinite loop
3. Check button
    a. IF button, go to BUTTON_SVC
    b. ELSE, cleanup, enable, and return to infinite loop

BUTTON

1. Turn off GPIO1_31 interrupt
2. Turn off NEWIRQA bit in INTC
3. Enable UART2 interrupt signals
4. Restore registers and return to wait loop

TALKER

1. Write character to THR
    a. IF counter = 0, turn off UART2 interrupt
    b. Restore registers and return to wait loop
2. Enable INTC for new interrupt
3. Restore registers and return to wait loop

RETURN_SVC

1. Enable IRQ interrupt
2. Restore registers and return to wait loop