MAINLINE

1. Set up stacks for supervisor mode and IRQ mode
2. Initialize GPIO1 clock
3. Initialize UART2 clock
4. Initialize Timer7 clock
5. Set up GPIO1_31 for falling edge interrupt
6. Initialize INTC for GPIO1_31, UART2, and Timer7
7. Map UART2
8. Initialize UART2 Baud rate, etc.
9. Initialize Timer7 count, overflow, etc
10. Enable IRQ interrupt
11. Wait loop

INT_DIRECTOR

1. Save registers
2. Check if interrupt from Timer7
    a. IF Timer7, go to ROTATE_SVC
    b. ELSE, cleanup, enable, and return to infinite loop
3. Check if interrupt from UART2
    a. IF UART2, go to TALKER_SVC
    b. ELSE, cleanup, enable, and return to infinite loop
4. Check button
    a. IF button, go to BUTTON_SVC
    b. ELSE, cleanup, enable, and return to infinite loop

BUTTON_SVC

1. Turn off GPIO1_31 interrupt
2. Turn off NEWIRQA bit in INTC
3. Enable UART2 interrupt signals
4. Enable Timer7 interrupt signals
5. Restore registers and return to wait loop

TIMER7_SVC

1. Point to shift command
2. If counter = 50, reset counter
3. Else, load shift command to UART2
4. Go to RETURN_SVC

TALKER_SVC

1. Write character to THR
    a. IF counter = 0, turn off UART2 interrupt
    b. Reset counter
    c. Point to next message
    d. Turn on Timer7 interrupt

        e. Restore registers and return to wait loop
    2. Go to RETURN_SVC

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