1. Kernel7.asm

;Calculate

mov r1,#4 ;input

mov sp,$1000 ;make room on the stack

mov r0,r1

bl FACTORIAL

mov r7,r0 ;store answer

BASE = $3F000000 ;RP2 and RP3 ;GPIO\_SETUP

GPIO\_OFFSET = $200000

mov r0,BASE

bl SETUP\_LED

loop$:

mov r1,#1

lsl r1,#18

str r1,[r0,#28] ;turn LED on

mov r2,$0F0000 ;not using r2 for anything else so no need to push/pop

bl TIMER

mov r1,#1

lsl r1,#18

str r1,[r0,#40] ;turn LED off

mov r2,$0F0000

bl TIMER

sub r7,#1

cmp r7,#0

bne loop$ ;end of outer loop. Runs r7 times

wait:

b wait

include "TIMER.asm"

include "factorialj.asm"

SETUP\_LED: ;Step 1

orr r0,GPIO\_OFFSET

mov r1,#1

lsl r1,#24

str r1,[r0,#4] ;set GPIO18 to output

bx lr

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GPIO\_OFFSET = $200000

mov r0,BASE

bl SETUP\_LED

push {r0,r1}

mov r0,BASE

mov r1,r7

bl FLASH

pop {r0,r1]

wait:

b wait

include "TIMER.asm"

include "factorialj.asm"

SETUP\_LED: ;Step 1

orr r0,GPIO\_OFFSET

mov r1,#1

lsl r1,#24

str r1,[r0,#4] ;set GPIO18 to output

bx lr

FLASH:

orr r0,GPIO\_OFFSET

mov r7,r1

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mov r0,BASE

bl SETUP\_LED

mov r0,BASE

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bl FLASH

wait:

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include "TIMER.asm"

include "factorialj.asm"

include "gpio.asm"

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mov r7,r0 ;store answer

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mov r0,BASE

bl SETUP\_LED

mov r0,BASE

bl SETUP\_LED

mov r0,BASE

mov r1,r7

bl FLASH

wait:

b wait

include "timer2\_2Param.asm"

include "factorialj.asm"

include "gpio.asm"