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| COS10004 |
| LAB 07 |
| COS10004 – Computer System |
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| **NGO CONG THANH** |
| **10/31/2021** |

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| SWINBURNE UNIVERSITY OF TECHNOLOGY |

16.1. Establish the base address of the GPIO registers?

BASE = $3F000000

GPIO\_OFFSET = $200000

mov r0,BASE

orr r0,GPIO\_OFFSET

16.2. Program GPIO18 for writing?

mov r1,#1

lsl r1,#24

str r1,[r0,#4]

16.3.Set GPIO18 to ON ?

mov r1,#1

lsl r1,#18

str r1,[r0,#28

16.4.Stop the instruction pointer (program counter) from continuing beyond the executable program code ?

loop$

b loop$

20.1. What number bit is set (within the associated 32 bit block) to enable GPIO23 for writing ?

#9

20.2.What is the byte offset from GPIO\_BASE that this 32 bit block must be written to in memory ?

#8

20.3.What number bit is set to set GPIO23 to ON (again within the 32 bit block associat-ed with that GPIO pin)?

#28

20.4.What is the byte offset from GPIO\_BASE that this 32 bit block must be written to memory ?

$200000

22.1.Which exact snippet of code will need to change compared to turning the LED on ?

mov r1,#1

lsl r1,#23

str r1,[r0,#28]

mov r1,#1

lsl r1,#23

str r1,[r0,#28]

22.2. Provide the alternative code to turn the LED off

mov r1,#1

lsl r1,#23

str r1,[r0,#40]