LAB 07

COS10004 – Computer System

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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]
```

22.2. Provide the alternative code to turn the LED off

```
mov r1,#1
lsl r1,#23
str r1,[r0,#40]
```