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## **Lab07**

16.1 Establish the base address of the GPIO registers

```
ldr r0, =0x3F2000000
```

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, #24
```

```
str r1, [r0, #4]
```

16.4 Stop the instruction pointer from continuing beyond the 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 associated 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
```

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```
str r1,[r0,#28]
```

22.2 Provide the alternative code to turn the LED off (again you will need to refer to the GPIO register diagram).

```
mov r1,#1
```

```
lsl r1,#23
```

```
str r1,[r0,#40]
```