UNIVERSITY OF SOUTHAMPTON

COMP2323

Computer Systems II Logbook

Semester 2, 2026

Christian Gleitzman

January 29, 2026

Contents

Week [X]: [Topic, e.g., Timers]

Quick Concept

To use the Timer: 1. Enable APB1 Clock. 2. Set Prescaler (PSC). 3. Set Auto-Reload (ARR). 4. Enable Counter (CEN).

Reference Implementation

```c
// src/week-01/example.c
#include <stdio.h>

int main(void) {
    // Placeholder for Task 1
    return 0;
}
```

Listing 1.1: Timer Init Code

Exam Pitfalls

> **EXAM NOTE**
>
> * The timer clock is usually HALF the system clock (APB1). * Don't forget to clear the Update Interrupt Flag (UIF) in the ISR!

Exam Quick Reference

A.1   Bitwise Cheat Sheet

- **Set Bit 3:** `REG |= (1 « 3);`

- **Clear Bit 3:** `REG &= ~(1 « 3);`

- **Toggle Bit 3:** `REG ^= (1 « 3);`

- **Check Bit 3:** `if (REG & (1 « 3))`

A.2   Common Register Maps

```
1  #define GPIOA_MODER   (*((volatile uint32_t *) 0x48000000))
2  #define RCC_AHB1ENR   (*((volatile uint32_t *) 0x40023830))
```