1. Project title: Timer

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2. Abstract

The aim of this application is to implement a system which counts the seconds and displays this counting using some LEDs.

3. Introduction, project aims and objectives

In this application we wanted to implement a system which displays on lights the seconds that pass in a minute. In principle, the project represents a chronometer that displays the seconds on the leds of the **INFINEON XMC1100 Boot Kit.** Also, this project can be considered a part of a possible clock that displays the time in a binary system.

4. System overview

This timer starts in the moment when the device on which was developed is connected to a power source. As the seconds pass, they will be displayed on development board leds, according to the manner in which the integers are represented in the binary system.

5. Schematics and components

The basic component of this system is considered to be the **INFINEON XMC1100 Boot Kit.**

6. Software

This project was developed using **Dave 4.1.4**. This development software is a Eclipse based IDE and can be used to

develop applications that use the XMC boards.

The source code of the function that sets the LEDs on and off is shown below.

```c
#define bit0 32

#define bit1 16

#define bit2 8

#define bit3 4

#define bit4 2

#define bit5 1

int count = 0;

void LED_Toggle_EverySec(void)

{

  if(count == 60)

      count = 0;

  count++;

  if((count & bit0) == bit0)

      DIGITAL_IO_SetOutputLow (&led0);

  else DIGITAL_IO_SetOutputHigh (&led0);

  if((count & bit1) == bit1)

      DIGITAL_IO_SetOutputLow (&led1);

  else DIGITAL_IO_SetOutputHigh (&led1);

  if((count & bit2) == bit2)

      DIGITAL_IO_SetOutputLow (&led2);

  else DIGITAL_IO_SetOutputHigh (&led2);

  if((count & bit3) == bit3)

      DIGITAL_IO_SetOutputLow (&led3);

  else DIGITAL_IO_SetOutputHigh (&led3);

  if((count & bit4) == bit4)

      DIGITAL_IO_SetOutputLow (&led4);

  else DIGITAL_IO_SetOutputHigh (&led4);

  if((count & bit5) == bit5)

      DIGITAL_IO_SetOutputLow (&led5);

  else DIGITAL_IO_SetOutputHigh (&led5);

}
```

7. Project results & applications

The project counts the seconds and displays their values, represented in binary system, on the 6 leds that are incorporated on the board. This system works and displays the results correctly.

8. Reference

http://www.embedac.ro/Infineon/index.html