```
                                        //Handout on GPIO
/*
===============================================================================
 Name        : Hello_world.c
 Author      : HL/JZ
 Version     : 1
 Copyright   : $(copyright)
 Description : main definition
===============================================================================
*/

#ifdef __USE_CMSIS
#include "LPC17xx.h"
#endif

#include <cr_section_macros.h>
#include <stdio.h>

//Initialize the port and pin as outputs.
void GPIOinitOut(uint8_t portNum, uint32_t pinNum)
{
	if (portNum == 0)
	{
		LPC_GPIO0->FIODIR |= (1 << pinNum);
	}
	else if (portNum == 1)
	{
		LPC_GPIO1->FIODIR |= (1 << pinNum);
	}
	else if (portNum == 2)
	{
		LPC_GPIO2->FIODIR |= (1 << pinNum);
	}
	else
	{
		puts("Not a valid port!\n");
	}
}

void setGPIO(uint8_t portNum, uint32_t pinNum)
{
	if (portNum == 0)
	{
		LPC_GPIO0->FIOSET = (1 << pinNum);
		printf("Pin 0.%d has been set.\n",pinNum);
	}
	//Can be used to set pins on other ports for future modification
	else
	{
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                puts("Only port 0 is used, try again!\n");
        }
}

//Deactivate the pin
void clearGPIO(uint8_t portNum, uint32_t pinNum)
{
        if (portNum == 0)
        {
                LPC_GPIO0->FIOCLR = (1 << pinNum);
                printf("Pin 0.%d has been cleared.\n", pinNum);
        }
        //Can be used to clear pins on other ports for future modification
        else
        {
                puts("Only port 0 is used, try again!\n");
        }
}

int main(void)
{
   // Force the counter to be placed into memory
   volatile static int i = 0 ;
   //Set pin 0.2 as output
        GPIOinitOut(0,2);
        //Set pin 0.3 as output
        GPIOinitOut(0,3);

   while(1)
   {
        printf("Enter a command to activate LED1(1) & LED2(2) or both(3).\n");
      scanf("%d", &i);

                if (i == 1)
                {
                        //Activate pin 0.2
                        setGPIO(0,2);
                }
                else if (i == 2)
                {
                        //Activate pin 0.3
                        setGPIO(0, 3);
                }
                else if (i == 3)
                {
                        //Activate both pins
                        setGPIO(0, 2);
                        setGPIO(0, 3);
                }
```

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                else
                {
                        puts("Not a valid option!\n");
                }
                        //Deactivate pins
                        clearGPIO(0, 2);
                        clearGPIO(0, 3);
    }
    //0 should never be returned, due to infinite while loop
    return 0;
}
```