TI DSP, MCU, Xilinx Zynq FPGA
프로그래밍 전문가 과정

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진행상황
문제점

I2C - Lidar

```
int main(void)
{
    char txt_buf[256] = { 0 };
    unsigned int buf_len;
    volatile int i ;
    int cnt = 1;
    uint16 ave[2] = { 0 };

    sciInit();
    disp_set("SCI Configuration Success!!\n\r\0");

    i2cInit();
    wait(10000000);
    disp_set("I2C Init Success!!\n\r\0");

     Lidar_enable();
     disp_set("Lidar Enable Success!!\n\r\0");
     wait(1000000);for (;;)
    {
        Get_Data();
         if (g_acc_flag)
        {
             uint16 tmp;
             tmp = receives[0] << 8;
             tmp |= receives[1];
```

```
if (cnt % 3 == 0)
 {
    tmp = (ave[0] + ave[1]) / 2;
    sprintf(txt_buf, "Distance = %d\n\r\0", tmp);
    buf_len = strlen(txt_buf);
    sciDisplayText(sciREG1, (uint8 *) txt_buf, buf_len);
              i = 0;
              cnt++;
              g_acc_flag = 0;
  }

 else
  {
      ave[i] = tmp;
      i++;
      cnt++;
      g_acc_flag = 0;
   }
}

Lidar_without_bias();
bias_cnt++;
if(bias_cnt == 100){
   Lidar_bias();
    bias_cnt = 0;
        }
    }

}
```

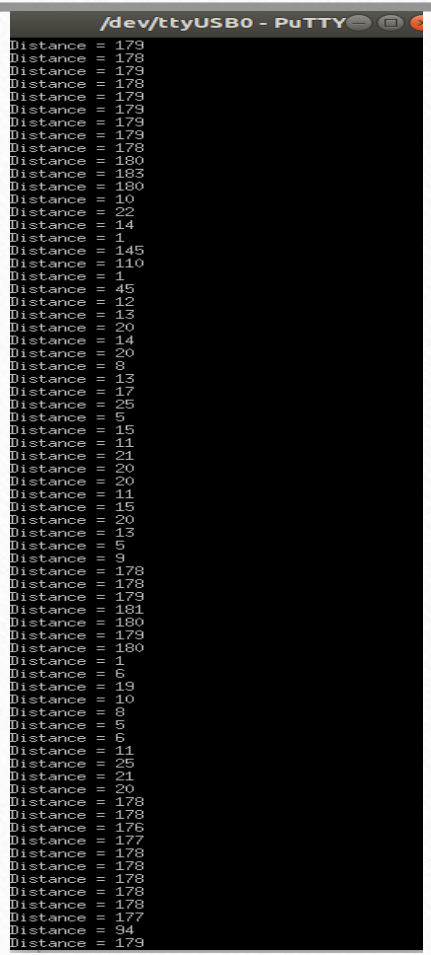
진행상황
문제점

I2C - Lidar

```
void Lidar_enable(void)
{
    uint8 tmp[4] = { 0x80, 0x08, 0x00, 0x04 };
    volatile unsigned int cnt = 7;
    i2cSetSlaveAdd(i2cREG2, LIDAR_SLAVE_ADDR);
    i2cSetDirection(i2cREG2, I2C_TRANSMITTER);
    i2cSetCount(i2cREG2, cnt + 1);
    i2cSetMode(i2cREG2, I2C_MASTER);
    i2cSetStop(i2cREG2);
    i2cSetStart(i2cREG2);
    i2cSendByte(i2cREG2, SIG_COUNT_VAL);
    i2cSend(i2cREG2, 1, &tmp[0]); //0x80
    i2cSendByte(i2cREG2, ACQ_CONFIG_REG);
    i2cSend(i2cREG2, 1, &tmp[1]); //0x08
    i2cSendByte(i2cREG2, THRESHOLD_BYPASS);
    i2cSend(i2cREG2, 1, &tmp[2]); //0x00
    i2cSendByte(i2cREG2, ACQ_COMMAND);
    i2cSend(i2cREG2, 1, &tmp[3]); //0x04
    disp_set("Lidar tmp 1 Enable Success!!\n\r\0");

    while (i2cIsBusBusy(i2cREG2) == true)
        ;
    while (i2cIsStopDetected(i2cREG2) == 0)
        ;

    i2cClearSCD(i2cREG2);
    wait(100000);
}
```



I2C - LCD

```
void LCD_enable(void) //LCD는 16*2 QAPASS LCD with I2C Module
{
    volatile unsigned int cnt = 2;
    unsigned char data[2] = {16, 2};

    i2cSetSlaveAdd(i2cREG2, LCD_ADDR); //LCD_ADDR = 0x27 // 간혹 0x3F인 경우도 있다 //i2c 버스에서 통신할 slave 장치 주소 지정
    i2cSetDirection(i2cREG2, I2C_TRANSMITTER);  //전송 방향 결정
    i2cSetCount(i2cREG2, cnt + 1);
    i2cSetMode(i2cREG2, I2C_MASTER);
    i2cSetStop(i2cREG2);
    i2cSetStart(i2cREG2);
    i2cSendByte(i2cREG2, LCD_ADDR);
    disp_set("MPU6050 tmp 1 Enable Success!!\n\r\0");
    i2cSend(i2cREG2, cnt, data); //i2cReceive
    disp_set("MPU6050 tmp 2Enable Success!!\n\r\0");

    while(i2cIsBusBusy(i2cREG2) == true);
    while(i2cIsStopDetected(i2cREG2) == 0);
    i2cClearSCD(i2cREG2);

    wait(100000);
}
```

진행상황
문제점

RTOS – Lidar, MPU6050

```
int main(void)
{
  gioInit();
  sciInit();
  etpwmInit();
  i2cInit();

  wait(1000000);

    disp_set("GIO, SCI, PWM, I2C Init Success!!\n\r\0");

    if(xTaskCreate(LIDAR, "Task1" , configMINIMAL_STACK_SIZE, NULL, 1, &xTask1Handle) !=pdTRUE){
    while(1)
  ;
  }

  vTaskStartScheduler();

    while(1)
   ;

    return 0;
}
```

감사합니다