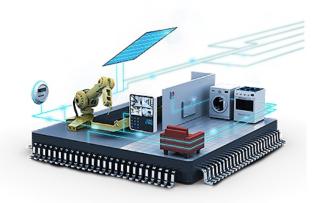
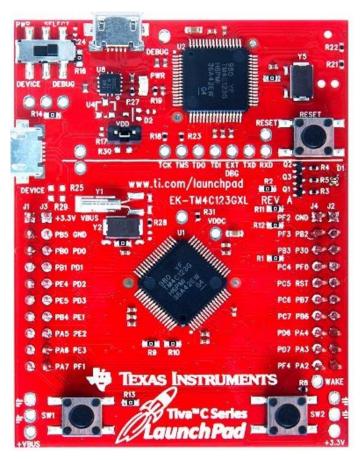
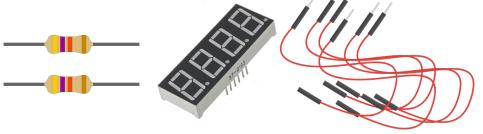
# Seri Port & 7 Sesment Display

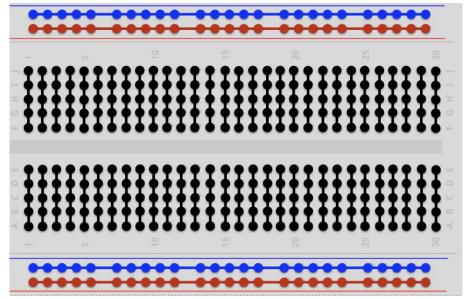


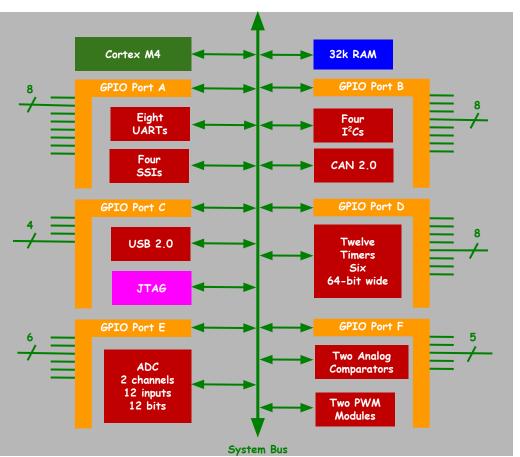


Suhap SAHIN

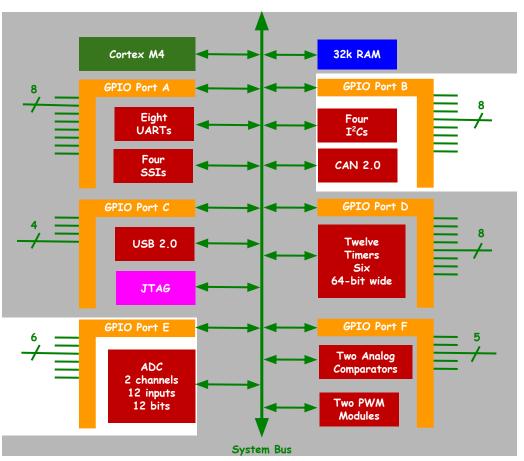




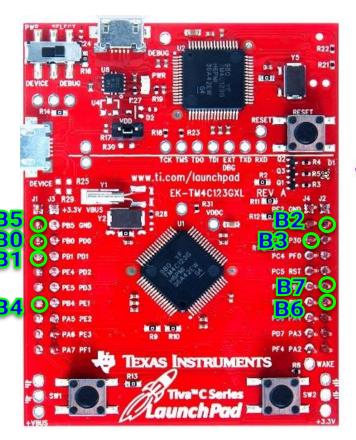


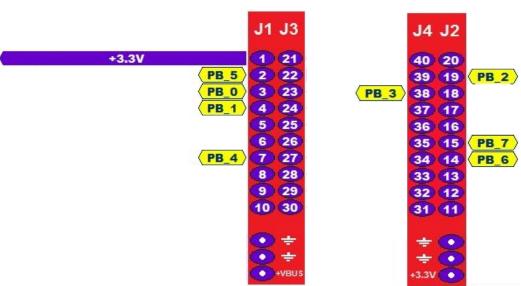


# 7 Parcall Gosterse

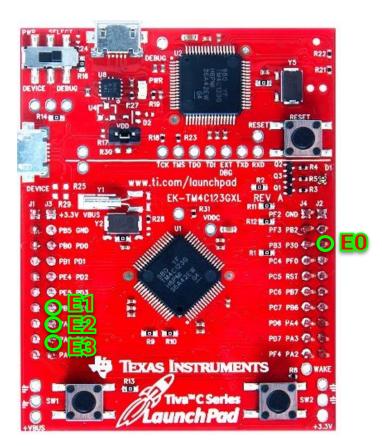


### Tiva & Stellaris Port Baglantilari





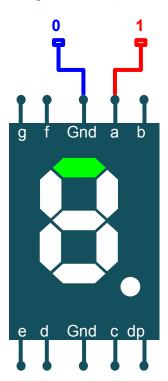
### Tiva & Stellaris Port Baglantilari

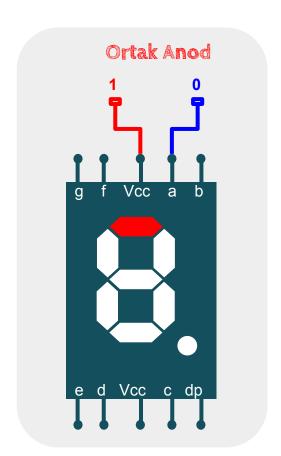


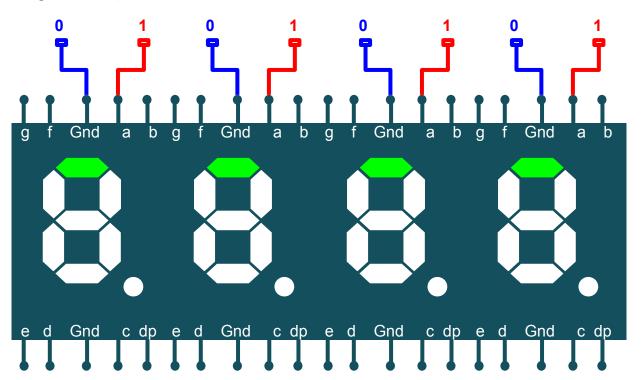


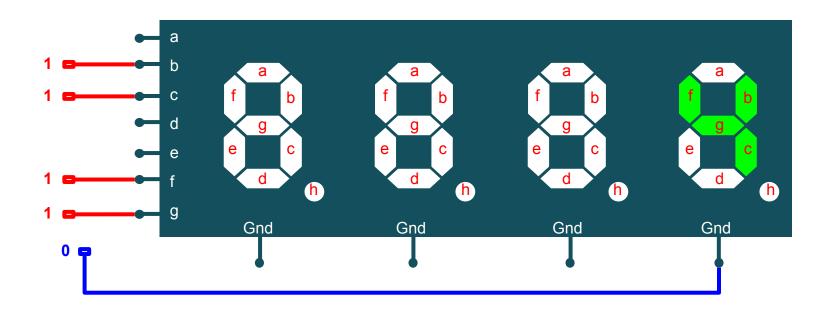


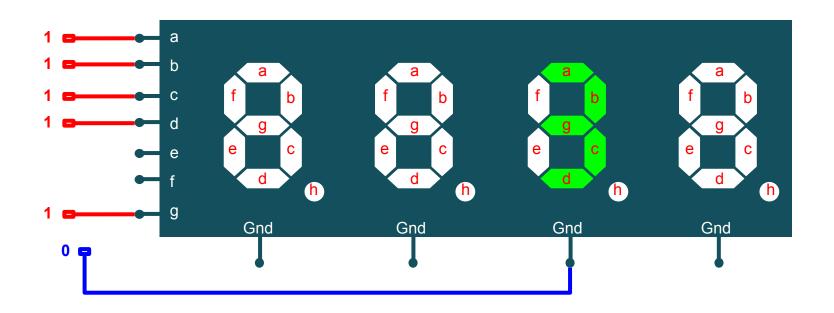
0b0111111 0b0000110 0b1011011 0b1001111 0b1100110 0b1101101 5 0b1111101 0b0000111 8 0b1111111 0b1101111

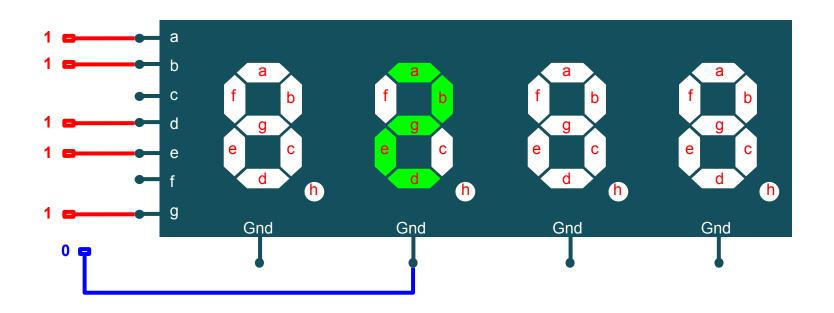


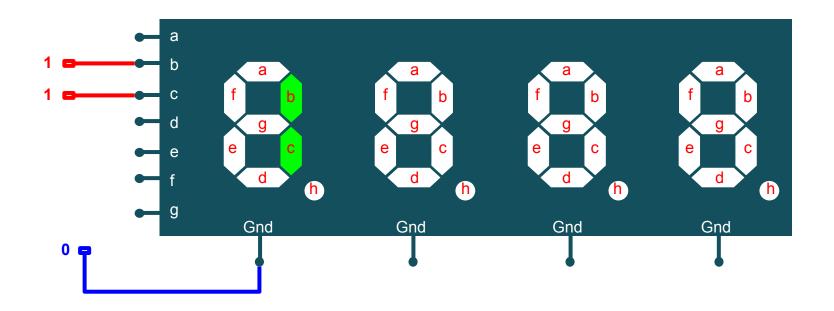




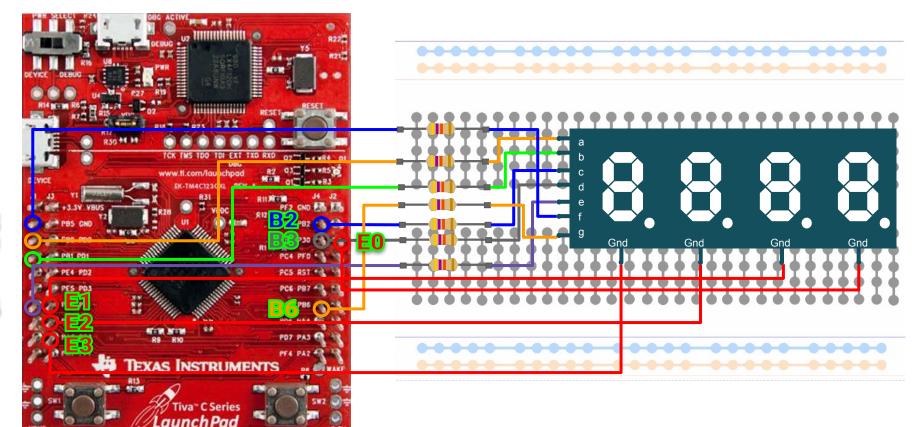








### Elektronik Devre Kurulumu

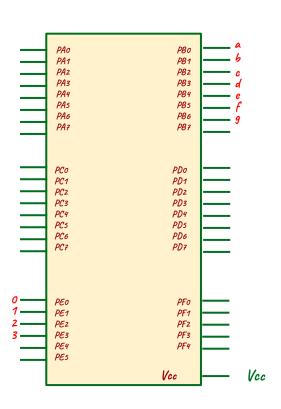


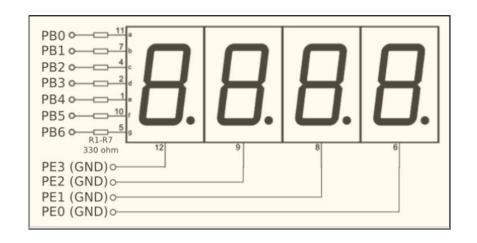






### Elektronik Devre Kurulumu





```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"

void init_port_B() {
    volatile unsigned long delay;
    SYSCTL_RCGC2_R |= SYSCTL_RCGC2_GPIOB;
    delay = SYSCTL_RCGC2_R;
    GPIO_PORTB_DIR_R |= 0xFF;
    // Port B'nin tüm bitleri cikis olarak ayarla
```

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"

void init_port_B() {

volatile unsigned long delay;

SYSCTL_RCGC2_R |= SYSCTL_RCGC2_GPIOB;

delay = SYSCTL_RCGC2_R;

GPIO_PORTB_DIR_R |= 0xFF;

GPIO_PORTB_AFSEL_R &= ~0xFF;

// Alternatif fonksiyonlar kapat
```

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"

void init_port_B() {

    volatile unsigned long delay;

    SYSCTL_RCGC2_R |= SYSCTL_RCGC2_GPIOB;

    delay = SYSCTL_RCGC2_R;

    GPIO_PORTB_DIR_R |= 0xFF;

    GPIO_PORTB_AFSEL_R &= ~0xFF;

    GPIO_PORTB_DEN_R |= 0xFF;

    GPIO_PORTB_DEN_R |= 0xFF;

    GPIO_PORTB_DEN_R |= 0xFF;

    // Alternatif fonksiyonlar kapat

    // Tüm Port B için Digital çalışmayı aktifleştir
```

```
void init_port_E() {
    volatile unsigned long delay;
    SYSCTL_RCGC2_R |= SYSCTL_RCGC2_GPIOE;
    delay = SYSCTL_RCGC2_R;
    GPIO_PORTE_DIR_R |= 0x0F;
    GPIO_PORTE_AFSEL_R &= ~0x0F;
    GPIO_PORTE_DEN_R |= 0x0F;
    // Alternatif fonksiyonlar kapat
    GPIO_PORTE_DEN_R |= 0x0F;
    // Tüm Port E için Digital çalışmayı aktifleştir
```

### Seven Segment Tablosu

```
uint8 t kodlar[10] = {
   0b0111111,
   0b0000110,
   0b1011011,
   0b1001111,
   0b1100110,
   0b1101101,
   0b1111101,
   0b0000111,
   0b1111111,
   0b1101111
```

int main() {
 volatile unsigned long delay;
// Seven Segment Tablosu buraya yazılacak

# 4 Digit Seven Segment

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
```



```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
```



```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
```

```
4 Digit Seven Segment
```

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
        int birler = sayi % 10;
    }
}
```

```
4 Digit Seven Segment
```

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
        int birler = sayi % 10;
            GPIO_PORTE_DATA_R |= 0b1111; // hepsini kapat
```

```
4 Digit Seven Segment
```

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
        int birler = sayi % 10;
            GPIO_PORTE_DATA_R |= 0b1111; // hepsini kapat
            GPIO_PORTB_DATA_R = kodlar[birler];
```

```
4 Digit Seven Segment
```

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
        int birler = sayi % 10;
            GPIO_PORTE_DATA_R |= 0b1111; // hepsini kapat
            GPIO_PORTB_DATA_R = kodlar[birler];
            GPIO_PORTE_DATA_R &= ~0b0001; // birler basamagini aktiflestir
```

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
        int birler = sayi % 10;
            GPIO_PORTE_DATA_R |= 0b1111; // hepsini kapat
            GPIO_PORTB_DATA_R = kodlar[birler];
            GPIO_PORTE_DATA_R &= ~0b0001; // birler basamagini aktiflestir
            for (delay = 0 ; delay < BEKLEME_LIMIT ; delay++)/* bekle */;</pre>
```

```
4 Digit Seven Segment
```

```
int main() {
    volatile unsigned long delay;
    // Seven Segment Tablosu buraya yazılacak
    init_port_B();
    init_port_E();
    int sayi = 1234;
    const int BEKLEME_LIMIT = 10000;
    while (1) {
        int birler = sayi % 10;
            GPIO_PORTE_DATA_R |= 0b1111; // hepsini kapat
            GPIO_PORTB_DATA_R = kodlar[birler];
            GPIO_PORTE_DATA_R &= ~0b0001; // birler basamagini aktiflestir
            for (delay = 0 ; delay < BEKLEME_LIMIT ; delay++)/* bekle */;
            int onlar = (sayi / 10) % 10;</pre>
```

```
4 Digit Seven Segment
```

```
int main() {
 volatile unsigned long delay;
 // Seven Segment Tablosu buraya yazılacak
 init port B();
 init port E();
 int sayi = 1234;
 const int BEKLEME LIMIT = 10000;
 while (1) {
   int birler = sayi % 10;
    GPIO PORTE DATA R |= 0b1111; // hepsini kapat
    GPIO PORTB DATA R = kodlar[birler];
    GPIO PORTE DATA R &= ~0b0001; // birler basamagini aktiflestir
    for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
    int onlar = (sayi / 10) % 10;
    GPIO PORTE DATA R |= 0b1111; // hepsini kapat
    GPIO PORTB DATA R = kodlar[onlar];
    GPIO PORTE DATA R &= ~0b0010; // onlar basamagini aktiflestir
```

for (delay = 0; delay < BEKLEME LIMIT; delay++)/\* bekle \*/;

```
4 Digit Seven Segment
```

```
int main() {
 volatile unsigned long delay;
                                                     4 Digit Seven Segment
 // Seven Segment Tablosu buraya yazılacak
 init port B();
 init port E();
 int sayi = 1234;
 const int BEKLEME LIMIT = 10000;
 while (1) {
   int birler = sayi % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[birler];
   GPIO PORTE DATA R &= ~0b0001; // birler basamagini aktiflestir
   for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
   int onlar = (sayi / 10) % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[onlar];
   GPIO PORTE DATA R &= ~0b0010; // onlar basamagini aktiflestir
   for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
   int yuzler = (sayi / 100) % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[yuzler];
   GPIO PORTE DATA R &= ~0b0100; // yuzler basamagini aktiflestir
```

for (delay = 0; delay < BEKLEME LIMIT; delay++) /\* bekle \*/;

```
int main() {
 volatile unsigned long delay;
 // Seven Segment Tablosu buraya yazılacak
 init port B();
 init port E();
 int sayi = 1234;
 const int BEKLEME LIMIT = 10000;
 while (1) {
   int birler = sayi % 10;
    GPIO PORTE DATA R |= 0b1111; // hepsini kapat
    GPIO PORTB DATA R = kodlar[birler];
    GPIO PORTE DATA R &= ~0b0001; // birler basamagini aktiflestir
    for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
    int onlar = (sayi / 10) % 10;
    GPIO PORTE DATA R |= 0b1111; // hepsini kapat
    GPIO PORTB DATA R = kodlar[onlar];
    GPIO PORTE DATA R &= ~0b0010; // onlar basamagini aktiflestir
    for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
    int yuzler = (sayi / 100) % 10;
    GPIO PORTE DATA R |= 0b1111; // hepsini kapat
    GPIO PORTB DATA R = kodlar[yuzler];
    GPIO PORTE DATA R &= ~0b0100; // yuzler basamagini aktiflestir
    for (delay = 0; delay < BEKLEME LIMIT; delay++) /* bekle */;
    int binler = (sayi / 1000) % 10;
    GPIO PORTE DATA R |= 0b1111; // hepsini kapat
    GPIO PORTB DATA R = kodlar[binler];
   GPIO PORTE DATA R &= ~0b1000; // binler basamagini aktiflestir
    for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
```

```
4 Digit Seven Segment
```

```
int main() {
 volatile unsigned long delay;
                                                      4 Digit Seven Segment
 // Seven Segment Tablosu buraya yazılacak
 init port B();
 init port E();
 int sayi = 1234;
 const int BEKLEME LIMIT = 10000;
 while (1) {
   int birler = sayi % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[birler];
   GPIO PORTE DATA R &= ~0b0001; // birler basamagini aktiflestir
   for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
   int onlar = (sayi / 10) % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[onlar];
   GPIO PORTE DATA R &= ~0b0010; // onlar basamagini aktiflestir
   for (delay = 0; delay < BEKLEME LIMIT; delay++)/* bekle */;
   int yuzler = (sayi / 100) % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[yuzler];
   GPIO PORTE DATA R &= ~0b0100; // yuzler basamagini aktiflestir
   for (delay = 0; delay < BEKLEME LIMIT; delay++) /* bekle */;
   int binler = (sayi / 1000) % 10;
   GPIO PORTE DATA R |= 0b1111; // hepsini kapat
   GPIO PORTB DATA R = kodlar[binler];
   GPIO PORTE DATA R &= ~0b1000; // binner basamagini aktiflestir
   for (delay = 0; delay < BEKLEME_LIMIT; delay++)/* bekle */;</pre>
```

```
sayi =sayi+1;
```

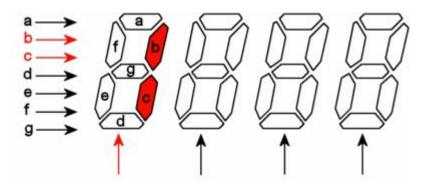
# Es Zamanlislem yapma

islem 2



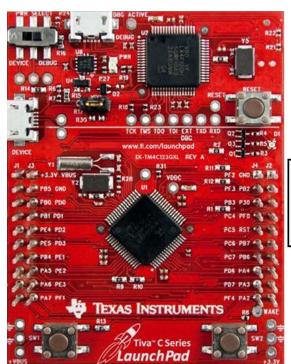
# Es Zamanlislem yapma

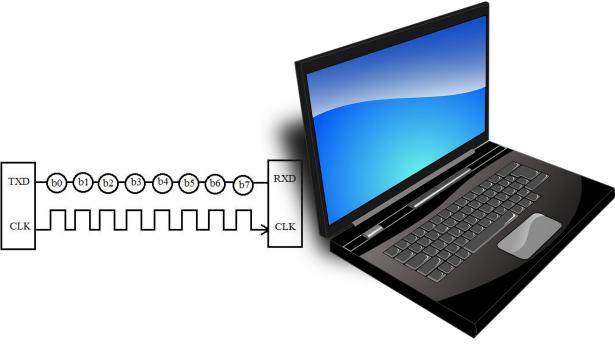
### 



### islem\_2

$$sayi = sayi+1;$$





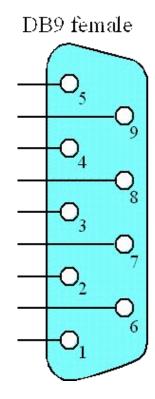
### Tiva & Stellaris Port Baglantilari

TM4C123

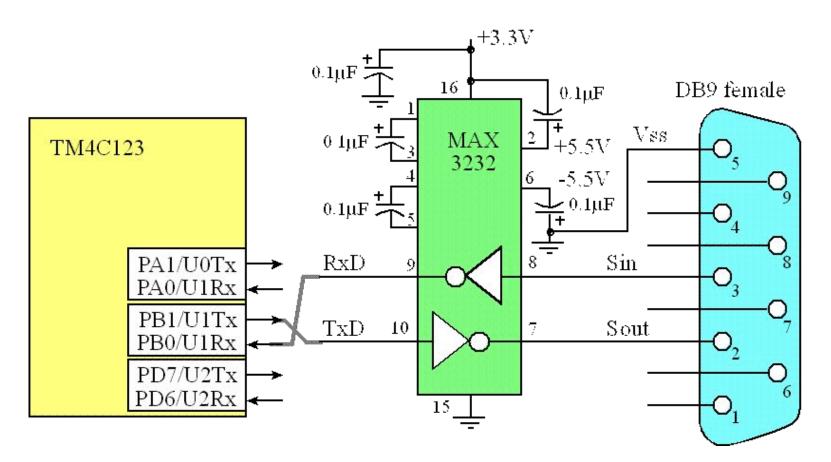
PA1/U0Tx PA0/U1Rx

PB1/U1Tx PB0/U1Rx

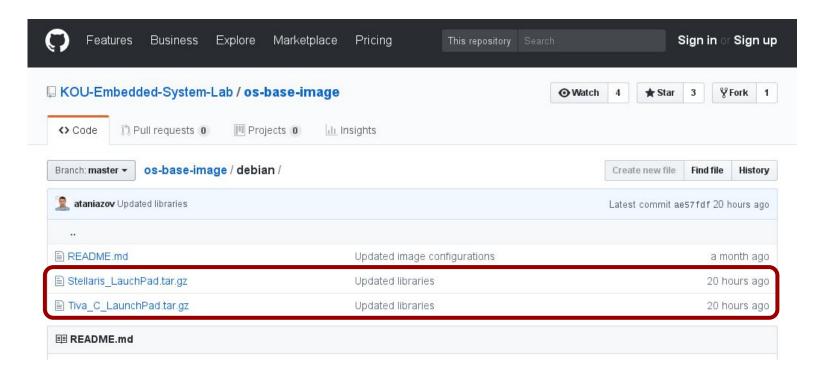
PD7/U2Tx PD6/U2Rx

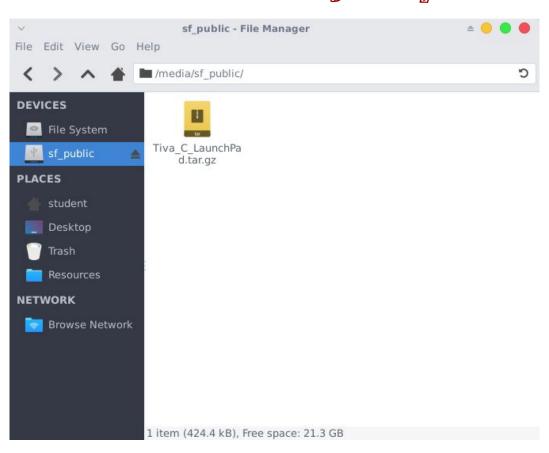


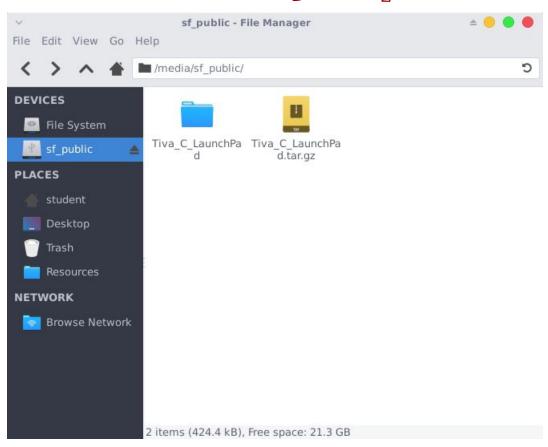
### Tiva & Stellaris Port Baglantilari

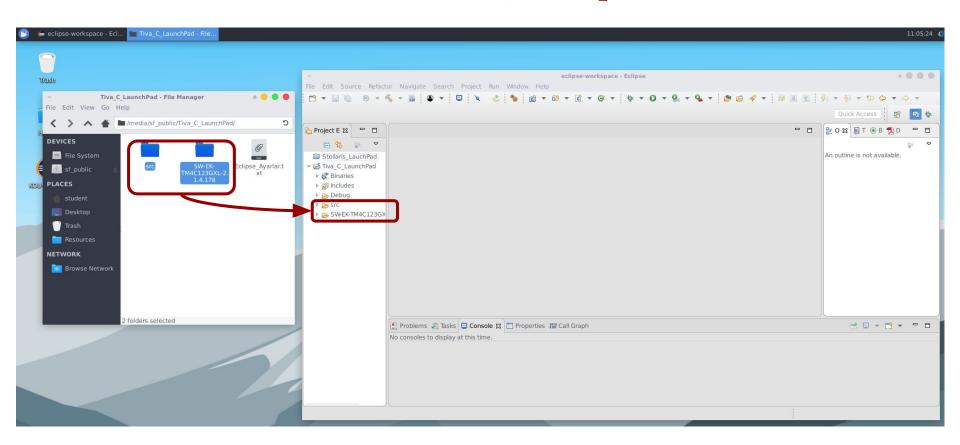


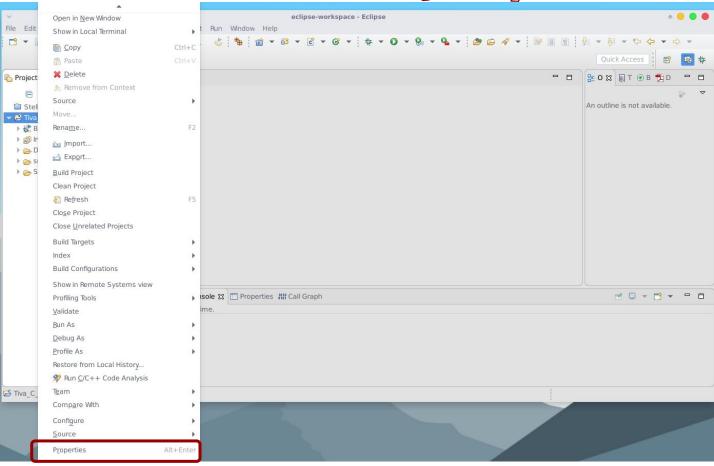
https://github.com/KOU-Embedded-System-Lab/os-base-image/tree/master/debian

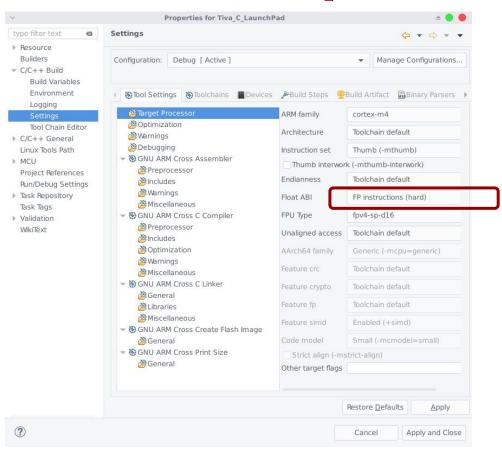












```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"

// stellaris #include "inc/lm4f120h5qr.h"

#include <stdbool.h>
#include "inc/hw_types.h"

#include "driverlib/gpio.h"

#include "driverlib/sysctl.h"

#include "driverlib/uart.h"

#include "utils/uartstdio.h"
```

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"

// stellaris #include "inc/lm4f120h5qr.h"

#include <stdbool.h>
#include "inc/hw_types.h"

#include "driverlib/gpio.h"

#include "driverlib/sysctl.h"

#include "driverlib/sysctl.h"

#include "utils/uartstdio.h"

// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
```

#define BAUDRATE 600

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"

// stellaris #include "inc/lm4f120h5qr.h"

#include <stdbool.h>
#include "inc/hw_types.h"

#include "driverlib/gpio.h"

#include "driverlib/sysctl.h"

#include "driverlib/uart.h"

#include "utils/uartstdio.h"

// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200

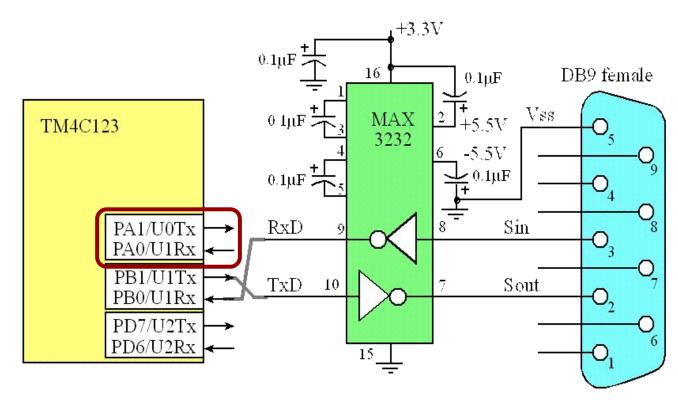
#define BAUDRATE 600

/** UART (seri port) ayarini yapan fonksiyon */

void init_UARTstdio() {
```

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"
// stellaris #include "inc/lm4f120h5qr.h"
#include <stdbool.h>
#include "inc/hw types.h"
#include "driverlib/gpio.h"
#include "driverlib/sysctl.h"
#include "driverlib/uart.h"
#include "utils/uartstdio.h"
// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
#define BAUDRATE 600
/** UART (seri port) ayarini yapan fonksiyon */
void init_UARTstdio() {
       SysCtlPeripheralEnable(SYSCTL PERIPH GPIOA);
```

SysCtlPeripheralEnable(SYSCTL\_PERIPH\_GPIOA);



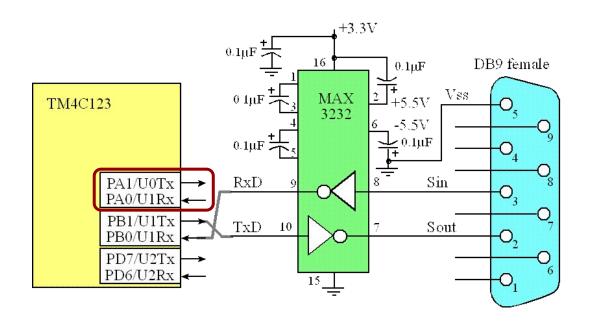
```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"
// stellaris #include "inc/lm4f120h5gr.h"
#include <stdbool.h>
#include "inc/hw types.h"
#include "driverlib/gpio.h"
#include "driverlib/sysctl.h"
#include "driverlib/uart.h"
#include "utils/uartstdio.h"
// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
#define BAUDRATE 600
/** UART (seri port) ayarini yapan fonksiyon */
void init_UARTstdio() {
       SysCtlPeripheralEnable(SYSCTL PERIPH GPIOA); // A portu SSIO çevre birimi kullanım için etkinleştirilir.
       GPIOPinConfigure(0x00000001);
```

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"
// stellaris #include "inc/lm4f120h5qr.h"
#include <stdbool.h>
#include "inc/hw types.h"
#include "driverlib/gpio.h"
#include "driverlib/sysctl.h"
#include "driverlib/uart.h"
#include "utils/uartstdio.h"
// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
#define BAUDRATE 600
/** UART (seri port) ayarini yapan fonksiyon */
void init_UARTstdio() {
       SysCtlPeripheralEnable(SYSCTL PERIPH GPIOA);
       GPIOPinConfigure(0x00000001);
       GPIOPinConfigure(0x00000401);
```

```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"
// stellaris #include "inc/lm4f120h5gr.h"
#include <stdbool.h>
#include "inc/hw types.h"
#include "driverlib/gpio.h"
#include "driverlib/sysctl.h"
#include "driverlib/uart.h"
#include "utils/uartstdio.h"
// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
#define BAUDRATE 600
/** UART (seri port) ayarini yapan fonksiyon */
void init_UARTstdio() {
       SysCtlPeripheralEnable(SYSCTL PERIPH GPIOA);
       GPIOPinConfigure(0x00000001);
       GPIOPinConfigure(0x00000401);
       GPIOPinTypeUART(0x40004000, 0x000000001 | 0x00000002);
```

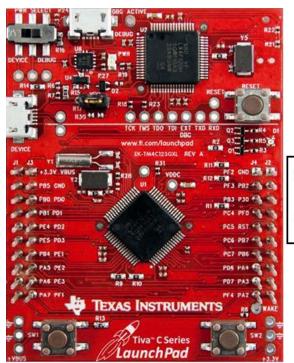
GPIOPinConfigure(0x00000001); GPIOPinConfigure(0x00000401); GPIOPinTypeUART(0x40004000, 0x000000001 | 0x00000002);

// RX:PA0 TX:PA1



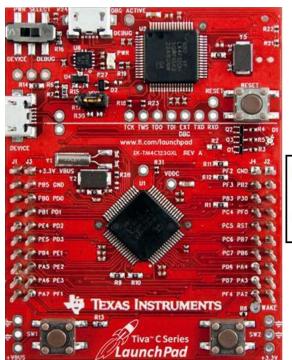
```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"
// stellaris #include "inc/lm4f120h5gr.h"
#include <stdbool.h>
#include "inc/hw types.h"
#include "driverlib/gpio.h"
#include "driverlib/sysctl.h"
#include "driverlib/uart.h"
#include "utils/uartstdio.h"
// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
#define BAUDRATE 600
/** UART (seri port) ayarini yapan fonksiyon */
void init UARTstdio() {
       SysCtlPeripheralEnable(SYSCTL PERIPH GPIOA);
       GPIOPinConfigure(0x00000001);
       GPIOPinConfigure(0x00000401);
       GPIOPinTypeUART(0x40004000, 0x000000001 | 0x00000002);
       UARTConfigSetExpClk(0x40004000, SysCtlClockGet(), BAUDRATE, (UART_CONFIG_WLEN_8 | UART_CONFIG_STOP_ONE |
                     UART CONFIG PAR NONE));
```

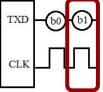
```
#include <stdint.h>
#include "inc/tm4c123gh6pm.h"
// stellaris #include "inc/lm4f120h5gr.h"
#include <stdbool.h>
#include "inc/hw types.h"
#include "driverlib/gpio.h"
#include "driverlib/sysctl.h"
#include "driverlib/uart.h"
#include "utils/uartstdio.h"
// secenekler: 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200
#define BAUDRATE 600
/** UART (seri port) ayarini yapan fonksiyon */
void init UARTstdio() {
       SysCtlPeripheralEnable(SYSCTL PERIPH GPIOA);
       GPIOPinConfigure(0x00000001);
       GPIOPinConfigure(0x00000401);
       GPIOPinTypeUART(0x40004000, 0x000000001 | 0x00000002);
       UARTConfigSetExpClk(0x40004000, SysCtlClockGet(), BAUDRATE, (UART_CONFIG_WLEN_8 | UART_CONFIG_STOP_ONE |
                    UART CONFIG PAR NONE));
       UARTStdioConfig(0, BAUDRATE, SysCtlClockGet());
```



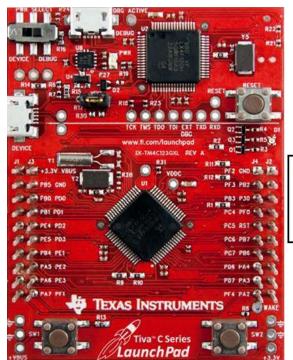


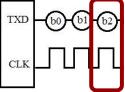




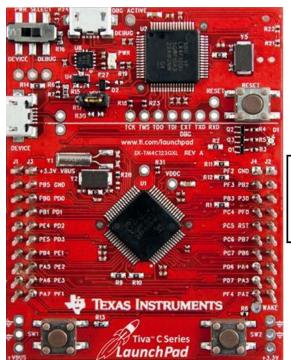


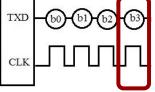




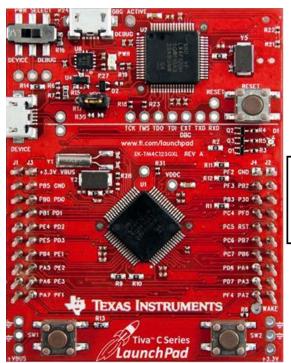


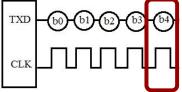




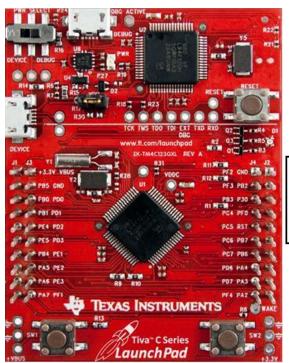


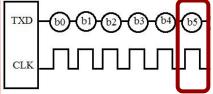




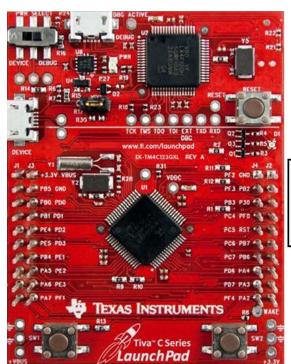


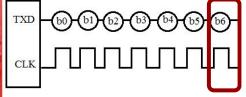




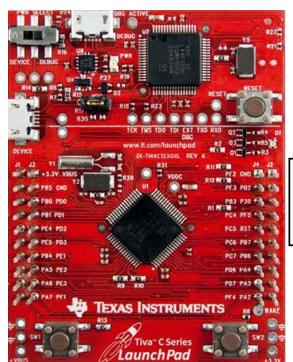


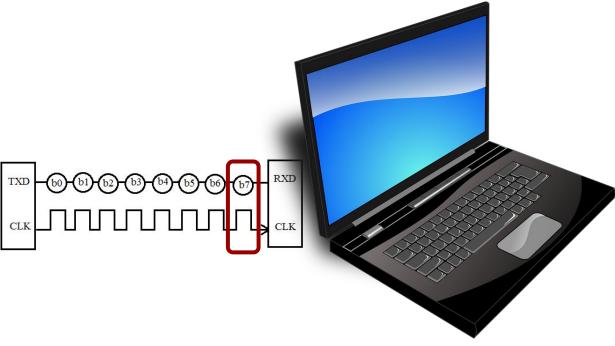








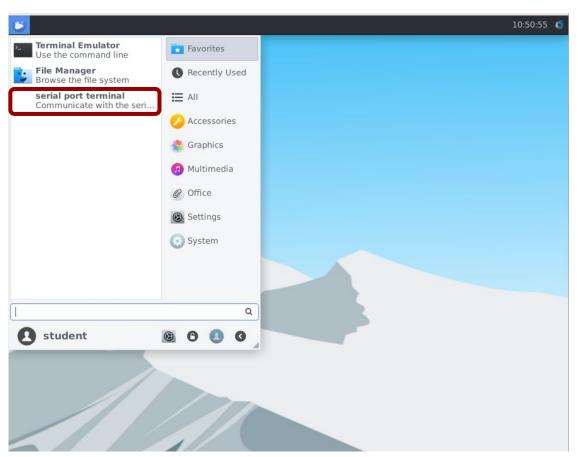


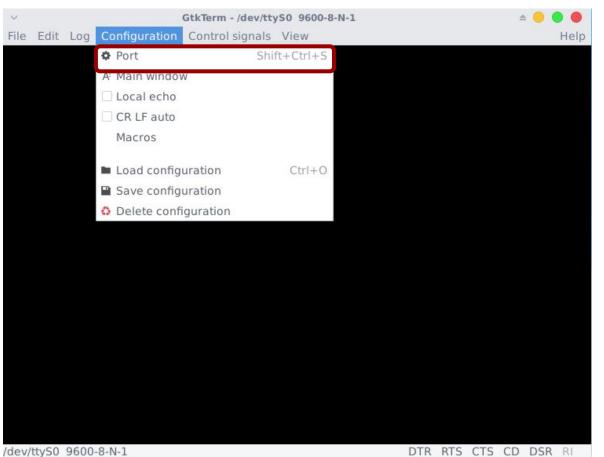


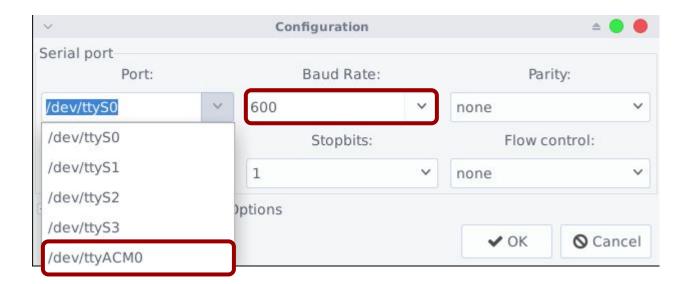
```
int main(void) {
     int i;

init_UARTstdio();

for (i = 0 ; ; i++) {
     UARTprintf("test: %d\n", i);
     }
}
```







# SOFULAT

