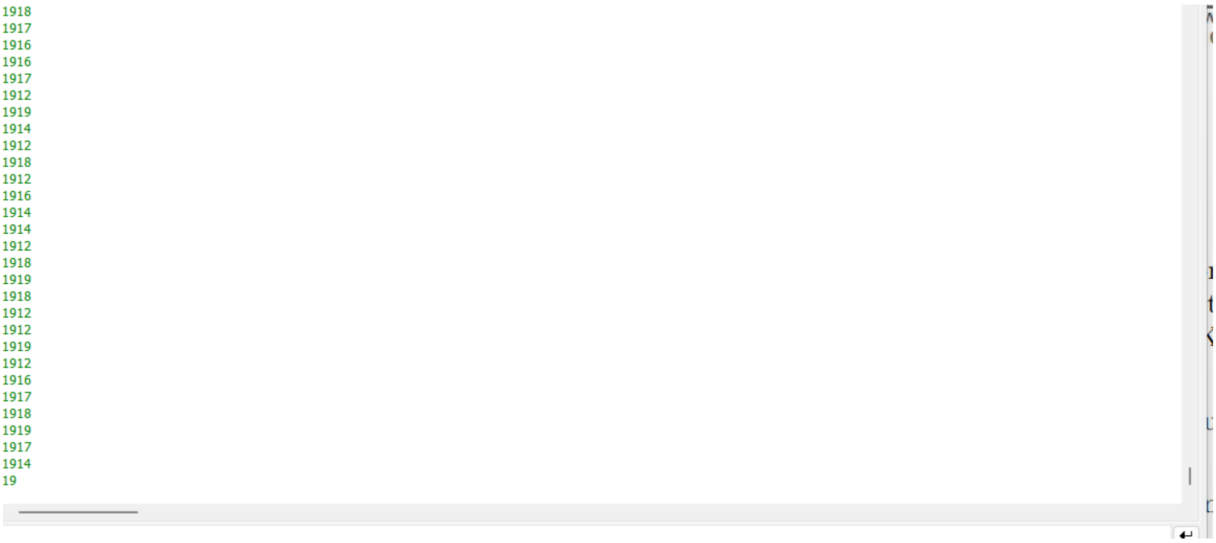
Alper Kutay ÖZBEK
2375467

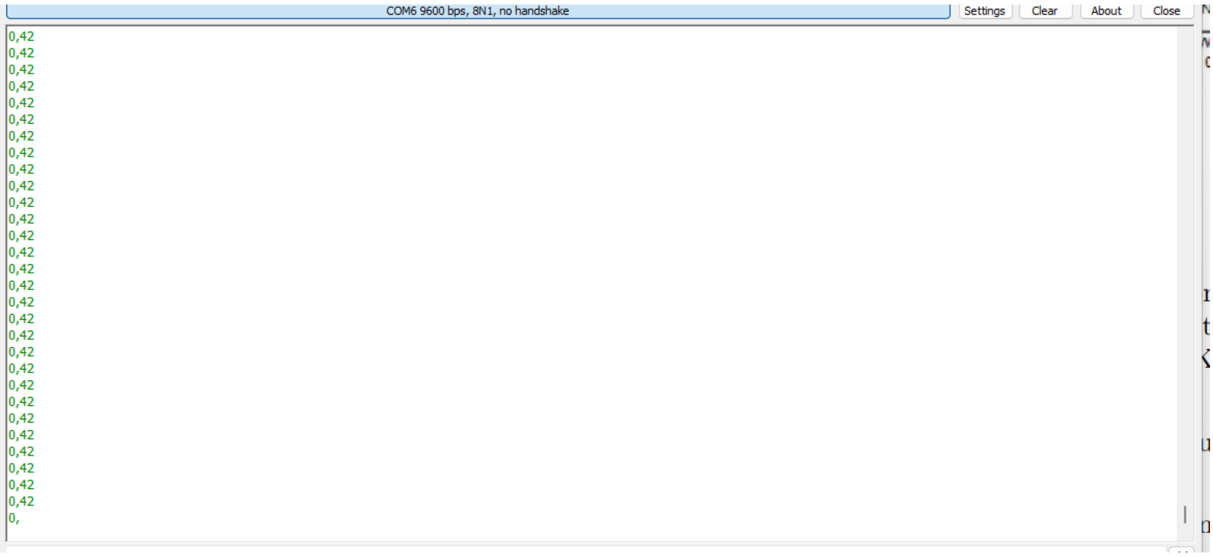
Codes are uploaded

Q1-



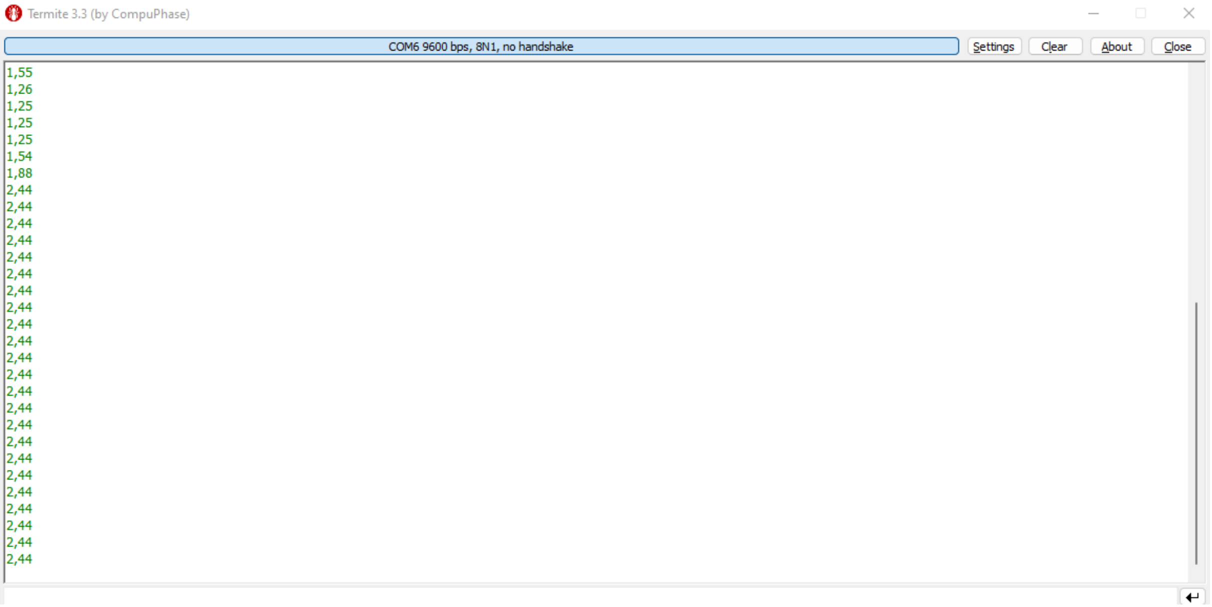
```
1918
1917
1916
1916
1917
1912
1919
1914
1912
1918
1912
1916
1914
1914
1912
1918
1919
1918
1912
1912
1919
1912
1916
1917
1918
1919
1917
1914
19
```

Q3-



```
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,42
0,
```

Q4-



```
1,55
1,26
1,25
1,25
1,25
1,54
1,88
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
2,44
```

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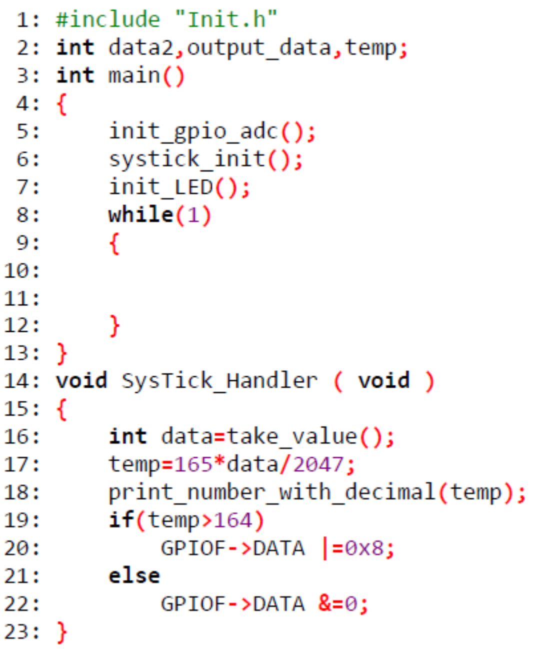
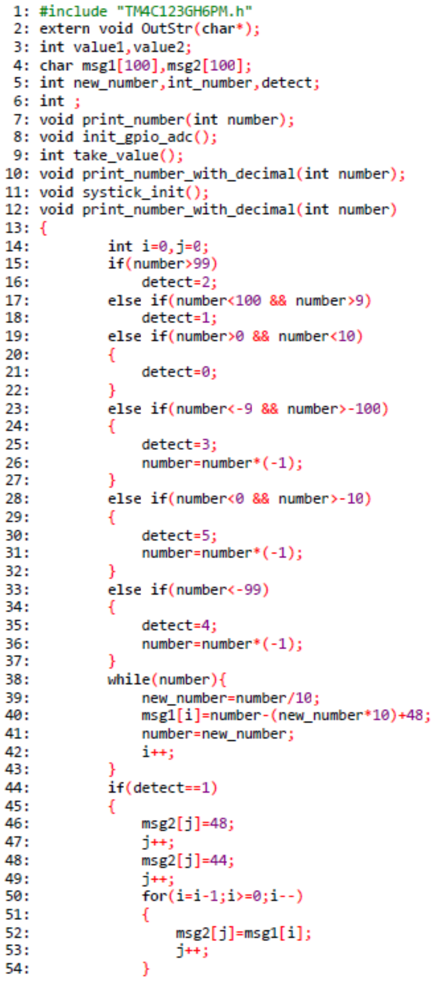
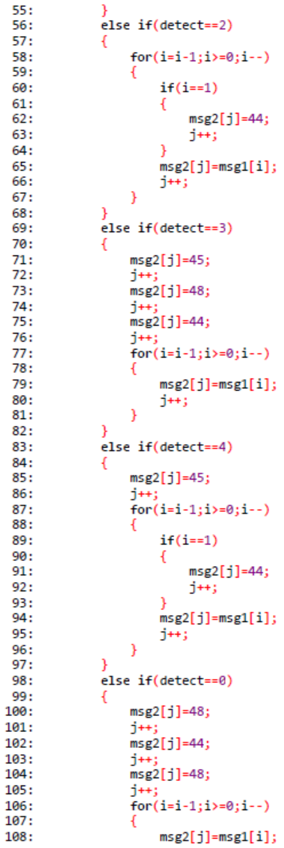
Q5-



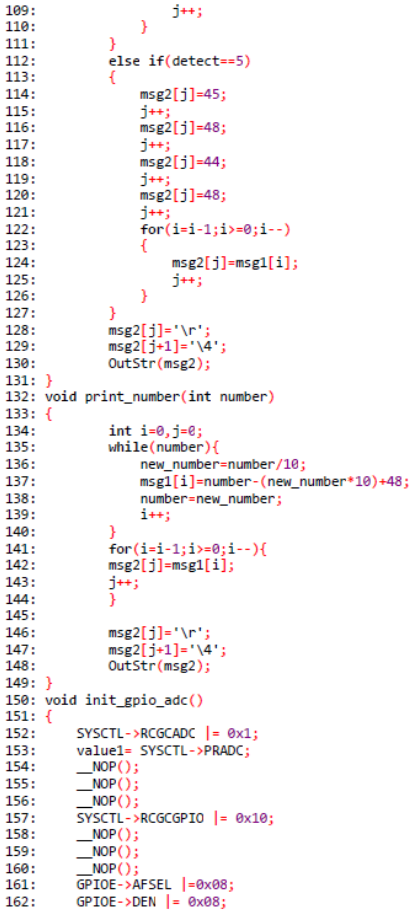
```c
#include "Init.h"
int data2,output_data,temp;
int main()
{
    init_gpio_adc();
    systick_init();
    init_LED();
    while(1)
    {


    }
}
void SysTick_Handler ( void )
{
    int data=take_value();
    temp=165*data/2047;
    print_number_with_decimal(temp);
    if(temp>164)
        GPIOF->DATA |=0x8;
    else
        GPIOF->DATA &=0;
}
```



```c
#include "TM4C123GH6PM.h"
extern void OutStr(char*);
int value1,value2;
char msg1[100],msg2[100];
int new_number,int_number,detect;
int ;
void print_number(int number);
void init_gpio_adc();
int take_value();
void print_number_with_decimal(int number);
void systick_init();
void print_number_with_decimal(int number)
{
        int i=0,j=0;
        if(number>99)
            detect=2;
        else if(number<100 && number>9)
            detect=1;
        else if(number>0 && number<10)
        {
            detect=0;
        }
        else if(number<-9 && number>-100)
        {
            detect=3;
            number=number*(-1);
        }
        else if(number<0 && number>-10)
        {
            detect=5;
            number=number*(-1);
        }
        else if(number<-99)
        {
            detect=4;
            number=number*(-1);
        }
        while(number){
            new_number=number/10;
            msg1[i]=number-(new_number*10)+48;
            number=new_number;
            i++;
        }
        if(detect==1)
        {
            msg2[j]=48;
            j++;
            msg2[j]=44;
            j++;
            for(i=i-1;i>=0;i--)
            {
                msg2[j]=msg1[i];
                j++;
            }
```



```
        }
        else if(detect==2)
        {
            for(i=i-1;i>=0;i--)
            {
                if(i==1)
                {
                    msg2[j]=44;
                    j++;
                }
                msg2[j]=msg1[i];
                j++;
            }
        }
        else if(detect==3)
        {
            msg2[j]=45;
            j++;
            msg2[j]=48;
            j++;
            msg2[j]=44;
            j++;
            for(i=i-1;i>=0;i--)
            {
                msg2[j]=msg1[i];
                j++;
            }
        }
        else if(detect==4)
        {
            msg2[j]=45;
            j++;
            for(i=i-1;i>=0;i--)
            {
                if(i==1)
                {
                    msg2[j]=44;
                    j++;
                }
                msg2[j]=msg1[i];
                j++;
            }
        }
        else if(detect==0)
        {
            msg2[j]=48;
            j++;
            msg2[j]=44;
            j++;
            msg2[j]=48;
            j++;
            for(i=i-1;i>=0;i--)
            {
                msg2[j]=msg1[i];
```



```
                j++;
            }
        }
        else if(detect==5)
        {
            msg2[j]=45;
            j++;
            msg2[j]=48;
            j++;
            msg2[j]=44;
            j++;
            msg2[j]=48;
            j++;
            for(i=i-1;i>=0;i--)
            {
                msg2[j]=msg1[i];
                j++;
            }
        }
        msg2[j]='\r';
        msg2[j+1]='\4';
        OutStr(msg2);
}
void print_number(int number)
{
        int i=0,j=0;
        while(number){
            new_number=number/10;
            msg1[i]=number-(new_number*10)+48;
            number=new_number;
            i++;
        }
        for(i=i-1;i>=0;i--){
        msg2[j]=msg1[i];
        j++;
        }

        msg2[j]='\r';
        msg2[j+1]='\4';
        OutStr(msg2);
}
void init_gpio_adc()
{
    SYSCTL->RCGCADC |= 0x1;
    value1= SYSCTL->PRADC;
    __NOP();
    __NOP();
    __NOP();
    SYSCTL->RCGCGPIO |= 0x10;
    __NOP();
    __NOP();
    __NOP();
    GPIOE->AFSEL |=0x08;
    GPIOE->DEN |= 0x08;
```

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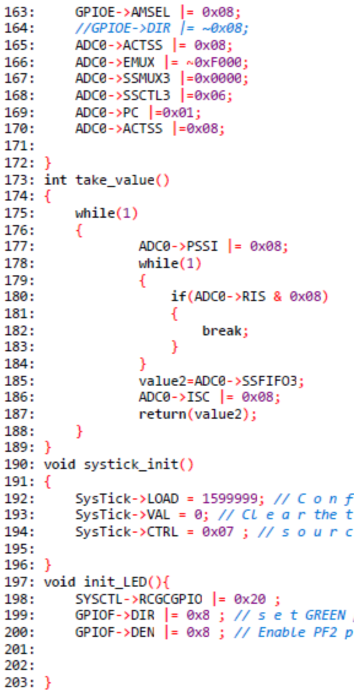

```
    GPIOE->AMSEL |= 0x08;
    //GPIOE->DIR |= ~0x08;
    ADC0->ACTSS |= 0x08;
    ADC0->EMUX |= ~0xF000;
    ADC0->SSMUX3 |=0x0000;
    ADC0->SSCTL3 |=0x06;
    ADC0->PC |=0x01;
    ADC0->ACTSS |=0x08;

}
int take_value()
{
    while(1)
    {
            ADC0->PSSI |= 0x08;
            while(1)
            {
                if(ADC0->RIS & 0x08)
                {
                    break;
                }
            }
            value2=ADC0->SSFIFO3;
            ADC0->ISC |= 0x08;
            return(value2);
    }
}
void systick_init()
{
    SysTick->LOAD = 1599999; // Conf
    SysTick->VAL = 0; // Clear the t
    SysTick->CTRL = 0x07 ; // sourc

}
void init_LED(){
    SYSCTL->RCGCGPIO |= 0x20 ;
    GPIOF->DIR |= 0x8 ; // set GREEN
    GPIOF->DEN |= 0x8 ; // Enable PF2 p


}
```