อธิบายCode 2-1 : LIS302DL

Accelerometer Initiation :

```
HAL_GPIO_WritePin(GPIOE,GPIO_PIN_3,GPIO_PIN_RESET);
uint8_t address = 0x20;
HAL_SPI_Transmit(&hspi1,&address,1,50);

uint8_t data = 0x67;
HAL_SPI_Transmit(&hspi1,&data,1,50);

HAL_GPIO_WritePin(GPIOE,GPIO_PIN_3,GPIO_PIN_SET);
```

Get acceleration in each axis :

```
address = 0x29+ 0x80;    //x
HAL_SPI_Transmit(&hspi1,&address,1,50);
HAL_SPI_Receive(&hspi1,&temp,1,50);
x=temp; // cast from uint -> int

address = 0x2B+ 0x80;    //y
HAL_SPI_Transmit(&hspi1,&address,1,50);
HAL_SPI_Receive(&hspi1,&temp,1,50);
y=temp;

address = 0x2D+ 0x80;    //z
HAL_SPI_Transmit(&hspi1,&address,1,50);
HAL_SPI_Receive(&hspi1,&temp,1,50);
z=temp;
```

Set acceleration values from 0-255 to +-2.0g and covert them into char using sprintf:

```
if( x>=0 && x<127 ){
  floatx=x%69*100/69;
  x=x/69.0;
  mark ='+';
} else if( x>=127 && x<256 ){
  x=255-x;
 floatx=x%69*100/69;
  x=x/69.0;
  mark ='-';
} sprintf(decx,"%c%d.%dg",mark,x,floatx);
if( y>=0 && y<127 ){
  floaty=y%69*100/69;
  y=y/69.0;
  mark ='+';
} else if( y>=127 && y<256 ){
  y=255-y;
 floaty=y%69*100/69;
  y=y/69.0;
  mark ='-';
} sprintf(decy,"%c%d.%dg",mark,y,floaty);
```

```
if( z>=0 && z<127 ){
 floatz=z%69*100/69;
    z=z/69;
    mark ='+';
} else if( z>=127 && z<256 ){
  z=255-z;
 floatz=z%69*100/69;
  z=z/69.0;
  mark ='-';
} sprintf(decz,"%c%d.%dg",mark,z,floatz);
```

Transmit the result :

```
int i = 0;
HAL_UART_Transmit(&huart2,"x = ",4,1000);
while(decx[i]!='\0')
  HAL_UART_Transmit(&huart2,&decx[i],1,1000),i++;

i = 0;
HAL_UART_Transmit(&huart2,"\ty = ",5,1000);
while(decy[i]!='\0')
  HAL_UART_Transmit(&huart2,&decy[i],1,1000),i++;

i = 0;
HAL_UART_Transmit(&huart2,"\tz = ",5,1000);
while(decz[i]!='\0')
   HAL_UART_Transmit(&huart2,&decz[i],1,1000),i++;

HAL_UART_Transmit(&huart2,"\n\r",2,1000);
```