



C언어 – HW4

임베디드스쿨1기

Lv1과정

2020. 08. 21

손표훈

1. 구조체와 비트필드, 공용체

```
typedef unsigned short UINT16;

typedef union
{
    UINT16 All;
    struct
    {
        UINT16 LoByte : 8;
        UINT16 HiByte : 8;
    } Byte;

    struct
    {
        UINT16 VAUXLow : 1;
        UINT16 VAUXoverCUR : 1;
        UINT16 CAN5VThShutdown : 1;
        UINT16 CAN5VUV : 1;
        UINT16 CAN5VOC : 1;
        UINT16 VSENSELow : 1;
        UINT16 VSUPUV : 1;
        UINT16 IDDOcNorm : 1;

        UINT16 rvd1 : 3;
        UINT16 VDDThShutdown : 1;
        UINT16 rvd2 : 1;
        UINT16 RSTLow : 1;
        UINT16 VSUPBatFail : 1;
        UINT16 IDDOcLp : 1;
    } Bit;
} USBCREGFlag;

int main(void)
{
    USBCREGFlag reg1;

    reg1.All = 0x1155; //0001 0001 0101 0101

    printf("HiByte = %x\n", reg1.Byte.HiByte);
    printf("LoByte = %x\n", reg1.Byte.LoByte);

    printf("VAUXLow = %x\n", reg1.Bit.VAUXLow);
    printf("VAUXoverCUR = %x\n", reg1.Bit.VAUXoverCUR);
    printf("CAN5VThShutdown = %x\n", reg1.Bit.CAN5VThShutdown);
    printf("CAN5VUV = %x\n", reg1.Bit.CAN5VUV);
    printf("CAN5VOC = %x\n", reg1.Bit.CAN5VOC);
    printf("VSENSELow = %x\n", reg1.Bit.VSENSELow);
    printf("VSUPUV = %x\n", reg1.Bit.VSUPUV);
    printf("IDDOcNorm = %x\n", reg1.Bit.IDDOcNorm);

    printf("rvd1 = %x\n", reg1.Bit.rvd1);
    printf("VDDThShutdown = %x\n", reg1.Bit.VDDThShutdown);
    printf("rvd2 = %x\n", reg1.Bit.rvd2);
    printf("RSTLow = %x\n", reg1.Bit.RSTLow);
    printf("VSUPBatFail = %x\n", reg1.Bit.VSUPBatFail);
    printf("IDDOcLp = %x\n", reg1.Bit.IDDOcLp);

    return 0;
}
```

```
HiByte = 11
LoByte = 55
VAUXLow = 1
VAUXoverCUR = 0
CAN5VThShutdown = 1
CAN5VUV = 0
CAN5VOC = 1
VSENSELow = 0
VSUPUV = 1
IDDOcNorm = 0

rvd1 = 1
VDDThShutdown = 0
rvd2 = 1
RSTLow = 0
VSUPBatFail = 0
IDDOcLp = 0
```

1. 구조체와 비트필드, 공용체

```
typedef unsigned short UINT16;
```

```
typedef union
```

```
{
```

```
    UINT16 All;
```

```
    struct
```

```
    {
```

```
        UINT16 LoByte : 8;
```

```
        UINT16 HiByte : 8;
```

```
    }Byte;
```

```
    struct
```

```
    {
```

```
        UINT16 VAUXLow : 1;
```

```
        UINT16 VAUXoverCUR : 1;
```

```
        UINT16 CAN5VThShutdown : 1;
```

```
        UINT16 CAN5VUV : 1;
```

```
        UINT16 CAN5VOC : 1;
```

```
        UINT16 VSENSELow : 1;
```

```
        UINT16 VSUPUV : 1;
```

```
        UINT16 IDDOcNorm : 1;
```

```
        UINT16 rvd1 : 3;
```

```
        UINT16 VDDThShutdown : 1;
```

```
        UINT16 rvd2 : 1;
```

```
        UINT16 RSTLow : 1;
```

```
        UINT16 VSUPBatFail : 1;
```

```
        UINT16 IDDOcLp : 1;
```

```
    }Bit;
```

```
}USBCREGFlag;
```

