Preprocessing (2K)

Please send corrections (or suggestions) to youngwlim@hotmail.com.

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Young Won Lim
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Based on Embedded Software in C for an ARM Cortex M
http://users.ece.utexas.edu/~valvano/Volume1/

Structure Declarations (1)

```
#define TriggerPendSV()      { NVIC_INT_CTRL_R = 0x10000000;}
#define SetPA5(x)            { GPIO_PORTA_DATA_R = (GPIO_PORTA_DATA_R & ~0x20) | (x) };
#define Wait(t)              { int wait; for (wait = 0; wait < (t); wait++) { } };
#define CONVERT4BPP(c)       ( ((c) << 12) | ((c) << 7 ) | ((c) << 1)  )
```

Macro

```
#ifdef ABC
... /* ABC */
#ifndef DEF
... /* ABC and not DEF */
#else
... /* ABC and DEF */
#endif
... /* ABC */
#else
... /* not ABC */
#ifdef HIJ
... /* not ABC but HIJ */
#endif
... /* not ABC */
#endif
```

```
#ifdef ABC
        ... /* ABC */
        #ifndef DEF
                ... /* ABC and not DEF */
        #else
                ... /* ABC and DEF */
        #endif
        ... /* ABC */
#else
        ... /* not ABC */
        #ifdef HIJ
                ... /* not ABC but HIJ */
        #endif
        ... /* not ABC */
#endif
```

Conditional Compilation

```
#define Debug 1

int Sub(int j){ int i;
#ifdef Debug
    PORTC |= 0x80; /* PC7 set when Sub is entered */
#endif
    i=j+1;
#ifdef Debug
    PORTC &= ~0x80; /* PC7 cleared when Sub is exited */
#endif
    return(i);
}
```

Conditional Compilation

```
void Program() {
  int i;
#ifdef Debug
    PORTC |=0x40; /* PC6 set when Program is entered */
#endif
    i=Sub(5);
    while(1) { PORTB=2; i=Sub(i);}
}

void ProgB(){ int i;
    i=6;
#ifdef Debug
    PORTC &= ~0x40; /* PC6 cleared when Sub is exited */
#endif
}
```

Inline Assembly

```
__asm void
Delay(unsigned long ulCount) {
    subs      r0, #1
    bne       Delay
    bx        lr
}


void Delay(unsigned long ulCount) {
  __asm (    "    subs    r0, #1\n"
             "    bne     Delay\n"
             "    bx      lr\n"                 );
}
```

References

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