

Union (1B)

Copyright (c) 2009-2016 Young W. Lim.

Permission is granted to copy, distribute and/or modify this document under the terms of the GNU Free Documentation License, Version 1.2 or any later version published by the Free Software Foundation; with no Invariant Sections, no Front-Cover Texts, and no Back-Cover Texts. A copy of the license is included in the section entitled "GNU Free Documentation License".

a1.c

```
#include <stdio.h>

int main(void) {
    int    a;
    int *  p;
    unsigned char * q;

    a = 0xffeeddcc;
    p = &a;
    q = (unsigned char *) &a;

    printf("&a= %p  a= 0x%08X \n", &a, a);
    printf("&p= %p  p= %p *p= 0x%08X \n", &p, p, *p);
    printf("&q= %p  q= %p *q= 0x%02X \n", &q, q, *q);

    printf("(q+0)=%p *(q+0)=0x%02X \n", (q+0), *(q+0));
    printf("(q+1)=%p *(q+1)=0x%02X \n", (q+1), *(q+1));
    printf("(q+2)=%p *(q+2)=0x%02X \n", (q+2), *(q+2));
    printf("(q+3)=%p *(q+3)=0x%02X \n", (q+3), *(q+3));

}
```

a2.c

```
#include <stdio.h>

union aaa {
    int      a;
    unsigned char c;
};

int main(void) {
    union aaa U;

    U.a = 0xffeeddcc;
    printf("U.a= 0x%X \n", U.a);
    printf("U.c= 0x%X \n", U.c);

    U.c = 0xAA;
    printf("U.a= 0x%X \n", U.a);
    printf("U.c= 0x%X \n", U.c);
}
```

a3.c

```
#include <stdio.h>

union aaa {
    int      a;
    unsigned char c[4];
};

int main(void) {
    union aaa U;

    U.a = 0xffeeddcc;
    printf("U.a= 0x%X \n", U.a);
    printf("U.c[0]= 0x%X \n", U.c[0]); // least significant byte
    printf("U.c[1]= 0x%X \n", U.c[1]);
    printf("U.c[2]= 0x%X \n", U.c[2]);
    printf("U.c[3]= 0x%X \n", U.c[3]); // most significant byte
}
```

