

```

#include <unistd.h>

char *g_base = "0123456789abcdef";

void pc(char c)
{
    write (1, &c, 1);
}

void pa(unsigned char c)
{
    if (c > 31 && c < 127)
        pc(c);
    else
        pc('.');
}

void ph(unsigned char c)
{
    pc(g_base[c / 16]);
    pc(g_base[c % 16]);
}

```

```

void pl(unsigned char *tab, size_t beg, size_t max)
{
    size_t i;
    size_t end = beg + 16;

    for (i = beg; i < end && i < max; i++)
    {
        ph(tab[i]);
        if (i % 2)    pc(' ');
    }
    for (; i < end; i++)
    {
        pc(' ');
        pc(' ');
        if (i % 2)    pc(' ');
    }
    for (i = beg; i < end && i < max; i++)
        pa(tab[i]);
    pc('\n');
}

void print_memory(const void *addr, size_t size)
{
    unsigned char *tab;

    tab = (unsigned char *)addr;
    for (size_t c = 0; c < size; c += 16)
        pl(tab, c, size);
}

```