

# Modifying a table from a function or subroutine

## Introduction

There are times when it is required for a C program to modify a table from a subroutine.

This will probably look trivial to experienced programmer, but it took me a while to figure it out. The main difficulty I encountered was that many of the example available on the web are at best incomplete and sometimes downright wrong.

So this is a brief note for me and others wanting to do this.

An example would be a routine that reads a page in an EEPROM and store it in a table.

## Declaration

C functions must be declared. Here it is.

```
void EEPROM_read_p(unsigned int addr, unsigned char size, unsigned char a[ ]);
```

a[ ] is just an arbitrary name indicating a table (here of unsigned char) to the compiler.

## Variables

```
unsigned char EEPbuff[32]; // for EEPROM page operations and other multiple byte transfers
```

## Definition

Here is a routine performing page read on an EEPROM.

```
void EEPROM_read_p(unsigned int addr, unsigned char size, unsigned char a[])
{
    unsigned char msb, lsb, myi;
    lsb = addr & 0x00ff;
    msb = addr >> 8;
    size -=1; // read 0 to size -1 with ACK
    Send_I2C_Start();
    Write_I2C(EEP | WRITE);
    Write_I2C(msb); //Hi address
    Write_I2C(lsb); //L0 address
    Send_I2C_Start(); //
    Write_I2C(EEP | READ);
    for (myi = 0; myi < size; myi++){
        a[myi] = Read_I2C(ACK); // read 0 to size -1 with ACK
    }
    a[size] = Read_I2C(NAK); // read last byte with NAK
    Send_I2C_Stop();
}
```

## Call

```
EEPROM_read_p (0x0000, 32, EEPbuff);
```

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