

Assignment-5

```
#include <xc.h>
#define _XTAL_FREQ 4000000
int arr1[5] = {1, 20, 3, 4, 5};
int arr2[5] = {6, 7, 8, 9, 10};
int temp[5], t[5];
int i;
int choice = 1; // 1: memcpy, 2: memmove, 3: swap
void my_memcpy(int* dest, int* src, int size) {
    for (int i = 0; i < size; i++) {
        dest[i] = src[i];
    }
}
void my_memmove(int* dest, int* src, int size) {
    if (dest < src) {
        for (int i = 0; i < size; i++) {
            dest[i] = src[i];
        }
    } else {
        for (int i = size - 1; i >= 0; i--) {
            dest[i] = src[i];
        }
    }
}
void main(void) {
    TRISD = 0x00;
    PORTD = 0x00;

    switch (choice) {
        case 1:
            my_memcpy(temp, arr1, 5);
            break;

        case 2:
            my_memmove(t, arr1, 5);
            break;

        case 3:
            for (i = 0; i < 5; i++) {
                int swapTemp = arr1[i];
                arr1[i] = arr2[i];
                arr2[i] = swapTemp;
            }
            break;

        default:
```

The screenshot displays the MPLAB X IDE v6.20 interface. The main workspace shows the 'main.c' file with the following code:

```

47 }
48     break;
49 }
50     default:
51     break;
52 }
53
54 // Output arr1 to PORTD
55 for (i = 0; i < 5; i++) {
56     PORTD = arr1[i];
57     delay_ms(1000);
58 }
59
60 while(1);
61
62

```

The 'File Registers' window shows the memory map, and the 'SFRs' window shows the Special Function Registers. The 'Watches' window shows the current state of variables like 'arr1', 'arr2', 'choice', 'main0', and 'temp'.

The screenshot displays the MPLAB X IDE v6.20 interface with the following components:

- Top Menu Bar:** File, Edit, View, Navigate, Source, Refactor, Production, Debug, Team, Tools, Window, Help.
- Toolbar:** Standard IDE tools for file operations, editing, and debugging.
- Project Explorer (Left):** Shows the project structure including 'Assignment1', 'Header Files', 'Important Files', 'Linker Files', 'Source Files', 'Libraries', and 'Loadables'.
- Source Editor (Center-Left):** Displays the C code for 'main()'. The code includes variable declarations for 'arr1', 'choice', and 'temp', and a loop that copies data from 'arr1' to 'temp' based on 'choice'.
- Register Window (Center-Right):** Shows the state of various registers (00-0A) in hexadecimal and decimal formats. The 'TRISD' register is highlighted in green.
- SFRs Window (Right):** Displays the status of Special Function Registers (F0A-F0F) in hexadecimal and decimal formats. The 'TRISD' register is highlighted in green.
- Watches Window (Bottom):** Monitors the values of variables and memory locations. It shows 'arr1' and 'temp' arrays, and their individual elements, along with memory addresses.