Let’s make sure we can load values into Memory Locations
Note how the value 0x5000 0AA0 appears in the memory location:

What if we had RX_Value=0x5000 0AB0?
0x20 00 00 00: 0AB0 5000
Check the Program

• Read the PORT connected to a DIP Switch (8 Switches)

• Depending on the status of the switch R4 is incremented

• Pay attention to the details!

```assembly
AREA    main, CODE, READONLY
THUMB
EXPORT  __main
ALIGN
ENTRY

__main    PROC

; Alternatively go to memory and modify the value directly
: LDR    R1, =MyPORT    ; load a value in byte located at MyPORT
: MOV    R2, #RX_Value  ; rx received value from the Port 0x80
: STR    R2, [R1]

: MOV    R0, #Test_Value ;
: LDR    R1, =MyPORT    ; Memory loc. of MyData -> Pointer
: LDRB   R2, [R1]      ; Load the value in location MyPORT --> R2
: CMP    R0, R2        ; compare the loaded value and Test_Value
: BNE    OVER         ; if not equal check again
: ADD    R4, R4, #1    ; else increment R4
: B      OVER         ; check again

; end of the program

```
Memory Map
Assembled Program
Assembled Program
Load A Value in the Memory

• Load a test value in the Memory
• Read the word from a specific memory location → R2

```assembly
; Program ASM_NewProject
; Check bits 4 and 6 of a memory location
; Written By:
; Date: 8/25/17
;******************************************************************************
; Constants & Register Assignments
MyPORT EQU 0x20000000
Test_Value EQU 2_01010000 ;0x50 in binary
RX_Value EQU 2_01010000 ;0x50 in binary
******************************************************************************
; Program Section
;******************************************************************************
AREA main, CODE, READONLY
THUMB
EXPORT __main
ALIGN
ENTRY

main PROC
; alternatively go to memory and modify the value directly
:LDX R1, =MyPORT ; load a value in byte located at MyPORT
:MOV R2, #RX_Value ; received value from the Port 0x50
:STR R2, [R1]

:MOV R0, #Test_Value ;
:OVER LDR R1, =MyPORT ; Memory loc. of MyData -> Pointer
:LDLR R2, [R1] ; Load the value in location MyPORT → R2
:CMP R0, R0 ; Compare the loaded value and Test_Value
:BNE OVER ; If not equal check again
:ADD R4, R4, #1 ; else increment R4
:B OVER ; check again
:END ; end of the program
```
Debug the Program

• Program Details
  • Setting the constants
  • Add comments

• Basic Process
  • Press F7 to compile
  • Press Cnt+F5 to go into Debug Mode
  • Press F11 to step through

• Debugging
  • Set the Memory value to the correct location
  • Change Memory Value
  • Monitor registers
Change the Memory Content Directly

• Click on the address and change the memory content
• You can see the content as a float, Unsigned Char, etc.
Checking Flag Status Using the Program Status Register (xPSR)