

# CSE 3113 - Microprocessor and Assembly Lab

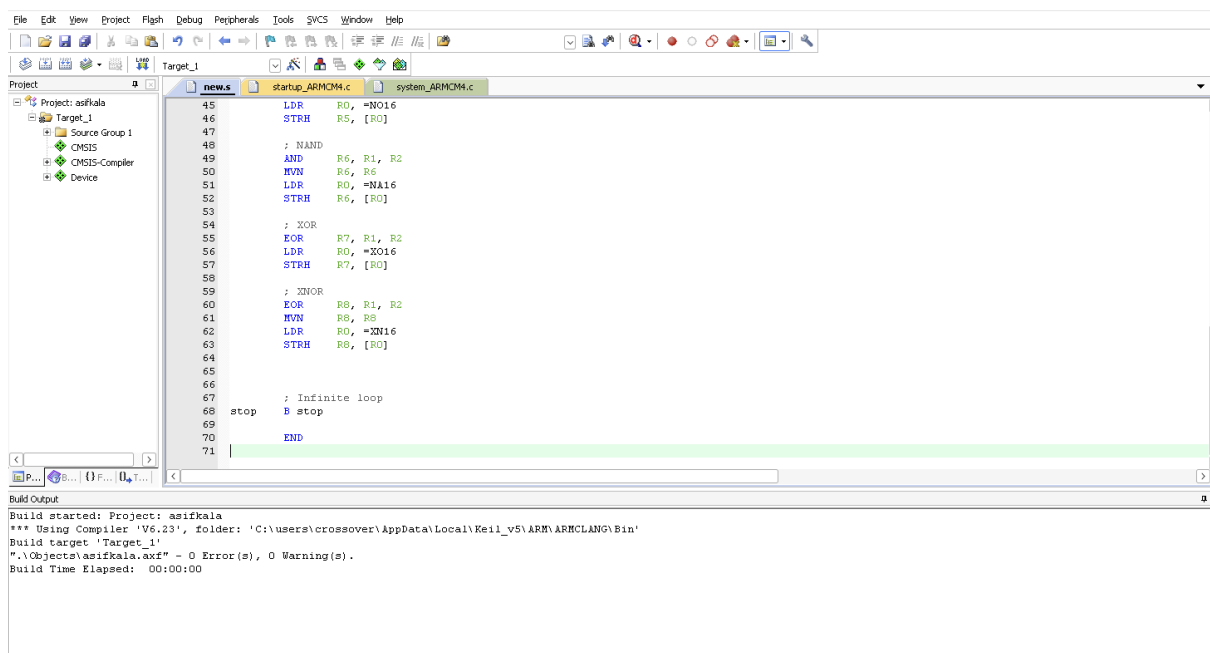
## Lab 3 Report

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Class Roll: 07

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**Task 1: Write an assembly language to perform all the logical operations (AND,OR,NOR,NAND,XOR,XNOR) on two 16-bit variables. Repeat it for two 32-bit variables.**

### 1. Build



```
45      LDR    R0, =0x16
46      STRH   R5, [R0]
47
48      ; NAND
49      AND    R6, R1, R2
50      MVN    R6, R6
51      LDR    R0, =0x16
52      STRH   R6, [R0]
53
54      ; XOR
55      EOR    R7, R1, R2
56      LDR    R0, =0x16
57      STRH   R7, [R0]
58
59      ; XNOR
60      EOR    R8, R1, R2
61      MVN    R8, R8
62      LDR    R0, =0x16
63      STRH   R8, [R0]
64
65
66
67      ; Infinite loop
68      stop   B stop
69
70      END
71
```

Build Output

```
Build started: Project: asifkala
*** Using Compiler 'V6.23', folder: 'C:\users\crossover\AppData\Local\Keil_v5\ARM\ARMLANG\Bin'
Build target 'Target_1'
".\Objects\asifkala.axf" - 0 Error(s), 0 Warning(s).
Build Time Elapsed: 00:00:00
```

Figure 1: State of the system after the project is build.



## 2. Register Status After Execution

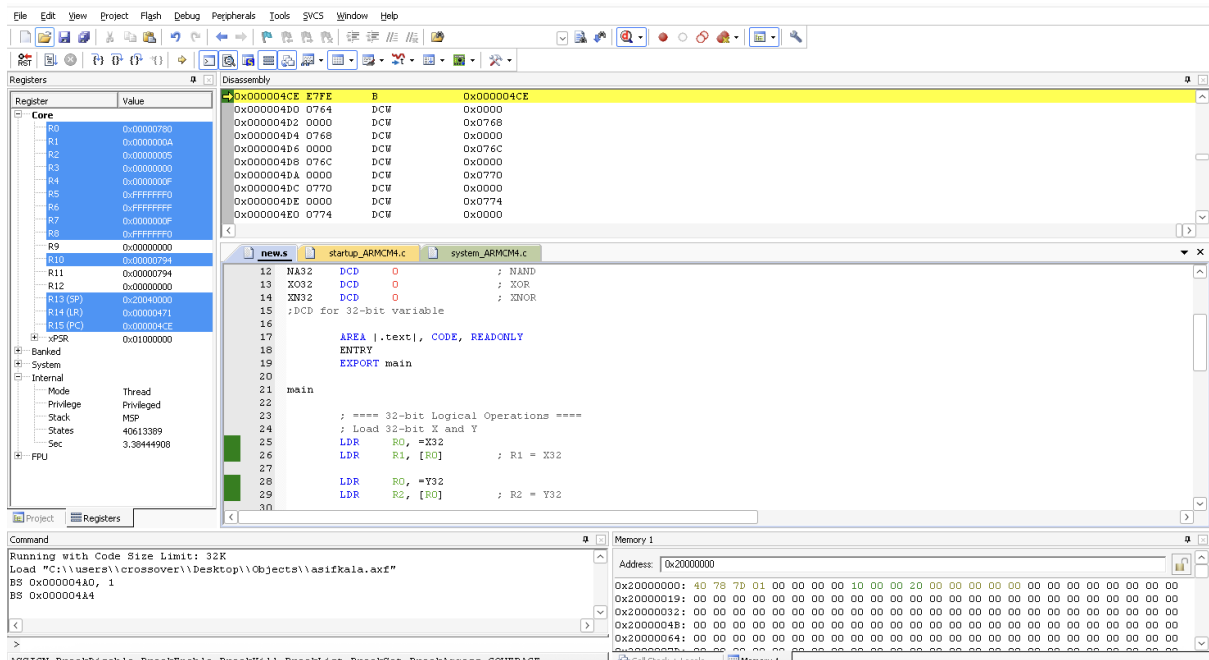


Figure 4: State of the system after the code has been executed.

## Task 2: Write an assembly language to perform all the shift operations (LSR, ASR, LSL) on a 32-bit variable.

The following screenshots demonstrate the state of the system before and after execution of the program.

### 1. Build Status

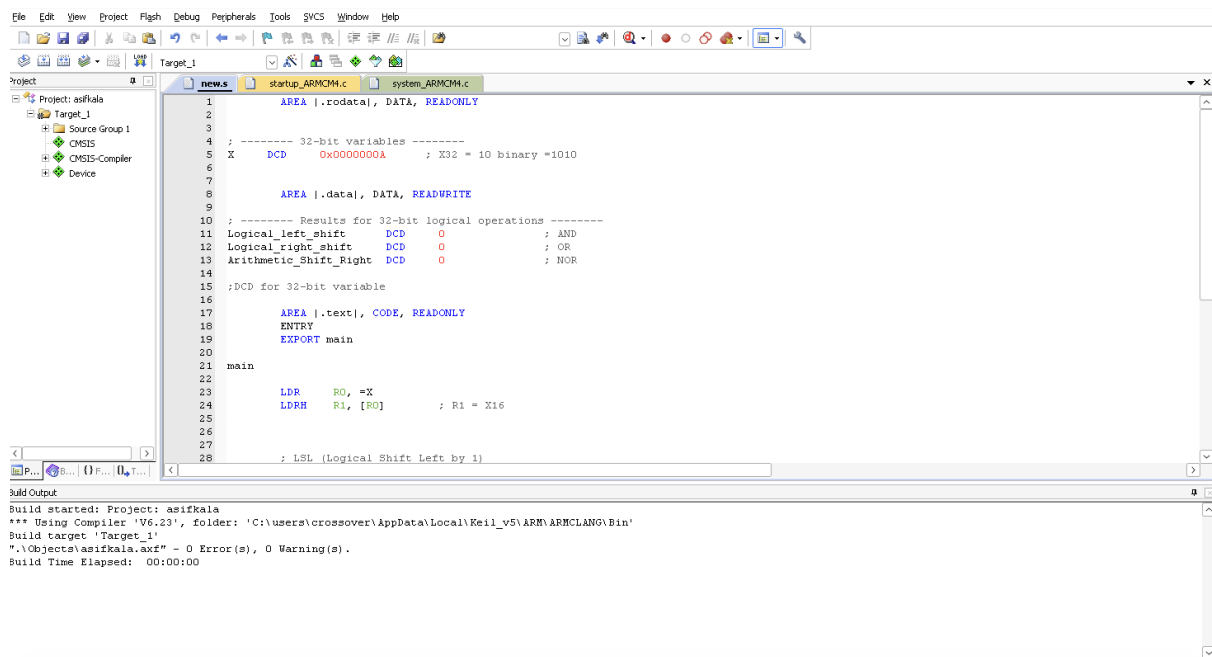


Figure 5: State of the system after the project is build.

## 2. Register Status After Execution

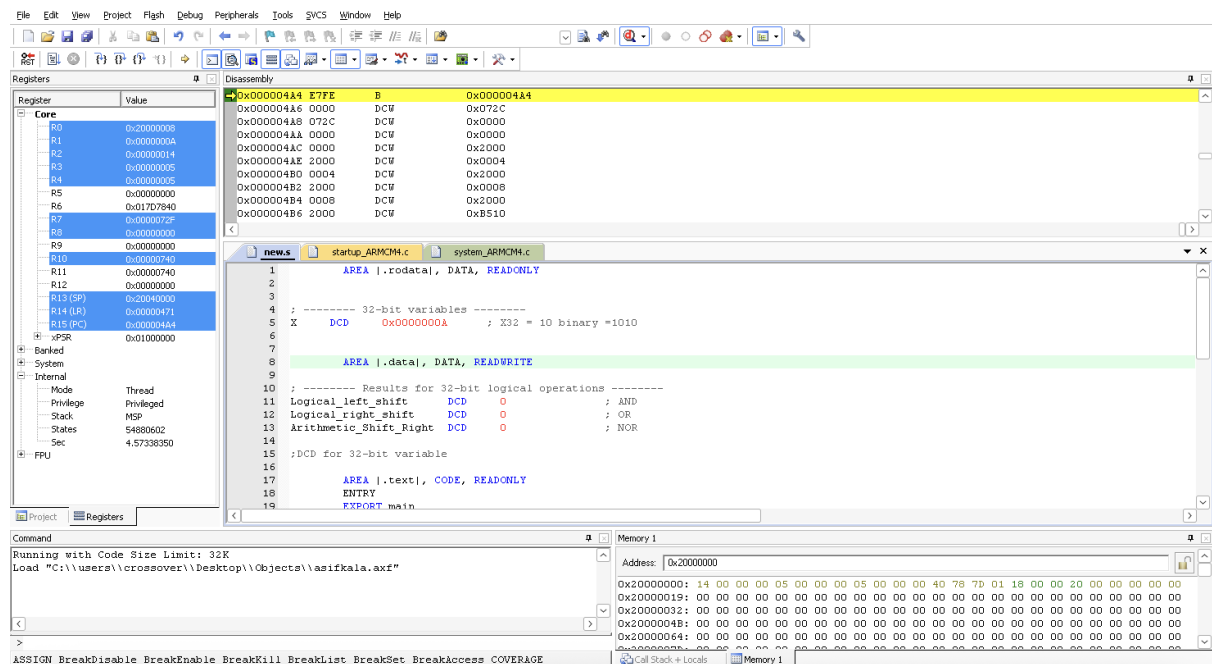


Figure 6: State of the system after the code has been executed.

## Task 3: Write an assembly language program to find the largest among n different numbers.

### 1. Build Status

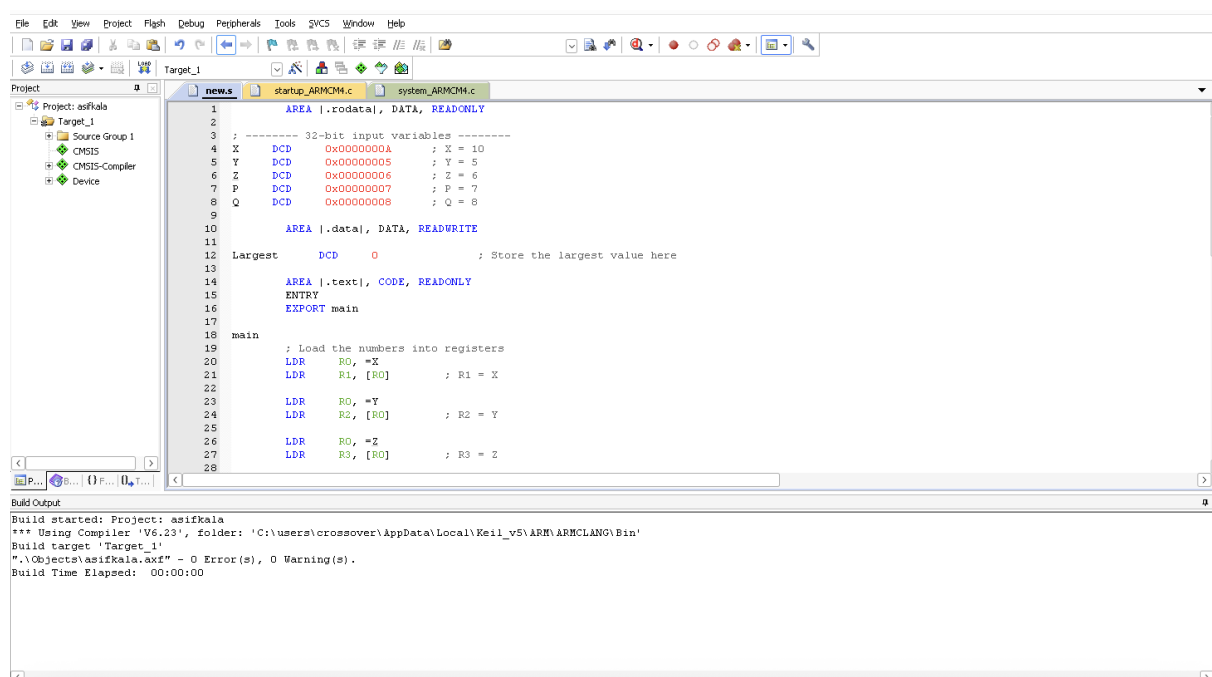


Figure 7: State of the system after the project is build.

## 2. Register Status After Execution

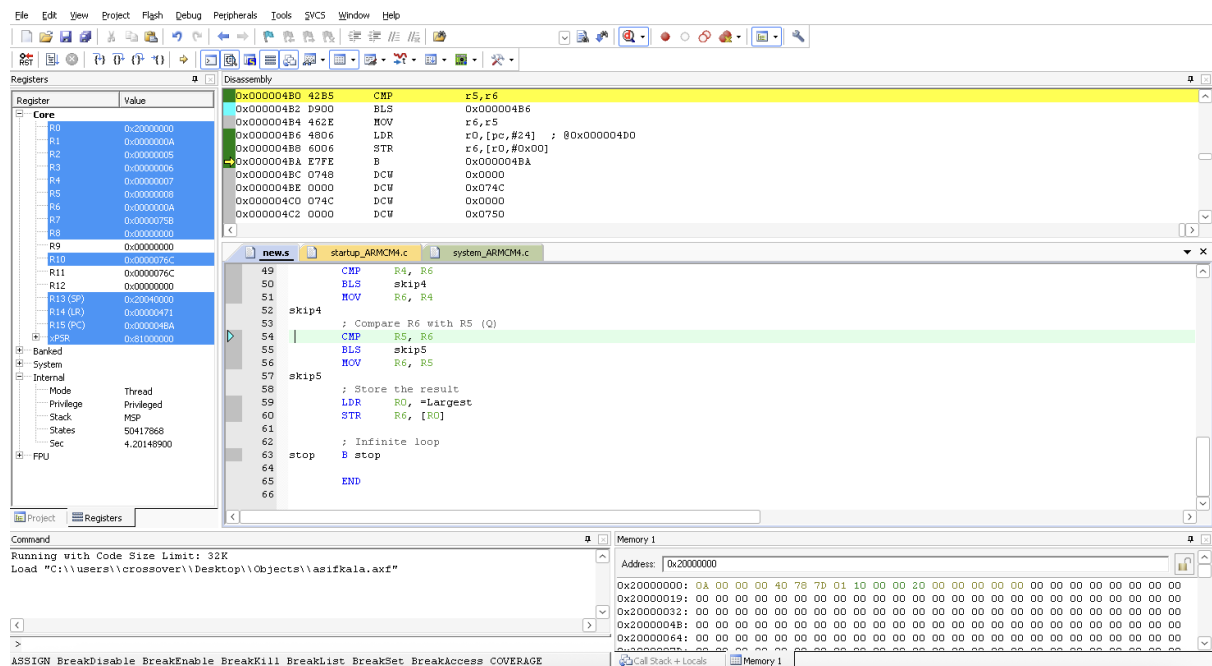


Figure 8: State of the system after the code has been executed.

**Task 4: Write an assembly language program to find the average of n numbers.**

### 1. Build Status

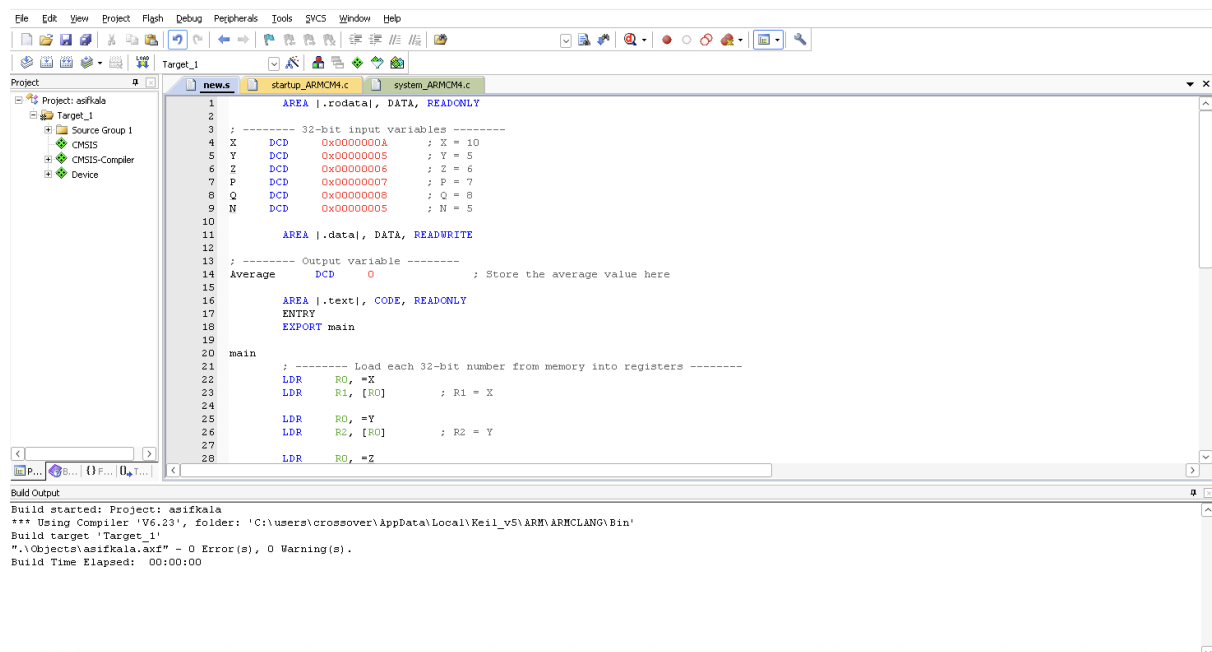


Figure 9: State of the system after the project is build.

## 2. Register Status After Execution

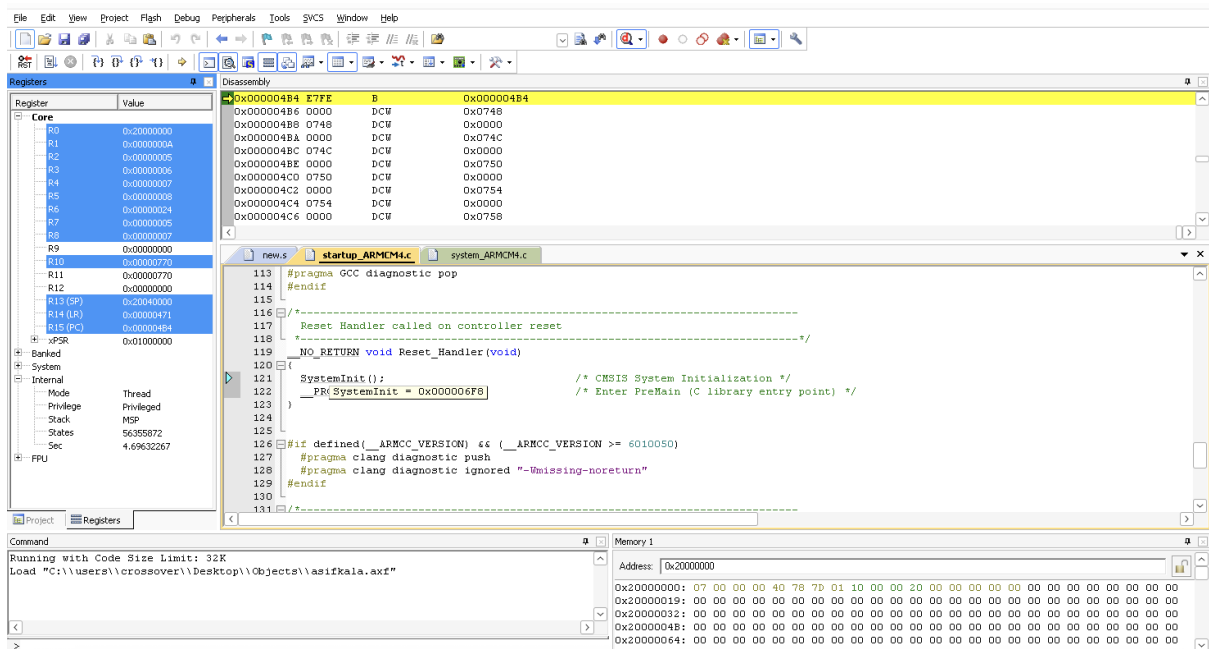


Figure 10: State of the system after the code has been executed.