Faculty of Engineering

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CSE 211s:Introduction to Embedded Systems

REPORT (1)

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Sec.: 1

Program: CSE

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Code in C:

```
int j=0;
int i;
for ( i = 0 ; i < 15 ; i++){

        j = j + i;

}
```

Code explanation:

This code stores the updated value of j by adding the value of i till i = 14.

Once i = 15 the iteration stops and the loop breaks.

After compilation of the program:

i = 15 → 0x0000 000F

j = 105 → 0x0000 0069

address of j in memory → 0x2000 0004

Assembly Code:

```
            AREA RESET, DATA, READONLY

            EXPORT __Vectors

__Vectors

            DCD 0x20008000

            DCD Reset_Handler

            ALIGN

            AREA myCode, CODE, ReadOnly

            ENTRY

            EXPORT Reset_Handler


Reset_Handler

            LDR R0, =0x20000004

            MOV R1, #0 ; j = 0

            MOV R2, #0 ; i = 0

Loop        CMP R2, #15 ; compare between i and 15

            BGE EndLoop

            ADD R1, R1, R2 ; j = j + i

            ADD R2, #1 ; i++

            B Loop

EndLoop     STR R1, [R0]  ;store the value of j in the memory

            END
```

Registers:

Memory: