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**ECGR 3183 – Computer Organization.**

**Project #2: Branching Conditions and Procedures**

Source Code:

Main:

ADDI X1, XZR, #5 // int j = 5;

ADDI X2, XZR, #3 // int k = 3;

SUBI X28, X28, #16 // Allocating stacks

STUR X9, [X28, #8]

STUR X19, [X28, #0]

BL Multiply

ADD X20, X0, XZR // int h = Multiply(j,k);

B End

Multiply: // int Multiply(a,b) {};

ADDI X9, XZR, #0 // int i = 0

ADDI X19, XZR, #0 //int r = 0

Loop:

SUBS XZR, X9, X2 // while (i < b){};

B.GE Return // Exit the loop, if i == b.

ADD X19, X19, X1

ADDI X9, X9, #1

B Loop

Return:

ADD X0, X19, XZR // Stores X19 into X0 for return.

LDUR X19, [X28, #0] // Deallocating stacks

LDUR X9, [X28, #8]

ADDI X28, X28, #16

BR X30 // Return address

End:

ADDI X0, XZR, #0 // return 0;

Simulation:

![Graphical user interface

Description automatically generated with low confidence]()