

CS1021 Tutorial 3

Q1 Translate each of the following pseudo-code statements into a sequence of ARM assembly language instructions. Assume that x and y are signed integers and that x is in R1 and y in R2.

(i) if (x == 0)
 x = x + 5;

(ii) if (x >= 5)
 x = 0;

(iii) x = 10;
 y = 5;
 while (x > 0) {
 y = y * x;
 x = x - 1;
 }

(iv) if (x < 9) {
 x = x + 1;
 } else {
 x = 0;
 }

(v) if (x > 9) {
 x = 0;
 if (y > 9) {
 y = 0
 } else {
 y = y + 1;
 }
 } else {
 x = x + 1;
 }

Q2 Write an ARM assembly language program to compute x^y . Assume x and y are unsigned integers and that x is in R1, y in R2 and the result is stored in R0.

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