Problem EX-3 (1 part) **MIPS and C**

Part A: Consider the following MIPS code. Write a C program corresponding to this MIPS code by filling in body of the C program fragment provided below. Assume that the registers $2, $3, and $6 hold variables "Pixels," "P," and "Result," respectively.

```
# Computes the OR of four 8-bit pixels packed in a 32-bit data word.
# $2: Pixels: packed data word
# $3: P: a single pixel
# $6: Result: bit-wise OR of all pixels
.data
Pixels: .word  -12869361    # decimal equivalent of 0xFF3BA10F

.text
Dilate: lw $2, Pixels($0)
        andi $6, $2, 255      # mask: extract P0 (0xFF)
        srl  $2, $2, 8        # logical shift right by 8 bits
        andi $3, $2, 255      # mask; extract P1
        srl  $2, $2, 8        # shift off P1
        or   $6, $3, $6       # $6: P1 or P0
        andi $3, $2, 255      # mask; extract P2
        srl  $2, $2, 8        # shift off P2, $2 is right with just P3
        or   $6, $3, $6       # $6: P2 or P1 or P0
        or   $6, $2, $6       # $6: P3 or P2 or P1 or P0
        jr $31
```

```
int Pixels = -12869361;
int main()
{
  int P;
  int Result= Pixels & 255;
  Pixels = Pixels >> 8;
  P = Pixels & 255;
  Result = P | Result;
  Pixels = Pixels >> 8;
  P = Pixels & 255;
  Result = P | Result;
  Pixels = Pixels >> 8;
  Result = Pixels | Result;
  return Result;
 }
```