1 How many times is the expression (a + c) computed in the original

code (as seen in the SSA pass)? What about after the FRE pass?

Ans The original code showed two computations, but the FRE pass was able

to reuse the temporary variable which stored the result of the

intitial computation of (a + c). Thus, one line of execution was

saved, and so was the use of an extra variable.

2 Have there been any more optimizations after FRE? How will you

check?

Ans Check the file B-4.c.\*.optimized. This is the last GIMPLE

Intra-procedural pass. If it is same as the output of FRE, then no

more optimizations have occured.

3 Why did we have to put a "return b" in this assignment? What if

"return b" is changed to "return 0"? Will it make any difference?

Ans "return b" was required to make the computation of variable `b'

meaningful. If function `main' is going to "return 0" and there is

no other output, GCC will realise that the entire computation of

variable `b' was dead code and will eliminate its dependencies one

by one until the resulting program reduces to:

int main()

{

return 0;

}