1 How have if-blocks been translated into GIMPLE statements? Can you

differentiate between conditional and unconditional gotos?

ANS If-blocks have been broken down into distinct sections of code with

labels (named similar to temporary variables). Control transfer

occurs with unconditional jumps (e.g. "goto X") or conditional jumps

(e.g. "if Z then goto X else goto Y").

2 Repeat the above compilation, but now asking for another dump

that of the pass "cfg". View this pass and say whether this

representation makes it easier to read and understand GIMPLEs. Draw

the control-flow graph of the program A-2.c on a piece of paper by

looking at the CFG dump.

ANS if-blocks has given goto’s so it can jump to that goto but at this time gotos are assigned below side the programme separately . Now each goto is divided separately

The control-flow graph dump shows distinct basic blocks which are

named sequentially starting from 1. Basic blocks roughly correspond

to labels that are created during the gimplification of control

statements.

f ()

{

int c;

int b;

int a;

int Z.0;

int D.1715;

<bb 2>:

a = Z;

if (a <= 9)

goto <bb 3>;

else

goto <bb 4>;

<bb 3>:

b = 5;

c = 17;

goto <bb 6>;

<bb 4>:

b = 6;

c = 20;

if (a == 0)

goto <bb 5>;

else

goto <bb 6>;

<bb 5>:

c = 0;

<bb 6>:

D.1715 = b \* 10;

Z.0 = D.1715 + c;

Z = Z.0;

return;

}