Princeton University
COS 217: Introduction to Programming Systems
"Flattened" C Programs

C Code	"Flattened" C Code
| ```
if (expression)
{
   statement1;
   ...
   statementN;
}
``` | ```
   if (! expression) goto endif1;
   statement1;
   ...
   statementN;
endif1:
``` |
| ```
if (expression)
{
   statementT1;
   ...
   statementTN;
}
else
{
   statementF1;
   ...
   statementFN;
}
``` | ```
   if (! expression) goto else1;
   statementT1;
   ...
   statementTN;
   goto endif1;
else1:
   statementF1;
   ...
   statementFN;
endif1:
``` |
| ```
while (expression)
{
   statement1;
   ...
   statementN;
}
``` | ```
loop1:
   if (! expression) goto endloop1;
   statement1;
   ...
   statementN;
   goto loop1;
endloop1:
``` |
| ```
for (expression1; expression2; expression3)
{
   statement1;
   ...
   statementN;
}
``` | ```
   expression1;
loop1:
   if (! expression2) goto endloop1;
   statement1;
   ...
   statementN;
   expression3;
   goto loop1;
endloop1:
``` |

Patterns that are more efficient are shown in Chapter 3 of *Computer Systems: A Programmer's Perspective* by Bryant & O'Hallaron.