Class Exercise Activity for ITSC 2181 Introduction to Computer Systems
Module 6 - Unit 3 Exercise 1: Recognizing branch instructions in an assembly program

1. Create a C source file named stencil.c and type in the following content:

```
#include <stdlib.h>
int main(void) {
  int M = 100;
  int A[M], B[M];
  srand(1<<12);
  for(int i=0; i<M; i++){
    B[i] = rand() % 20;
  }
  A[0] = B[0];
  A[M-1] = B[M-1];
  for(int i=1; i<M-1; i++){
    A[i] = (B[i-1]+B[i]+B[i+1])/3;
  }
  return 0;
}
```

2. Explore RISC-V ISA assembly programs of stencil.c from Compiler Explorer at https://godbolt.org/ using the "RISC-V (64-bits) gcc (trunk)" compiler.
3. Then count the number of branch instructions (instructions starting with letter "b") and jump instructions (instructions starting with letter "j").
4. And then write down the instructions that we have not learned so far in the class not including the branch and jump instructions you just count.

Submission: Submit your work by writing in the textbox 1) the branch and jump instructions used in the program, 2) the instructions that we have not studied, and then 3) copy and paste the assembly code produced by the compiler explorer for the program.