CmpSci 201
Homework 9

1. Using the single-bus model described in class, enumerate the steps necessary to execute
   `STR R1, [R4, R5, LSL #4]`

2. Using the single-bus model described in class, enumerate the steps necessary to execute
   `LDM R13!, {R5, R4, R14}`

3. Using a multiple-bus model, enumerate the steps necessary to execute `BNE loop`, where
   `loop` is at address 0xCAFE0000 and the branch instruction is at address 0xCAFE0014.
4. In the following instruction stream, identify data-dependencies that would cause a stall in a 4-stage pipeline. Indicate the dependencies by circling the operands and drawing a connecting arc between them.

```
ADD    R4, R5, R6
MOV    R5, R6, LSL #2
ADD    R6, R4, R5
MUL    R8, R6, R5
```