

Princeton University
COS 217: Introduction to Programming Systems
Generating a Code Array

Example Circuit Description

```
INPUT x ;  
FLIPFLOP A B ;  
NEXT A = x & B ;  
NEXT B = x | ~A ;
```

Generated Code Array (expressed in assembly language)

```
save %sp, -96, %sp  
  
ld [%i0 + 0], %10 ! load x  
ld [%i1 + 4], %11 ! load B  
and %10, %11, %10 ! compute x & B  
  
st %10, [%i2 + 0] ! store the result as the next value of A  
  
ld [%i0 + 0], %10 ! load x  
ld [%i1 + 0], %11 ! load A  
xor %11, 1, %11 ! compute ~A  
or %10, %11, %10 ! compute x | ~A  
  
st %10, [%i2 + 4] ! store the result as the next value of B  
  
ret  
restore
```