

## Branch if We Found a 0 Bit

```
BITLOOP ; main loop
ADD R2,R3,#0
ADD R0,R0,#0
BRzp ZEROBIT
```

Branch forward  
if R0 starts with 0.

What are the  
branch conditions?

## We Found a 1 Bit, So Increment R2

```
BITLOOP ; main loop
ADD R2,R3,#0
ADD R0,R0,#0
BRzp ZEROBIT
ADD R2,R2,#1
ZEROBIT
```

Increment R2  
to print a 1 bit.

Is there an LC-3  
instruction for that?

## Wait for the Display to be Ready for a Character

```
ZEROBIT
LDI R4,DSR
```

Where should we  
put the result?

(and just before .END)

```
DSR .FILL xFE04
```

Check whether  
DSR (M[xFE04])  
is negative.

Is there an LC-3  
instruction for that?

Actually, yes,  
there is: LDI.

## Branch Back to ZEROBIT Until Display is Ready

```
ZEROBIT
LDI R4,DSR
BRzp ZEROBIT
```

Branch back  
to ZEROBIT  
until N=1.

What are the  
branch conditions?