# Solution for "Eenie Meenie Miney Moe" Bronze Open 2006

by Nitin Kumar

We need to simulate the operation of going around the circle and eliminating cows, keeping track of how many are left so that we know when we are finished (when there is only 1 cow left).

First we should read the input and store it in a list. We'll use 1-indexing to comply with the problem statement. We'll also need a boolean array, to keep track of which cows are still in the game (not eliminated).

```
read N, L
declare L[11]
for i from 1 to L:
      read L[1]
declare inGame[2301]
for i from 1 to N:
      inGame[i] = true
```

Then, we need to go around the circle, keeping track of which cow we're on and which position on the list we're on. We need to do N-1 times, so that there is only 1 cow left.

```
currentCow = 0              //start one before the first cow (cow 1)
                            //   because we will increment
sequencePosition = 1        //start with the first instruction in this list
for eliminatedCows from 1 to N-1:
```

Then, for each elimination, we need to go through the circle, making sure to skip cows that are already eliminated and loop around to cow 1 after cow N.

```
for moves from 1 to L[sequencePosition]:
      do:
            currentCow += 1
            if currentCow > N:          //loop around
                  currentCow = 1
      while not inGame[currentCow]    //skip eliminated cows
```

Then, we need to eliminate the cow and move to the next instruction. We also have to take care that if we go past the end of the instructions, we need to loop back to instruction 1.

```
inGame[currentCow] = false
sequencePosition++
if sequencePosition > L:
      sequencePosition = 1
```

Now that we have eliminated all the cows by one, we just need to iterate through and find the cow that is still in the game, and output it.

```
for cow from 1 to N:
      if inGame[cow]:
            output cow
```

We just have to put it all together to get the full code.

```
read N, L

array Li[11]
for i from 1 to Li:
      read Li[1]

array inGame[2301]
for i from 1 to N:
      inGame[i] = true

currentCow = 0
sequencePosition = 1

for eliminatedCows from 1 to N-1:
      for moves from 1 to Li[sequencePosition]:
            do:
                  currentCow += 1
                  if currentCow > N:
                        currentCow = 1
            while not inGame[currentCow]
      inGame[currentCow] = false
      sequencePosition++
      if sequencePosition > L:
            sequencePosition = 1

for cow from 1 to N:
      if inGame[cow]:
            output cow
```