

CMSC 131 Fall 2004 Quiz 3 Solution

Here is one possible solution. We use three variables:

- `increasing`: is true until we detect that the sequence fails to be increasing.
- `prev`: holds the value of the previous number that was read
- `curr`: holds the value of the current number that was read

We begin by reading the first value into `prev`. After this, with each current value we do the following, provided that it is not equal to the “sentinel” value of -999. We check whether `curr` is less than or equal to `prev`, and if so we know that the sequence is not increasing, and so we set `increasing` to false. (We need to be careful to check that `curr` is not equal to -999, since it will almost certainly cause us to think that the sequence is not increasing.) We exit the loop as soon as we discover that `increasing` is false or when we have hit the sentinel value, and print the appropriate message.

```
increasing = true
prev = read()

do {
  curr = read()
  if ( curr != -999 ) {
    if ( curr <= prev ) then
      increasing = false
    else
      prev = curr
  } while ( increasing and curr != 999 )

if ( increasing ) then
  print("Increasing")
else
  print("Non-Increasing")
```

(Note that we have taken explicit advantage of the assumption that there are 2 or more input values. If not, we would need to restructure our loop, using a while-loop, rather than a do-while.)