About Lab 2
Lab 2 calls for you to write 10 programs!
  • One prints the old "99 bottles of beer on the wall" song.

A typical verse is
  90 bottles of beer on the wall
  90 bottles of beer!
  Take one down, pass it around
  89 bottles of beer on the wall.

Clicker Q: Will you do this with a FOR-loop or a WHILE-loop?
A) FOR       B) WHILE       C) Either
• One program asks the user to enter a number \( n \), and then prints the perfect squares from \( n^2 \) to 1, separated by commas. For example, if \( n \) is 4 it prints 16, 9, 4, 1. The commas are the tricky part.
• One asks for the number \( n \) and then prints the \( n \)th Fibonacci number.
• One asks the user for an initial bank balance, the interest rate, a monthly deposit amount, and a number of months; the program prints the value of the account after each month.
Finally, the lab has 6 patterns that you are asked to code. Each pattern asks the user for a size. For example, Pattern C has this for size 3:

```
1 2 3
2 3
3
3
```

and this for size 4:

```
1 2 3 4
2 3 4
3 4
3 4
4
4
```
For the size $n$ figure, number the rows from 1 to $n$.

How would you describe row $i$?

A) Row $i$ has the numbers from 1 to $n$

B) Row $i$ has the numbers from 1 to $i$

C) Row $i$ has the numbers from $i$ to $n$

D) Row $i$ has the numbers from $i$ to 1
Here is the code for pattern C:

```python
n = eval(input( "Size? "))
for i in range(1, n+1):
    # print row number i
    for j in range(i, n+1):
        print( j, end = " " )
    print()
```

Pattern B with size 4 is

\[
\begin{array}{cccc}
1 & 1 & 1 & 1 \\
2 & 2 & 2 & 2 \\
3 & 3 & 3 & 3 \\
4 & 4 & 4 & 4 \\
\end{array}
\]

How would you describe row \(i\) for this pattern with size \(n\)?

A) Row \(i\) has the numbers from 1 to \(n\)
B) Row \(i\) has the number \(i\) \(n\) times
C) Row \(i\) has the number \(n\) \(i\) times
D) Row \(i\) has the number \(n\) \(n\) times