Nested Loops

A loop within a loop
- Can repeat multiple things within a loop
- Example: Read in 10 grades for each of 20 students
  - 12.1: How would we write loops to do this?

What is the Output?

```
for (int i = 0; i < n; i++)
{
    for (int j = 0; j < i; j++)
        cout << "*";
    cout << endl;
}
```

12.2: What is the output if n is 3?

Problem

- 12.4: Write a program that outputs a rectangle of stars for any inputted width and height
Problem

- 12.5: Write the nested ‘for’ loops that output the following:

```
   *
  **
 ***
 ****
*****
```

Problem

- 12.6: Write a program to play the stones game. There are 13 stones and 2 players alternate taking 1, 2 or 3 stones per turn. The winner is the player to remove the last stone. The program should print out (using ‘*’s) a picture of how many stones are left each turn.

Summary

- In today’s lecture we covered
  - Nested Loops

- Readings
  - We have completed chapters 1 and 2