Project 3

CS 1323 Fall 2017

# Learning Objectives

1. Write a method given the signature (20 points)
2. Call a method you wrote (20 points)
3. Use constants in all proper places in your program. (10 points)
4. Call either the ceil, floor or round method from the Math class (10 points)
5. Use a nested if statement (10 points)
6. Use a local variable in a method other than the main (10 points)
7. Use a while loop (10 points)

10 points will be awarded for the documentation of your program. That means using good names for variables, constants where appropriate, comments, proper and consistent indentation of code, and meaningful use of whitespace.

Due Date: September 29 by 11:59 p.m.

# Description

Write a program that will help FloorsRUs manage online orders of their popular Bamboo Dream flooring. The company has only 100 boxes of flooring in stock. Each box contains 155 square feet of flooring.

To calculate how much flooring is needed, you multiple the width by the depth of a room. Then you add on 5% extra for flooring that is wasted in installation. Then you calculate the number of boxes, remembering that you must always order complete boxes.

For example, if a room is 15 x 20 (assuming all measurements are in feet):

15 ft x 20 ft = 300 sq ft

We all need 5% extra.

300 sq ft \* .05 = 15 sq ft (if this had not worked out to an integer, it should be rounded up)

So we need at least 315 square feet of flooring. Since each box contains 155 square feet of flooring, we would need:

315 / 155 = 2.03 boxes. This means that two boxes will not be sufficient and we need to purchase a third box.

The method that you write should take the dimensions of the room and the number of square feet of flooring in the box and calculate how many boxes of flooring are needed. The method signature should be:

public static int calculateFlooring(int width, int height, int squareFeetPerBox)

The user interaction of the program could look like this below:

We now have 100 boxes left.

What is the size of your room: enter the width and depth in feet

50 20

Your 7 boxes will be shipped to you.

We now have 93 boxes left.

What is the size of your room: enter the width and depth in feet

100 100

Your 68 boxes will be shipped to you.

We now have 25 boxes left.

What is the size of your room: enter the width and depth in feet

50 50

Your 17 boxes will be shipped to you.

We now have 8 boxes left.

What is the size of your room: enter the width and depth in feet

50 50

We only have 8 boxes left.

Do you want to purchase all of them? Yes or No

yes

Your 8 boxes will be shipped to you.

I'm sorry, but we're now sold out of Bamboo Dream flooring