

**Regis University CC&IS**  
**CS210 Introduction to Programming**  
**Java Programming Assignment 2: Java Basics**

A local hardware store would like you to write a program to help their customer figure out how much paint and carpet to buy for a room that they are remodeling. You will need to know the following:

- Carpet is sold in square yards, and paint is sold in gallons.
- One gallon of paint will cover 350 square feet of wall surface.
- There are 144 square inches in 1 square foot.
- There are 1296 square inches in 1 square yard.

Given the room's length, width, and height *in inches*, you should be able to write the Java code to determine how much carpet and paint will be needed for *one* room.

To help their corporate customers (who have office buildings, hospitals, hotels, etc that have many rooms with the same dimensions), the store would also like a customer to be able to specify the number of rooms with the same dimensions that will be remodeled at the same time.

In your first Alice assignment, you created a program that had only one method, **myFirstMethod**. Similarly, this Java program will have only one method, **main**.

**Requirements**

- Within a Java project, create one Java **class** for this program, named as follows:  
**LastNameJavaClassName**  
For example: **SmithRemodelCalculator**
- Within the **main method**, write the Java code to:
  - Display a message to the user, explaining what the program will do.
  - Using descriptive prompts, read the input values (the number of rooms being remodeled, and the length, width, and height of one room) from the user.
    - Define an input variable to hold the number of rooms being remodeled as an **integer** type value.
    - Define the input variables for the room's dimensions as **double** type values.
  - Perform the following calculations, storing all results into **double** type variables.
    - Calculate the square inches of carpet needed for all of the rooms.
    - Convert the square inches of carpet to square yards.
    - Calculate the total square inches of wall surface for the 4 walls of one room.
    - Calculate the total square inches of wall surface for all of the rooms.
    - Convert the square inches of wall surface to square feet.
    - Calculate how many gallons of paint would be needed to cover the wall surface of all the rooms.
  - Display several blank lines after reading the inputs, before displaying the results.

- Display to the screen (formatted as shown in the sample output below):
  - The number of rooms being remodeled and the (indented) length, width, and height of one room in inches.
  - The (indented) amount of carpet needed in square yards, rounded to *two* decimal places by **printf**.
  - The (indented) amount of paint needed in gallons, rounded to *one* decimal place by **printf**.
- Finally, display at least one blank line after displaying all the results, so any system messages will be displayed on a separate line from your results (not jammed together).

### ***Sample Output***

```
Remodel Supply Report

For 2 rooms of size:
    180.0 inches long by
    200.0 inches wide by
    96.0 inches high

You will need
    55.56 square yards of carpet
    2.9 gallons of paint
```

NOTE: For a full program example of creating a Java program, see Online Content section 6.9.

### ***Coding Standards***

Your code must follow the **CS210 Coding Standards** from Content section 6.10 for all Java programs.

Be sure to ***include*** the following comments:

- Comments at the top of the code describing what the program/class does
- A tag with the author's name (i.e. your ***full*** name)
- A tag with the version of the code (e.g. version 1.0, Java Assn 2)

And ***delete*** any default comments supplied by the IDE that you do not need.

[See the next page for an outline of what your code should look like.](#)

### ***Debugging and Testing***

Run, test, and debug your Java program, until it works.

Then test your program with different inputs to make sure it provides correct results.

Outline of what your **.java** program code should look like:

```
/*
 * The remodel calculator program will do the following:
 *   Put program description here
 */

import java.util.Scanner;

/**
 * @author Mary Jones          ← put your full name here
 * @version 1.0, Java Assn 2
 */
public class JonesRemodelCalculator {

    public static void main(String[] args) {

        // Statements to read and store input data from user

        // Statements to perform calculations go here

        // Statements to display output results go here
    }

}
```

## Submission

This programming assignment is due by midnight of the date listed in the **Course Assignments by Week**.

Your program source code (**.java**) file is located in your NetBeans project directory, within in the **src** folder.

Submit your program source code (the **.java** file) to the **Java Prog Assn 2** assignment submission folder (located under the **Assignments/Dropbox** tab in the online course).

For example: **SmithRemodelCalculator.java**

To submit your assignment to the drop box, complete the following steps:

1. Click on **Assignments/Dropbox** in the course Navigation bar.
2. Click on the **Java Prog Assn 2** link in the Folder List under **Java Programs**.
3. Click on the **Add a File** button
4. In another window on your computer, browse to the **.java** source code file for the program.  
Drag and drop the file to the area within the dotted lines.
5. Click on the **Add** button
6. Type any comments you want to add for your facilitator in the **Comments** box (none are necessary)
7. Click on the **Submit** button.
8. You will receive a **Confirmation email** for the submission.

## Grading

Programs will be graded using the **rubric** that is linked on the same assignment page as this file.

### **WARNING:**

*Programs submitted more than 5 days past the due date will **not** be accepted,  
and will receive a grade of 0.*