Room Calculator

# Problem Statement

I want to wallpaper my bedroom. How many square feet of wallpaper will I need? How much will it cost me?

# Problem Solving Process Overview

1. (Inception)
   1. Inception is the phase during which we try to determine whether the project is worth undertaking. For the purposes of this exercise, we can assume that it is.
2. Requirements
   1. In this phase, we flesh out the problem statement and verify that we have asked all the questions that need to be answered in order to understand the situation fully. Sometimes this means finding the right questions… but in this case, we have a toy problem that shouldn’t need a lot of elaboration to address.
   2. The outcome of this phase is a fully realized specification – that is, a list of all the conditions that need to be met for the project to be considered a success.
3. Design
   1. In this phase, we break the specifications down into manageable chunks and describe how we will meet the requirements therein. This is where problem decomposition happens.
4. Construction
   1. This is where we actually build the code.
5. Testing
   1. Test early and test often.
6. (Deployment)
   1. Deployment is the phase during which we move our solution into production. We can skip this phase, as we will not be deploying this code.
7. (Maintenance)
   1. Maintenance is the phase during which the solution is in production and must be upgraded and fixed in order to keep things running. Since we aren’t deploying this code, we can ignore this phase.

# Requirements

1. Calculate the square footage of wall space, without regard to doors and windows in the room.
   1. Assume a rectangular room
2. Collect the cost per roll of wallpaper, and the number of square feet per roll.
3. Determine how many rolls of wallpaper are needed to cover the given wall space.
4. Multiply rolls of wallpaper by price per roll.
5. Report to the user how many rolls of wallpaper are needed and the total cost of the wallpaper.
6. User interface will be via a console/terminal.

# Design

**Model**

* Wall Space
  + Height x Width (short wall)
  + Height x Width (long wall)
* Wallpaper
  + Roll Size
  + Cost Per Roll

**Business Logic**

* Area of a Wall
* Rolls per Wall
* Total cost of Room

**View**

* Console UI
  + Get decimal values
  + Print strings
  + Styled report for user (eg, all the inputs and calculations in one easy to read spot)

**Workflow**

1. Input height and width of long wall
2. Input height and width of short wall
3. Calculate area of each wall + room
4. Input wallpaper roll size & cost
5. Calculate how many rolls are required for the room
6. Calculate the cost of the room
7. Display the results to the user 😊