**Programming Process Template  
Programming Challenge 1 Of Chapter 1**

**Step 1 – Define what the application is to do**

|  |  |
| --- | --- |
| **Purpose** | To calculate the Room’s Area Square in feet. |
| **Input** | Length and Width of a room |
| **Process** | Multiply number of Length by Width of a room. The result is the Room’s area in square feet. |
| **Output** | Display a message indicating a room’s area in square feet. |

**Step 2 – Visualize the User Interface**

Area Calculator

Length of Room

Width of Room

Room Area: ::;iSquarqq sSwua:

0ft

Calculate Room Area

Close

**Step 3 – Determine Needed Controls**

|  |  |  |
| --- | --- | --- |
| Control Type | Control Name | Description |
| Form | (Default) | A small form that will serve as the window onto which the other controls will be placed |
| Label | (Default) | Displays the message *Length of Room* |
| Label | (Default) | Displays the message *Width of Room* |
| Label | (Default) | Displays the message *Room Area* |
| TextBox | txtRoomLength | Allows the user to enter the *Length of Room* |
| TextBox | txtRoomWidth | Allows the user to enter the *Width of Room* |
| Label | lblRoomArea | Displays the Room’s Area in Square feet, after the *btnCalcRoomArea* button has been clicked |
| Button | btnCalcRoomArea | When clicked, multiplies the number of a room’s Length by the Width of a room; stores the result in a variable and displays it in the *lblRoomArea* label |
| Button | btnClose | When clicked, terminates the application |

**Step 4 – Define the Controls Relevant Properties**

|  |  |  |
| --- | --- | --- |
| Control Type | Control Name | Text Property |
| Form | (Default) | “Area Calculator” |
| Label | (Default) | "Length of Room" |
| Label | (Default) | “Width of Room” |
| Label | (Default) | “Calculate Room Area” |
| Label | lblRoomArea | “0ft” |
| TextBox | txtRoomLength | “” |
| TextBox | txtRoomLength | “” |
| Button | btnCalcRoomArea | “Calculate Room Area” |
| Button | btnClose | “Close” |

**Step 5 – Determine Needed Event Handlers**

|  |  |
| --- | --- |
| Event Handler Name | Description |
| btnCalcRoomArea\_Click | Multiplies the numbers of Length by the Width of a room; these values are retrieved from the *txtRoomLength* and *txtRoomWidth* TextBox controls and the result of the multiplication is stored in the *lblRoomArea* label’s Text property. |
| btnClose\_Click | Terminate the application (uses a method of me.Close() ) |

**Step 6 – Create a Flowchart/Pseudocode for Each Event Handler**

1. Flowchart

Store the value of *dblRoomArea* in the *lblRoomArea* control’s Text property.

Multiply the number of the Length of a room by Width. Store result in *dblRoomArea*.

End

Start

1. Psuedocode
   1. *Store Number of Length of Room* × *Width of Room in the dblRoomArea variable*.
   2. *Store the value of the dblRoomArea variable in the lblRoomArea control’s Text property*.