Advanced User Interfaces
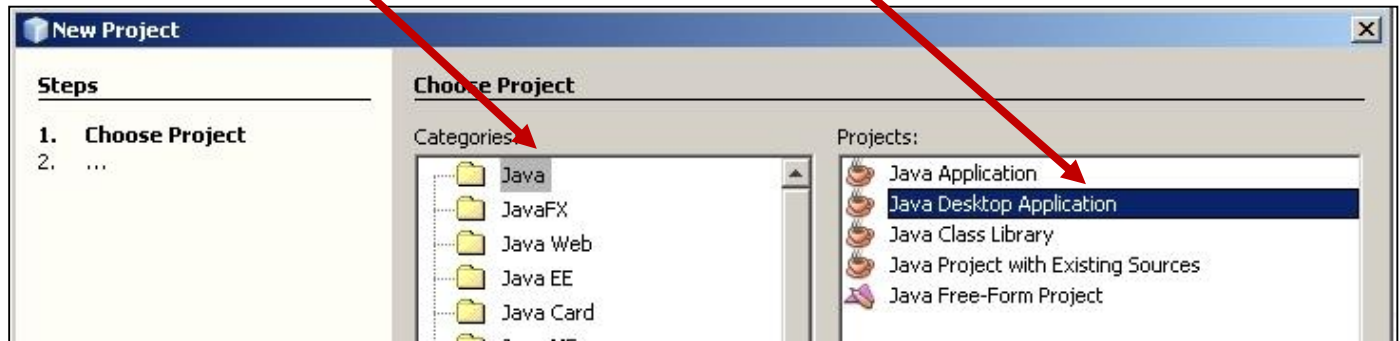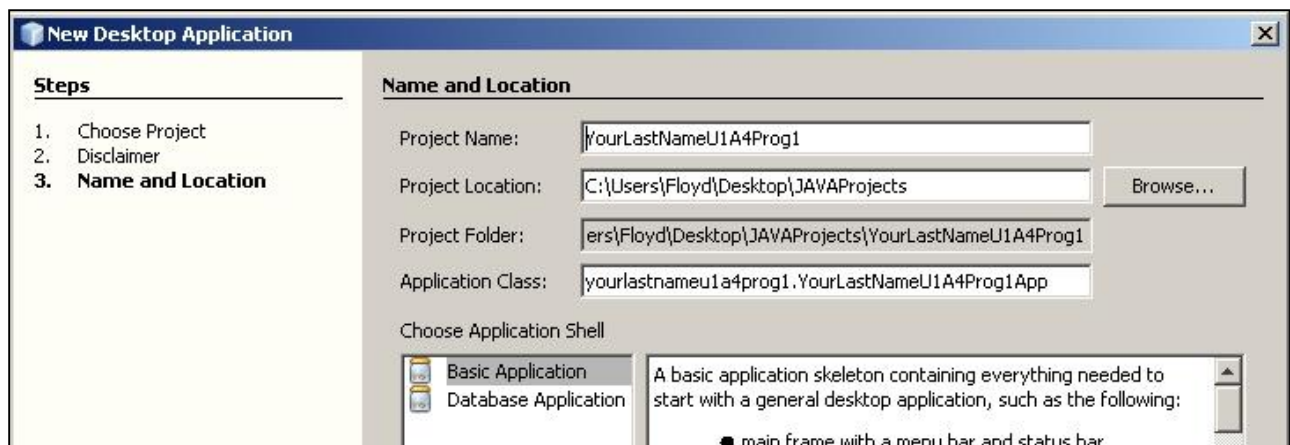
1. Open **NetBean**s and click **File... New Project...**
   Select **Java** as the Category and **Java Desktop Application** as the Project
   Click **Next**.

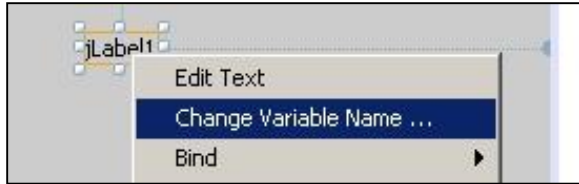2. Enter **YourLastNameU1A4Prog1** as the project name and click **Finish**.

4. The first task is to create the user interface, with the necessary labels, buttons and text fields.
   From the Swing controls on the right, click and drag a label onto the design area.
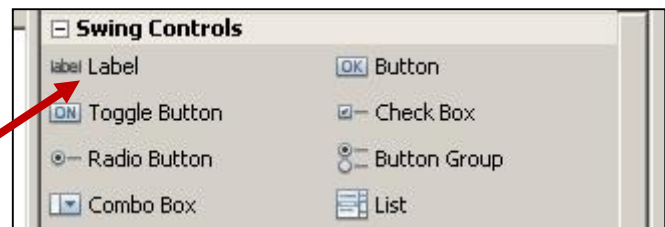
   Right click on this label and select **Change Variable Name...**
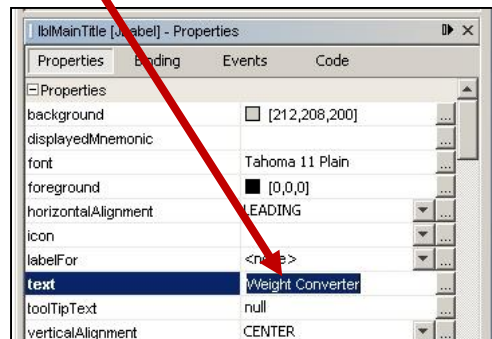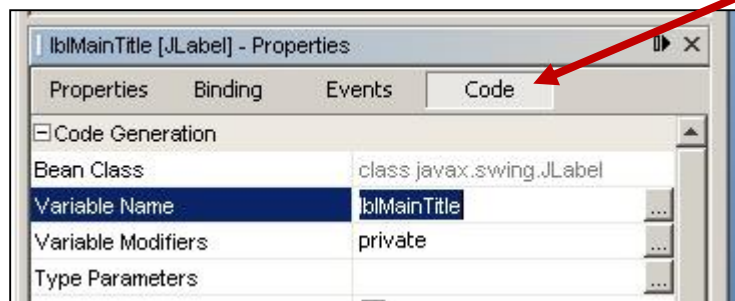   Change the variable name to **lblMainTitle** and click **OK**.
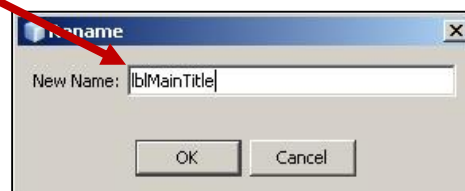
Right click on this label again and select **Change Text.**
Type in **Weight Converter**

The variable text can also be changed in the properties window:


The variable name can be changed as well, you will just have to click on Code in order to access the properties related to code:

To change the appearance of the main title of our program, select the ellipsis from next to the font property. Once the font window appears, select **Arial** – **Bold** – **24 pt**.
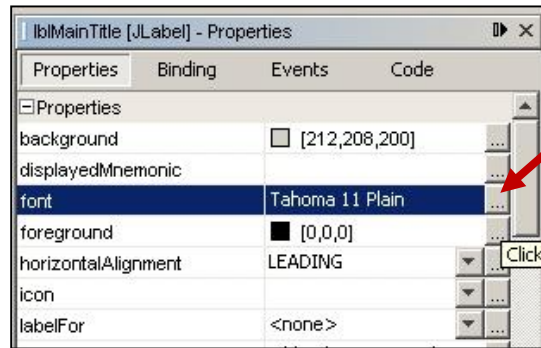
To alter the colour of the font, select the ellipsis next to the foreground property. Change the font colour to dark blue.
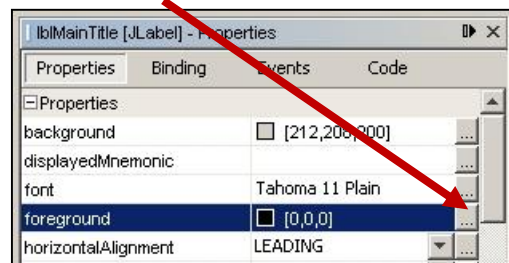
Your main title should now resemble the following:

5. Add three other labels, with the following attributes:

Variable Name	Text	Font Style	Font Colour (foreground)
lblKilos	Enter your weight in kilograms:	Arial – Plain – 12 pt	Dark Blue
lblPounds	Your weight in pounds is:	Arial – Plain– 12 pt	Dark Blue

Your design area should now resemble the following:

6. Click and drag a text field onto your design area. Change the variable name of the text field to **txtKilos** Change the text inside the text field to nothing (delete the text). This will probably make the text field shrink to a very small size, you can use your mouse to resize it so that it resembles the following:
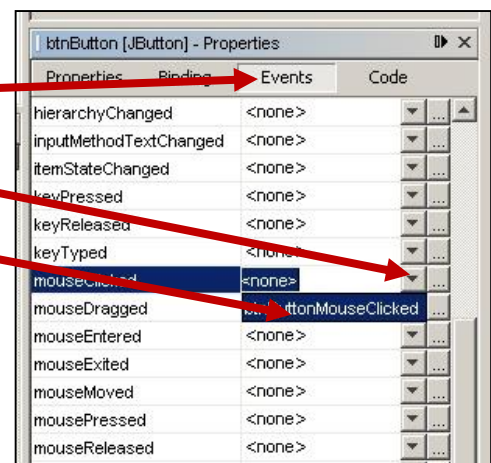
7. Add another text field to hold the individual's weight in pounds. The variable name for this text field should be set to **txtPounds**, and it should also have nothing written as text. Resize the new text field so that your design area resembles the following:

8. Finally, we need to enter the button that the user will click once they have entered a weight in kilograms. Drag a button onto the design area and change the variable name to **btnButton** and the text to "**CONVERT**". Alter the foreground, background and font properties of the button so that it resembles the following:

9. We are now going to add the code necessary to generate output when the button is clicked. Click on the **button** and then select **Events**.
   Next to the **mouseClicked** event click on the **down** arrow.
   Click on **btnButtonMouseClicked**.
   This will take you to the area where you will enter the Java programming code.

10. In the code window, we will enter the code that will generate output depending on the user's input.

The following is the code that should be typed, as well as a brief explanation:

CODE	EXPLANATION
`double kilos, pounds;`	Declares two variables to hold values
`kilos = Double.parseDouble(txtKG.getText())`	Takes the text that has been entered into the txtKG text field, converts it into a double, then stores it in the kilos variable.
`pounds=  kilos * 2.2;`	Multiplies the kilos by 2.2 and stores it into the pounds variable
`pounds = Math.round(pounds*100);` `pounds = pounds/100;`	Rounds the value to 2 decimal places
`txtLB.setText(Double.toString(pounds));`	Converts the pounds variable into a string value and puts it into the txtPounds text field.

You should enter the above code into the code window, so that is resembles the following:

```
264
265      private void jButton1MouseClicked(java.awt.event.MouseEvent evt) {
266
267          double kilos, pounds;
268
269          kilos = Double.parseDouble(txtKilos.getText());
270          pounds=  kilos * 2.2;
271
272          pounds = Math.round(pounds*100);
273          pounds = pounds/100;
274
275          txtPounds.setText(Double.toString(pounds));
276
277      }
```

11. Once the code has been entered, you should be able to run your program by clicking on the **Run Main Program** button.
Note that if you want to jump back and forth between the **Source** and the **Design**, you just have to click the quick buttons at the top.
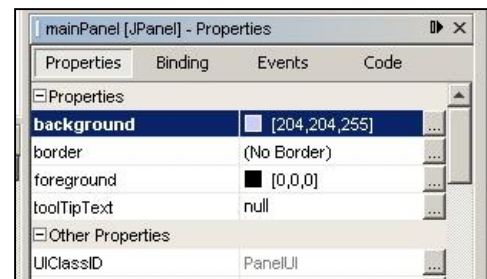If your program doesn't run successfully then you may have to go back and check your code.
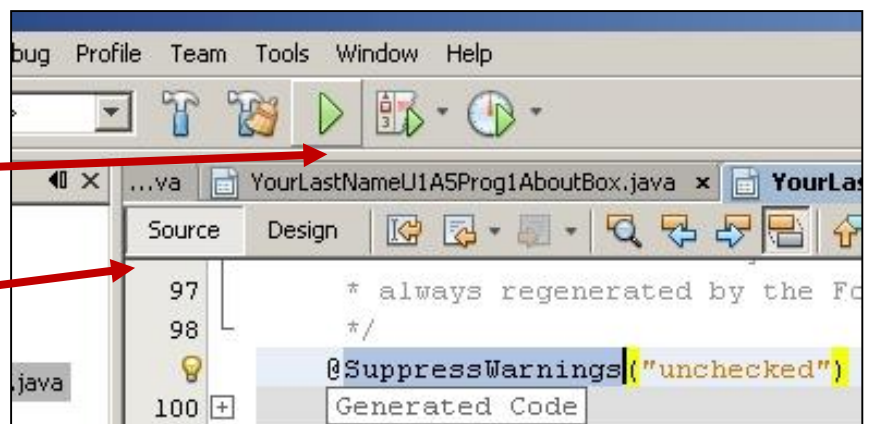
12. When you run your program, the output generated should resemble the following, depending on the input:


13. Once your program works effectively, you can alter the appearance of the window by changing the background colour in the properties window:

14. You can also add an image to your program.
Your first step should be to search the internet and find an appropriate picture. Once you have found it, download it onto your computer.

In NetBeans, drag a label onto the design area change the variable name to picWeight.
With the label selected, click on the icon ellipsis in the properties window.
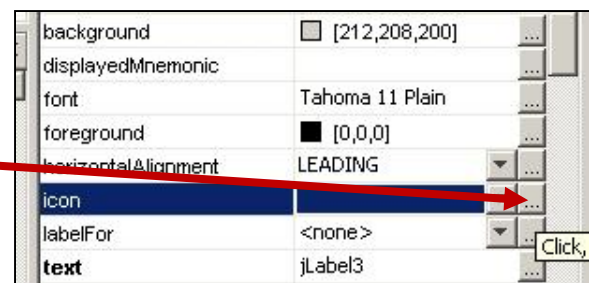
In the window that appears, click on **External Image** and **Import to Project...**
Select the image you downloaded then click **Next...** and **Finish...**

15. After changing the background colour and importing an image, your design area can resemble the following: