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INF 154 Assignment 7

Practical #: 7

Topic: Practical Lecture 7

– Reinforce the following concepts

- **For loops**
- **Nested For loops**
- **Timer**

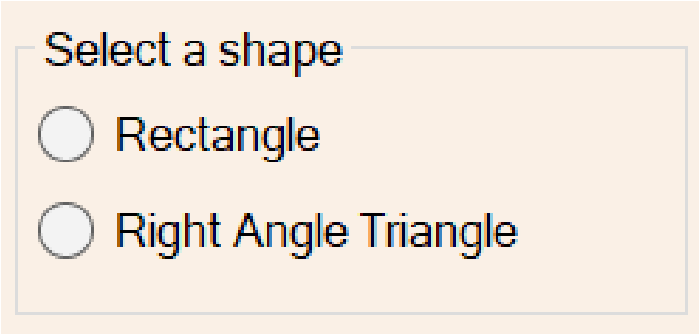
Practical Name: INF154Prac7xxxxxxxxx (where xxxxxxxxx is your student number)

Due: Monday, 22 May 2023 at 08:30

Code

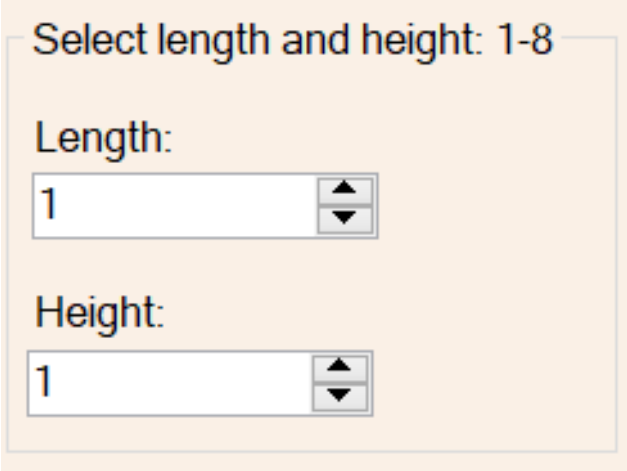
You will need to code a program to be able to draw two different shapes. A right-angled triangle and a rectangle. This needs to be done by using nested for loops. The shapes will be drawn with "*" asterisk signs and the shapes need to be hollow. Examples of how the shapes look will be shown in the screen shots below. An additional item which needs to be added to your practical is a timer to track how long the user has been drawing shapes for. This timer will start as soon as the application starts running.

Step 1: Create a "Select a shape" group box to contain the radio buttons which will be used to gather information from the user of which shape to draw.



Step 2: Create a "Select length and height" group box where the user will enter the dimensions of the shape to be drawn.

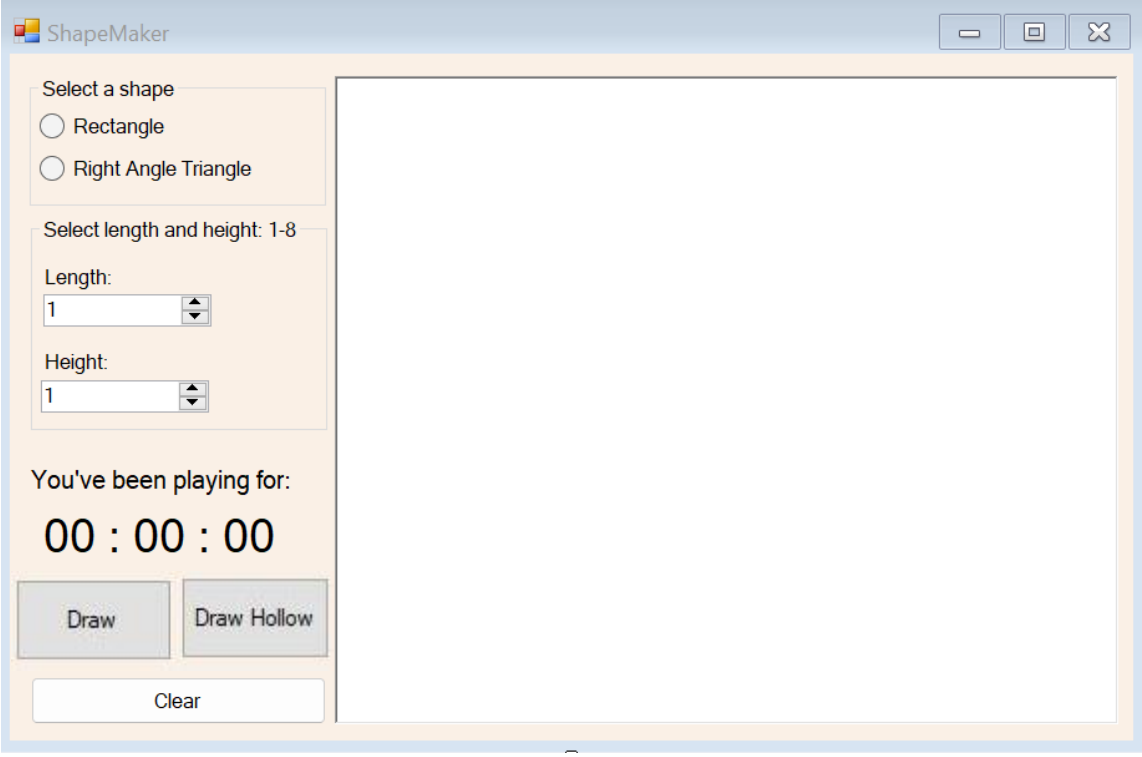
Note: When drawing the right-angled triangle, you only need to use one of these, either the length or height. As the triangle will have equal length sides and therefore only require one measurement.



Step 3: Finally create the timer and two buttons.

- The draw button when click will draw the shape selected in the "Select a shape" group box.
- The clear button will clear the rich textbox.
- The timer will run as soon as the application opens. (Hint: enable the timer from the start)

Example of the finished screen design:



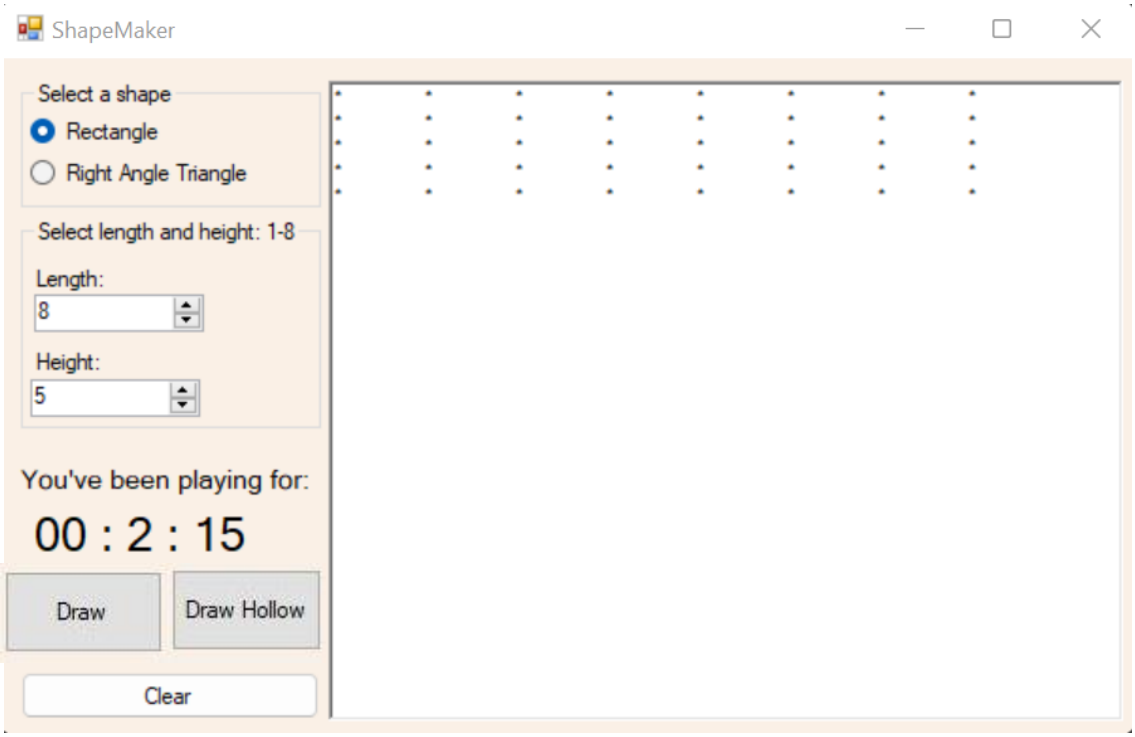
Step 4: The "Draw" button must do the following:

- When "Draw" is clicked, the selected shape is drawn using asterisk signs: "*"
- After each asterisk a tab needs to be placed, to add spacing.
- Adding a second shape to the rich textbox will simply draw the shape below the previous one.
- When the "Clear" button is clicked the rich textbox and all the shapes within it are cleared.

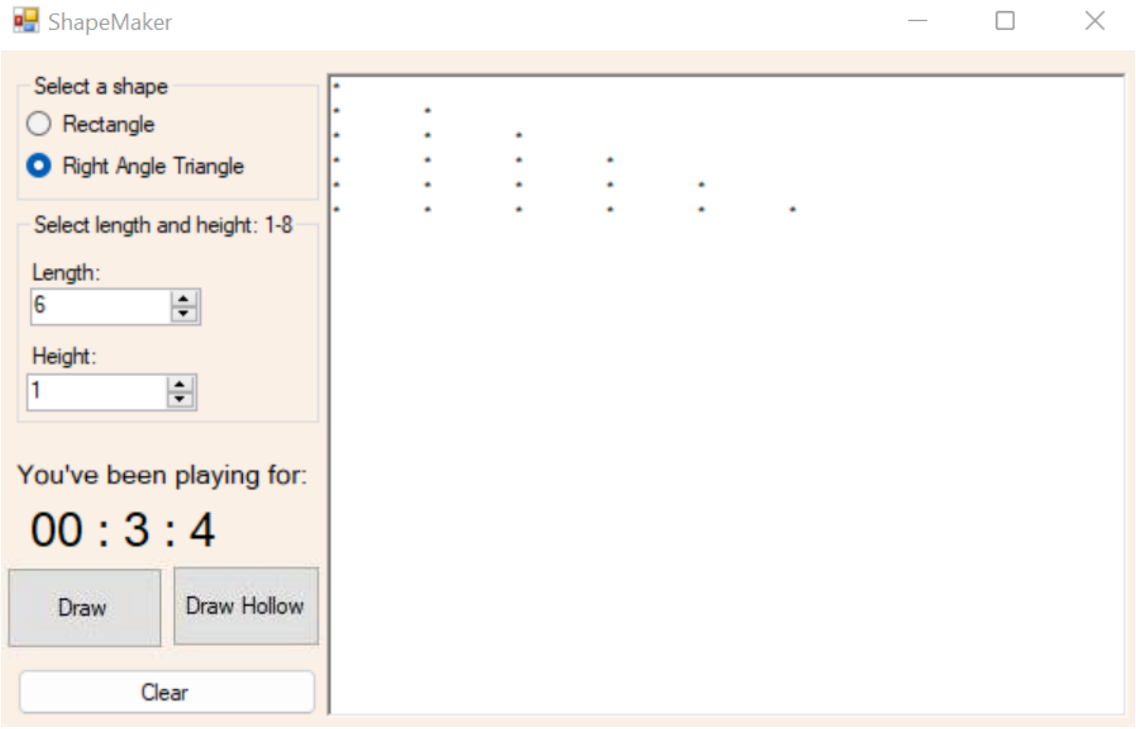
Below please see the examples of both the rectangle and the right-angled triangle.

Please refer to the rubric…

Rectangle example:



Right-angled triangle example:

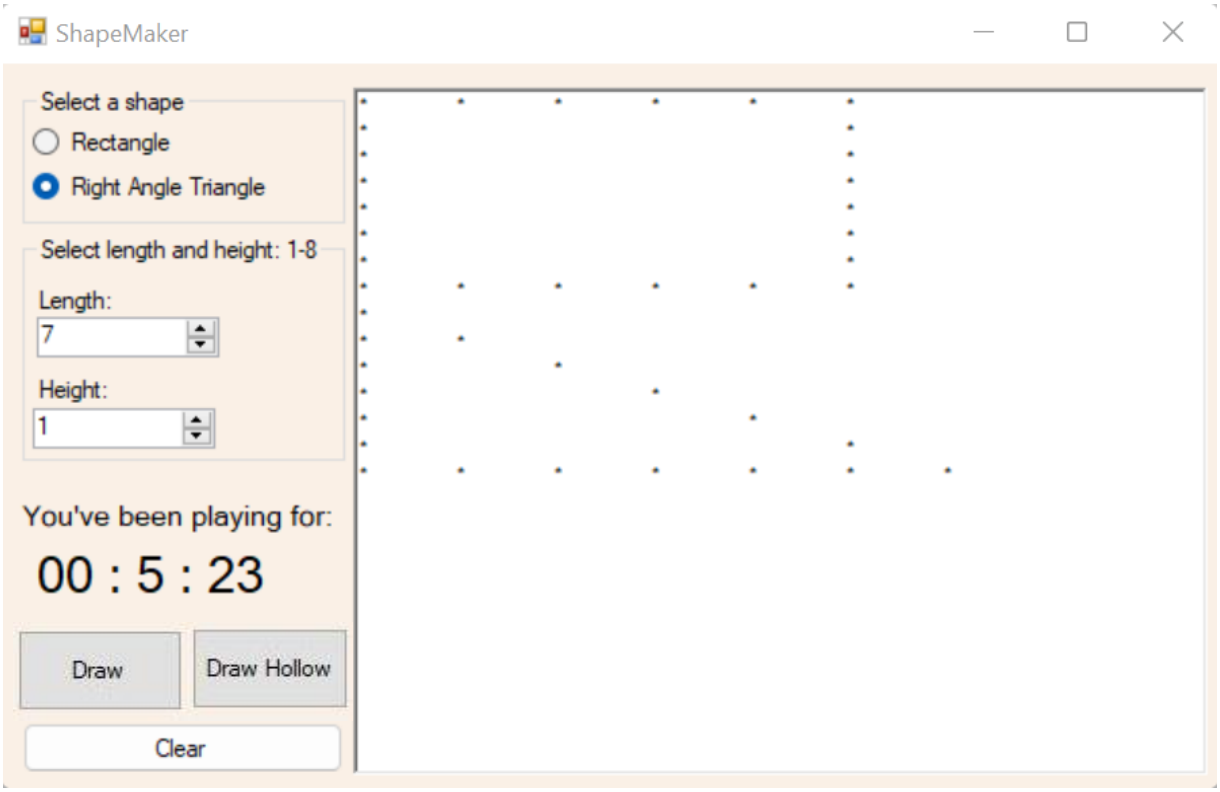


Note & Tips:

- The use of a nested for loop is required.
- Refer to your previous practical exercises.
- Set the timer to enabled to start, so it runs when the application opens.
- **Remember:** the triangle will only use either the height or length dimension, both aren't required.

Make the shapes hollow, so asterisk signs only show on the perimeter of the shape.

Example of hollow shapes:



Marking RUBRIC

Program	**Mark**
Created required form design and all elements are present	1
The **Draw** button draws the selected shape	2
The rectangle is drawn correctly and has the input dimensions	4
The right-angled triangle is drawn correctly and has the input dimension	4
The timer runs on program start and has hours, minutes and seconds	3
The **Clear** button clears the rich textbox	1
Sufficient use of **comments** in your code	1
Drawing hollow shapes	4
Total	**/ 20**

Submit your Practical 7c project on ClickUP as follows:

Due Date: 22nd May 2023.

Name your project, **INF154Prac7xxxxxxxxx** (where xxxxxxxxx is your student number) and compress (zip) your project.

Submit under the Practical 7 submission link.