

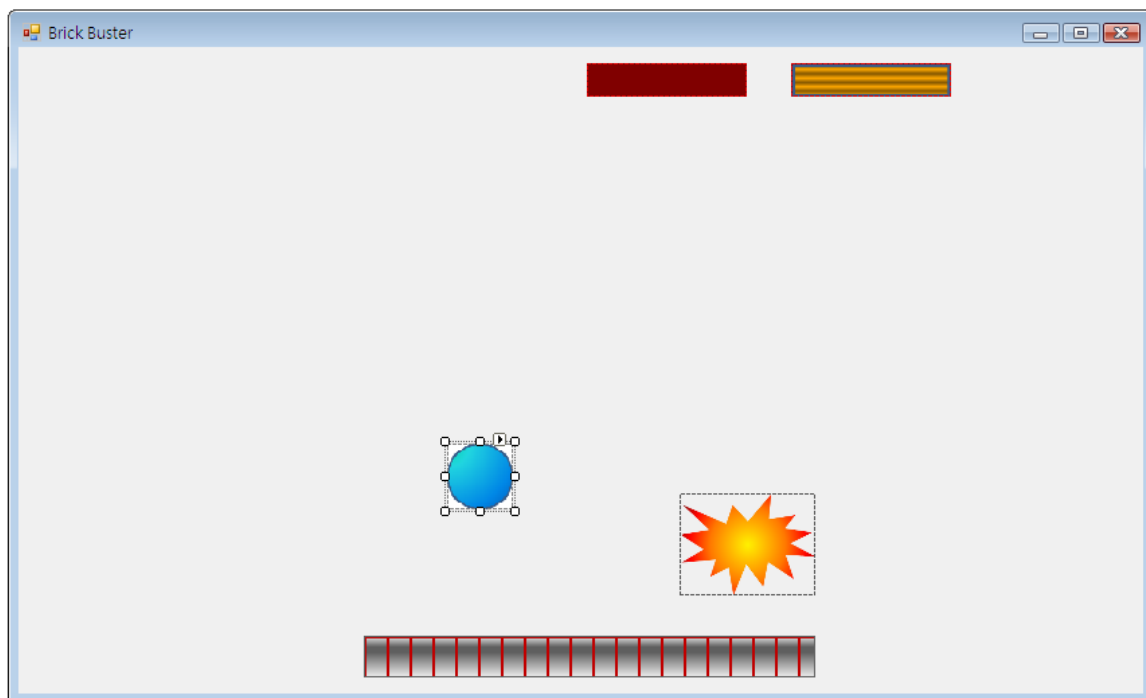
Homework Assignment 005 (2020)

Brick Buster Computer Game

Create a Win application project named the project and solution names as <your student ID><YourName>Ass005BrickBuster. Practice the programming and software design techniques learned in the Lab to complete your computer game.

Modify the collision checking algorithm to bounce the ball in the correct direction, when it smashes a brick. Make the game look commercial one, as possible as you could. For example, add and display extra features such as, scores of the players, number of lives left; provide more levels, more sound effects, and perhaps capability to change bouncing direction and velocity, etc.

Pre-study a little bit about array usages in C# to add a grid of bricks automatically. REMEMBER THAT ADDING AS MANY COMMENTS AS POSSIBLE for Extra Credit!



Hints:

class/struct	Properties	Methods	Events
Rectangle	Left, Right, Top, Bottom, X, Y (respect to its parent), Width, Height	IntersectWith()	
Form	ClientRectangle (type: Rectangle)		Click

Timer	Interval, Enabled		Tick
PictureBox	Image, SizeMode		
Control (including Button, PictureBox)	Let, Top, Bounds (type: Rectangle)		MouseDown, MouseMove

Sample code snippet of dynamically add a grid of bricks (objects of PictureBox):

```

int rowNum = 3, colNum = 10;
int brickWidth = 40, brickHeight = 20;
PictureBox[,] bricks; // two dimensional array
bricks = new PictureBox[rowNum, colNum];
// for-looping statement iterating through row indices
for( int i = 0 ; i < rowNum ; i++ )
{
    // iterating through column indices
    for( int j = 0 ; j < colNum ; j++ )
    {
        // instantiate the picture box object
        bricks[i, j] = new PictureBox( );
        bricks[i, j].Width = brickWidth;
        bricks[i, j].Height = brickHeight;
        bricks[i, j].Left = 10 + j* ( brickWidth + 10 );
        bricks[i, j].Top = 5 + i * ( brickHeight + 5 );
        bricks[i, j].BackColor = Color.Gold;
        // add the picture box object to
        // the collection of controls of the form
        this.Controls.Add( bricks[i, j] );
    }
}

```

