

Pong 6: Sound

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Time required: 30 minutes

Comment each line of code as shown in the tutorials and other code examples.

Follow all directions carefully and accurately. Think of the directions as a minimum requirement.

Simple Pong Project Sequence

To give you an idea of what this project entails, here is the project sequence. If you are being creative with the project, you might want to wait until you get to that stage of the project.

1. Moving Ball
2. Bouncing Ball
3. Keyboard Input
4. Collision Detection
5. Scoring and Speed
6. Sound

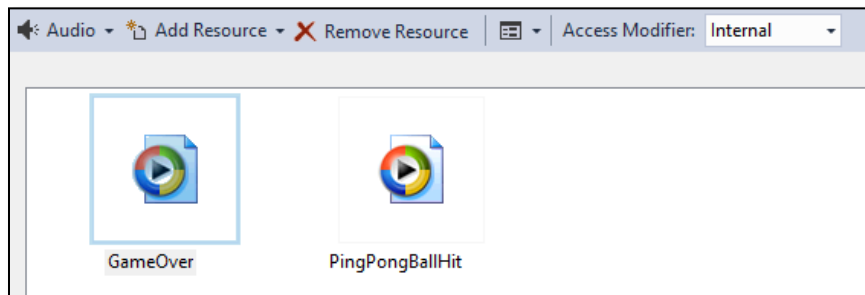
Program Description

Let's add some sound to our game to finish this project and make it snazzy!

Resources

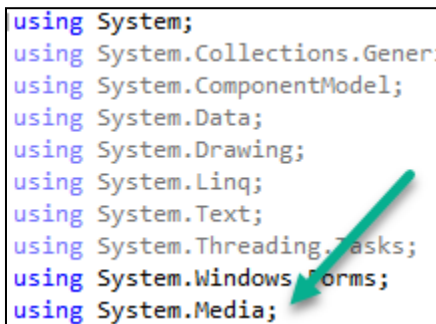
Add GameOver.wav and PingPongBallHit.wav to the Resources of the project. These files are attached to this assignment.

1. Go to the Project Menu, Simple Pong Properties.
2. Click on Resources.
3. Click the down triangle next to Images and choose Audio.
4. Click Add Resource to add each wav file to the project.



The Code

1. Add the following directive to the top of the program as shown: **using System.Media;**

A screenshot of a code editor showing a list of 'using' directives. The list includes 'using System;', 'using System.Collections.Generic;', 'using System.ComponentModel;', 'using System.Data;', 'using System.Drawing;', 'using System.Linq;', 'using System.Text;', 'using System.Threading.Tasks;', 'using System.Windows.Forms;', and 'using System.Media;'. A green arrow points to the 'using System.Media;' line, which is the last line in the list.

2. Add the following **SoundPlayer** objects to the existing form level variables and constants.

```

public partial class Form1 : Form
{
    const int WIN = 10;           // How many games it takes to win
    const int INCREASE_SPEED = 1; // Increase game speed factor
    int playerScore = 0;          // Track player score
    int computerScore = 0;        // Track computer score
    const int DISTANCE_FROM_EDGE = 10; // Distance of computer paddle from edge of playing field
    int ComputerPaddleSpeed = 5;  // Set the Computer paddle speed in pixels
    bool GoUp;                    // Boolean used to store keyboard up arrow status
    bool GoDown;                  // Boolean used to store keyboard down arrow status
    const int PLAYER_PADDLE_SPEED = 8; // Set the Player paddle speed in pixels
    const int TIME_DELAY = 10;    // How "fast" the game runs
    const int SPEED_X = 2;        // X movement speed constant
    const int SPEED_Y = 2;        // Y movement speed constant
    int MoveX = SPEED_X;          // Set horizontal movement/speed of the ball in pixels, based on SPEED_X
    int MoveY = SPEED_Y;          // Set vertical movement/speed of the ball in pixels, based on SPEED_Y

    // Create Soundplayer Objects
    SoundPlayer ballPlay = new SoundPlayer(Properties.Resources.PingPongBallHit);
    SoundPlayer gameOverPlay = new SoundPlayer(Properties.Resources.GameOver);
}

```

3. Modify the following code to the end of the **KeepScore()** method to play an endgame sound.

```
// End the game
if (playerScore >= WIN)
{
    gameOverPlay.Play();           // Play a winning sound
    MessageBox.Show("You Won!");
    computerScore = 0;             // Reset the scores for the next round
    playerScore = 0;
}
if (computerScore >= WIN)
{
    gameOverPlay.Play();           // Play a winning sound
    MessageBox.Show("The Computer Won!");
    computerScore = 0;             // Reset the scores for the next round
    playerScore = 0;
}
```

4. Modify the **DetectCollision()** method to give a paddle sound.

```
// If either paddle collides with the ball, change direction of the ball
private void detectCollision()
{
    // If ball hits the player or computer paddle
    if (Ball.Bounds.Intersects(Player.Bounds) || Ball.Bounds.Intersects(Computer.Bounds))
    {
        MoveX = -MoveX;           // Reverse direction
        ballPlay.Play();           // Play Ping Pong ball strike sound
    }
}
```

Congratulations! You have completed the Simple Pong game!

With what you have learned, how can you modify and enhance this game to make it more interesting?