

SilverCoders

DIGITAL LITERACY IMPROVEMENT THROUGH EFFECTIVE
LEARNING EXPERIENCES FOR ADULTS



CHALLENGE #23 **PONG**

CODING TRAINING PROGRAMME **FOR +55 ADULTS**



SILVER CODERS

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STRUCTURE OF THE CHALLENGE

DESCRIPTION

You were provided with a setup that is meant to work as the basis for this pong game. You already have the paddle and the ball. You now have to make them move correctly so that the player can hit the ball...

GENERAL GOAL

In this challenge you are going to create a pong-type game. But, in this case, with the added difficulty of having a circular playground.

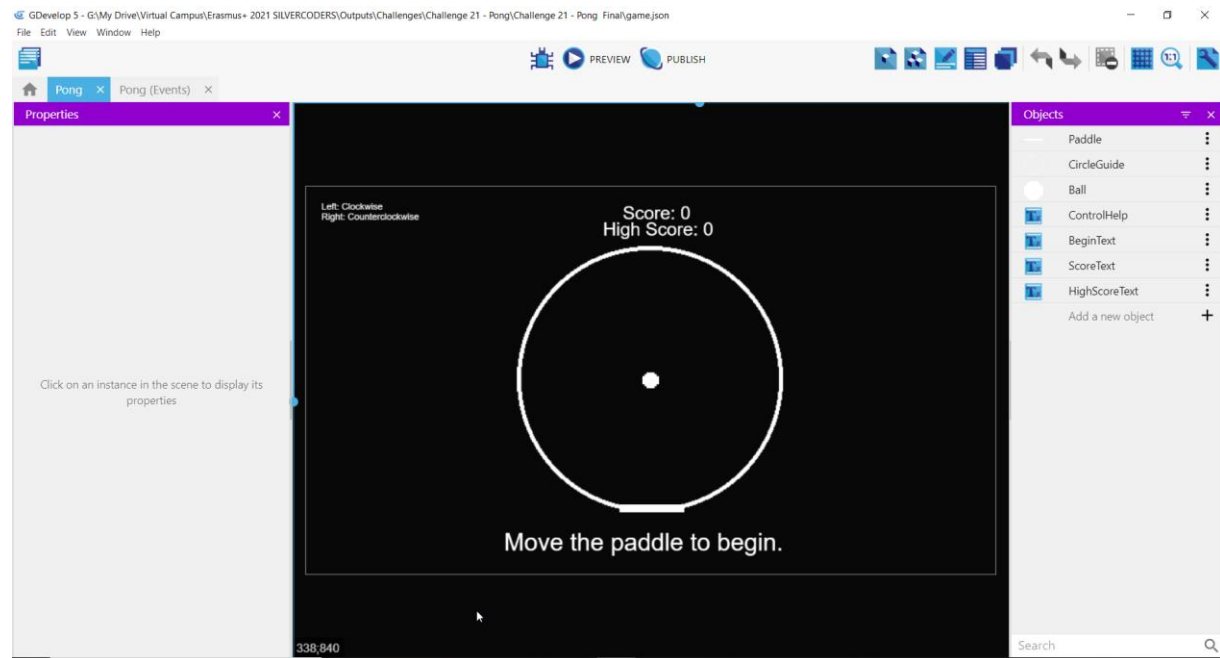
LEARNING OBJECTIVES

In the end of this challenge, you will be able ...:

- To have experience with a visual programming suite and be able to code standard small piece of software with it.
- Know what statements and command lines are and what they mean for a compiler.
- To be able to write instructions using correct syntax and with minimal errors.
- Know what operators are, what they do and which symbols stand for which operators.
- To be able to understand the assignment of values to variables and how to change them.
- To know all the basic arithmetic operations and how to use them.
- Recognize and know how to use all the data structures related to numbers.
- To know the structures linked to the use of text, such as strings and characters.
- To be able to use If statements correctly to execute code according to a certain defined fixed condition.

INSTRUCTIONS

This is your initial setup. Right now, you just have the objects there so you have to add the events to make the game work. But to start with you should carefully look at the object properties and behaviours.



Here is the code to update the position of the paddle. The paddle is moved using the Left and Right keys. When that happens the variable PaddleAngle is updated.

Every frame the value of the variable PaddleAngle is checked and the position is changed accordingly. The Paddle is also rotated (angle change) to look always tangent with the circle.

At every frame	
Every frame we update the position of the paddle around the CircleGuide	
Add condition	Put Paddle around CircleGuide , with an angle of Paddle.Variable(PaddleAngle) degrees and CircleGuide.Width()/2 pixels distance.
	Change the angle of Paddle : set to Paddle.AngleToPosition(CircleGuide.CenterX(), CircleGuide.CenterY()) + 90
Add action	
Rotate the paddle based off what key is pressed.	
If one of these conditions is true:	Change the variable PaddleAngle of Paddle : add 2
Left key is pressed	Add action
Add a sub-condition	
Add condition	
If one of these conditions is true:	Change the variable PaddleAngle of Paddle : subtract 2
Right key is pressed	Add action
Add a sub-condition	
Add condition	
Bounce the ball, play a sound, and change the score when the ball hits the paddle.	
Ball is in collision with Paddle	Bounce Ball off Paddle
Trigger once	Play the sound Bounce.wav , vol.: , loop: no
Add condition	Change the scene variable Score : add 1
	or Change the text of ScoreText : set to "Score: " + VariableString(Score)
	Add action

We also check for the collision with the paddle and if we hit the ball the Score variable is updated

When the ball leaves the circle we count how many strikes we achieved.

Play the lose sound when the player has lost. Restart the scene. (Note: to not cut off the sound, go to scene properties and turn off stop sounds on startup.)	
The number of Ball objects ≤ 0	Play the sound lose.wav, vol.: , loop: no
Trigger once	Change to scene CurrentSceneName()
Add condition	Add action
If the score is higher than the high score, set the high score to the new score.	
The scene variable Score > GlobalVariable(HighScore)	Change the global variable HighScore: set to Variable(Score)
Add condition	Add action

RESOURCES

Challenge 23 (Basic)