

SilverCoders

DIGITAL LITERACY IMPROVEMENT THROUGH EFFECTIVE
LEARNING EXPERIENCES FOR ADULTS



CHALLENGE #21 **CANNON**

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 for you to recall the most important elements of the Gdevelop environment: the scene, objects, forces and the sheet of events. The events available allow you to move the cannon and shoot a ball. You will then be asked to improve the game, making it more dynamic (the player has to destroy a target).

GENERAL GOAL

In this challenge we are going to add some obstacles to the game and then create a game to destroy them.

LEARNING OBJECTIVES

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

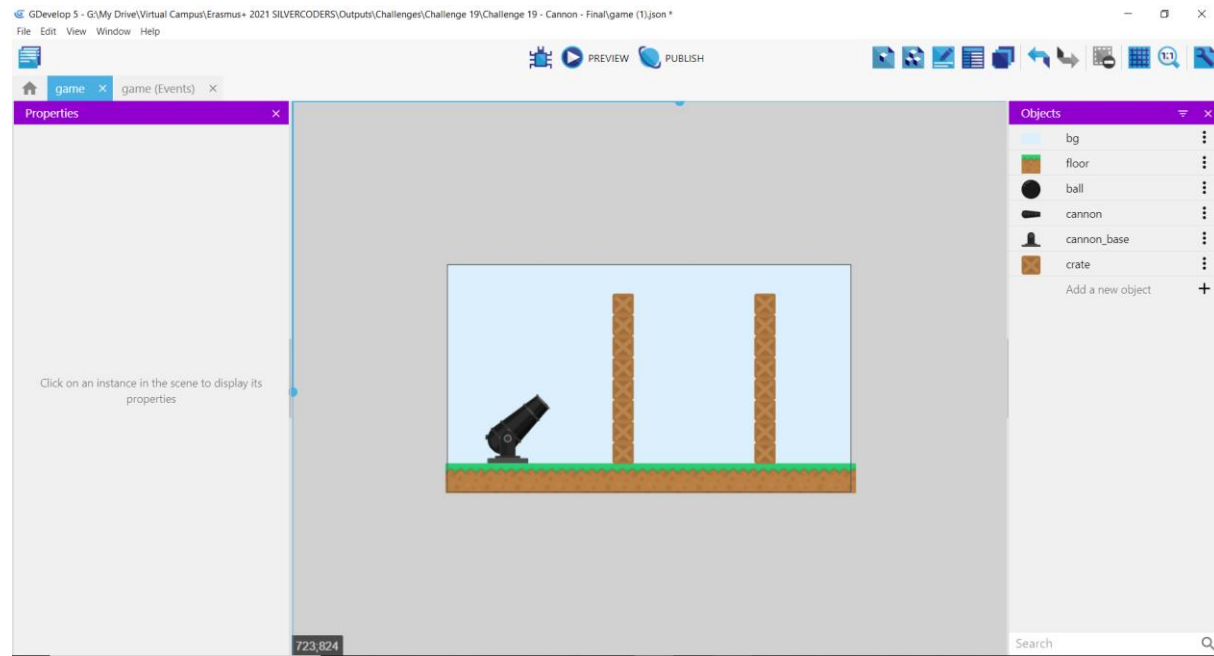
- To understand how code is treated by a computer and what is the role of a compiler.
- To be familiar with the concept of low and high level languages and understand what their differences are and what is required to code in either of them.
- To have experience with a visual programming suite and be 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.
- To understand the concept of Force



INSTRUCTIONS

Use the **File** menu to **open** the Challenge 21 – Basic game

This should be what you get



- Press the **Preview** button to play the game. You can move the cannon and shoot balls to get a feel how it works
- Repeat the game as many times as you want. To repeat you have to close the game window and press the **Preview** button in the editor.
- Now that you know what are the game mechanics (what you can do in the game) let's see how it is done.

This rotates the cannon towards the mouse pointer

Add condition

Rotate **cannon** towards `MouseX();MouseY()` at speed 0 deg/second
Add action

This creates the ball from the cannon and adds a force to it.

Touch or Left mouse button is down





Trigger once

Add condition

Create object **ball** at position `cannon.PointX("spawn");cannon.PointY("spawn")` (layer:)
Apply to **ball** a force of length 100 towards `MouseX("");MouseY("");0`
Change the z-order of **ball**: set to `cannon.ZOrder()-1`
Add action

- The first event moves the cannon towards the X and Y position of the mouse cursor
- The second event checks for a press on the left mouse button and then creates a ball and shoots it in the direction of the mouse cursor by applying a **Force** to the ball.

- Let's create now a target for the cannon. Do **Add new object, Search Asset Store** and choose a rock from **Foliage Pack**. Call the Sprite **Rock**. Place it between the crate piles.
- Now, we must check if the cannon hits the rock.

 Rock is in collision with  ball	 Delete  Rock
Add condition	Add action

- Play with the value of the **Force** so that the ball is not fired so high.
- Now, it is up to you to do the following
 - o Create a counter to know how many balls were fired until we hit the rock

When the player successfully destroys the rock give him/her the option to restart the game or to exit. Go back to Challenge 20 for information.

RESOURCES

Challenge 21 (Basic)