SilverCoders

DIGITAL LITERACY IMPROVEMENT THROUGH EFFECTIVE LEARNING EXPERCIENCES FOR ADULTS

CHALLENGE 22
ADVANCED GEOMETRY HUNTER

CODING TRAINING PROGRAMME
FOR +55 ADULTS

SILVER CODERS

ERASMUS+ No. *2020-1-SE01-KA227-ADU-092582*

Co-funded by the European Union

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 and the sheet of events. The events available allow the player to move the monster and catch the geometric pieces that, now are falling. You will be asked to improve the game, making it more dynamic (bombs also appear and may kill your monster).

GENERAL GOAL

In this challenge we are going to improve the Geometry Hunter game, making it more interactive and frenzy.

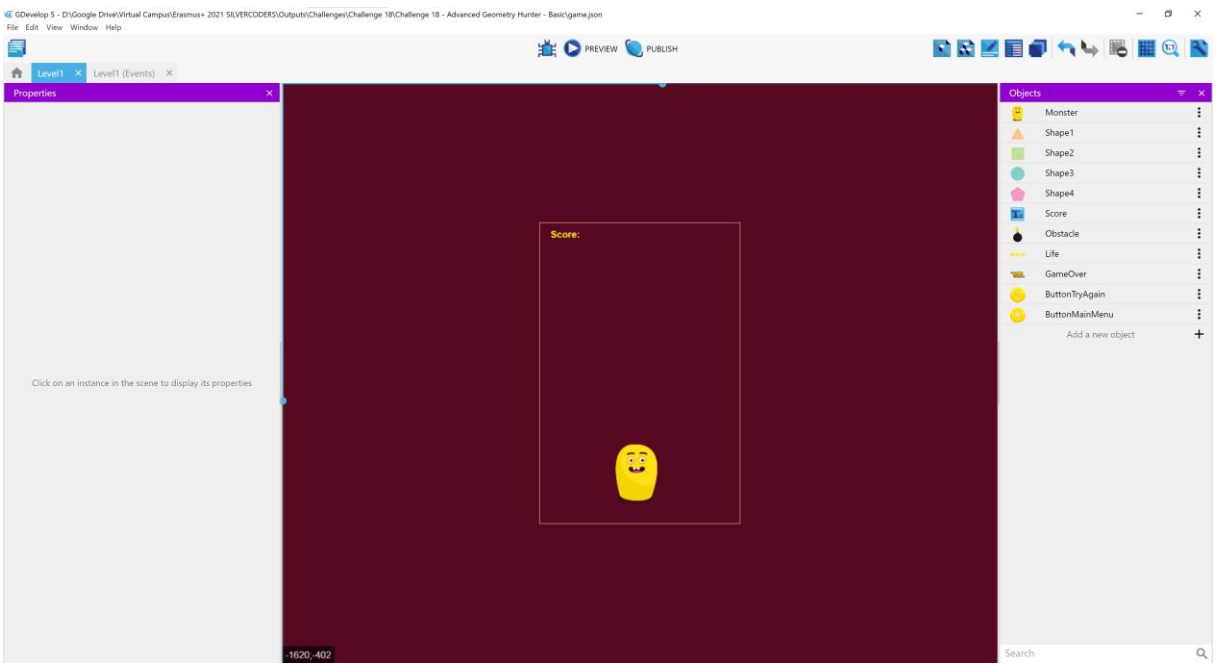
LEARNING OBJECTIVES

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

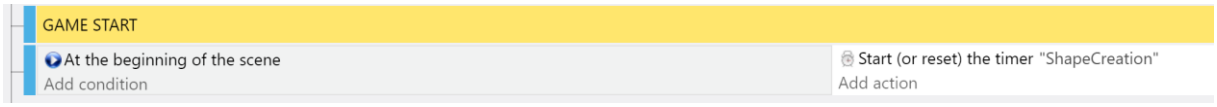
- To understand how code is treated by a computer and what is the role of a compiler.
- To be familiar with the concept of low and high level languages and understand what their differences are and what is required to code in either of them.
- To have experience with a visual programming suite and be 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 know how to use the Gdevelop editor
- To understand the concepts of scenes, events and objects

INSTRUCTIONS

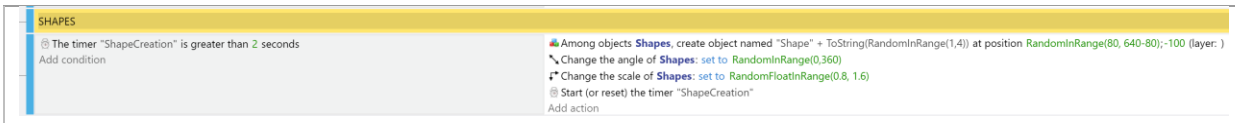
- Start by opening the Gdevelop editor.
- Use the **File** menu to **open** the Challenge 22 – Basic game
- This should be what you get



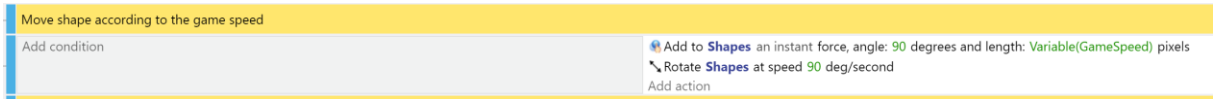
- Press the **Preview** button to play the game. You can move the monster to the left and to the right with the arrow keys in your keyboard and you should catch the geometrical shapes that now are falling. For every piece you catch, one point is added to your score.
- Repeat the game as many times as 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. We will focus on the differences to the last challenge.



- When the game starts we create a **Timer** called **ShapeCreation** which is an object that is always counting the time in seconds.

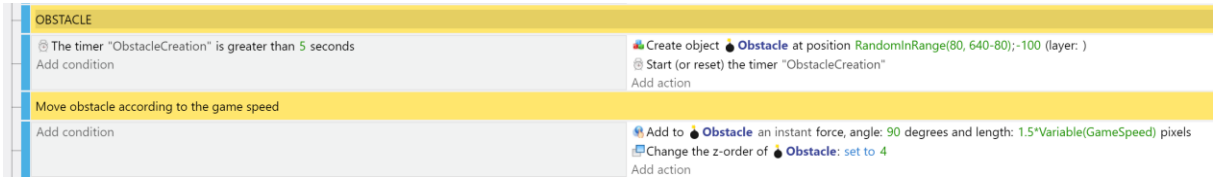


- When the **Timer ShapeCreation** reaches 2 seconds a new shape is created and can be randomly one of the four different shapes. To make the game more fun these shapes are scaled and rotated. The we reset the Timer to 0 to start counting again.

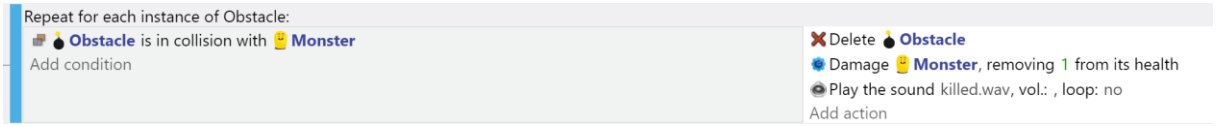


- The shape »falls« by adding a vertical force to it.

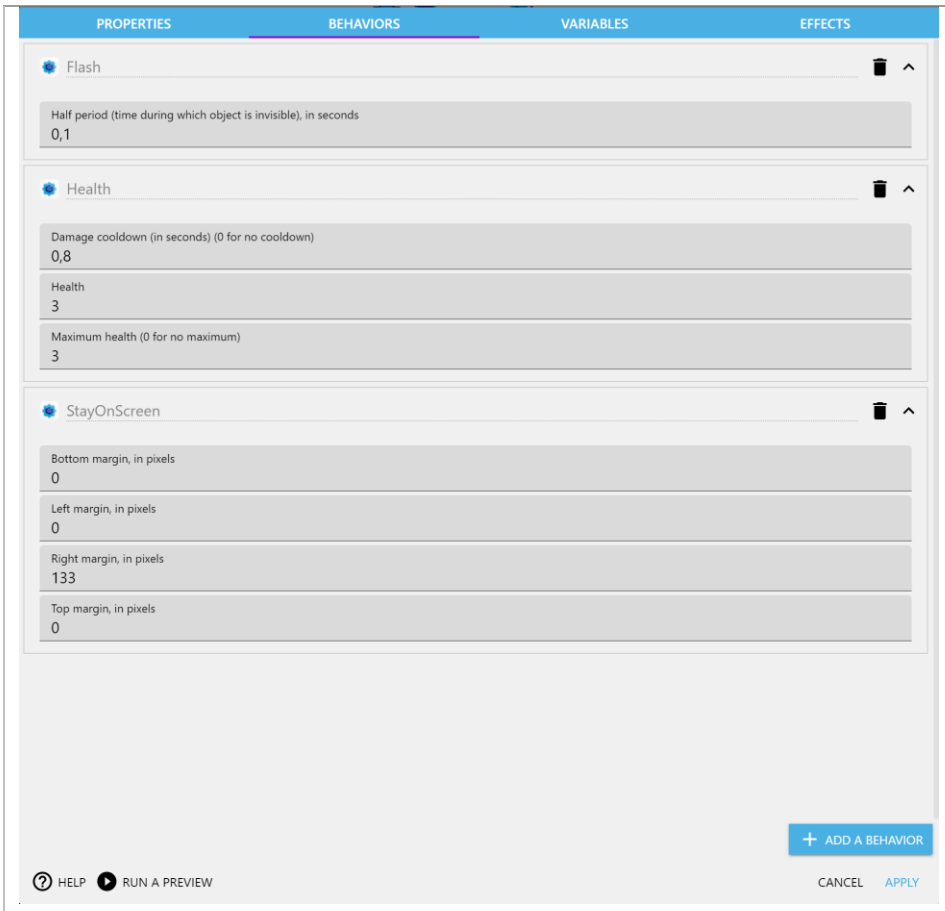
- Let's make the game a little bit more difficult. We are going to drop also some bombs that may remove lives of the monster if it gets hit. For that we are going to use the **Obstacle** object



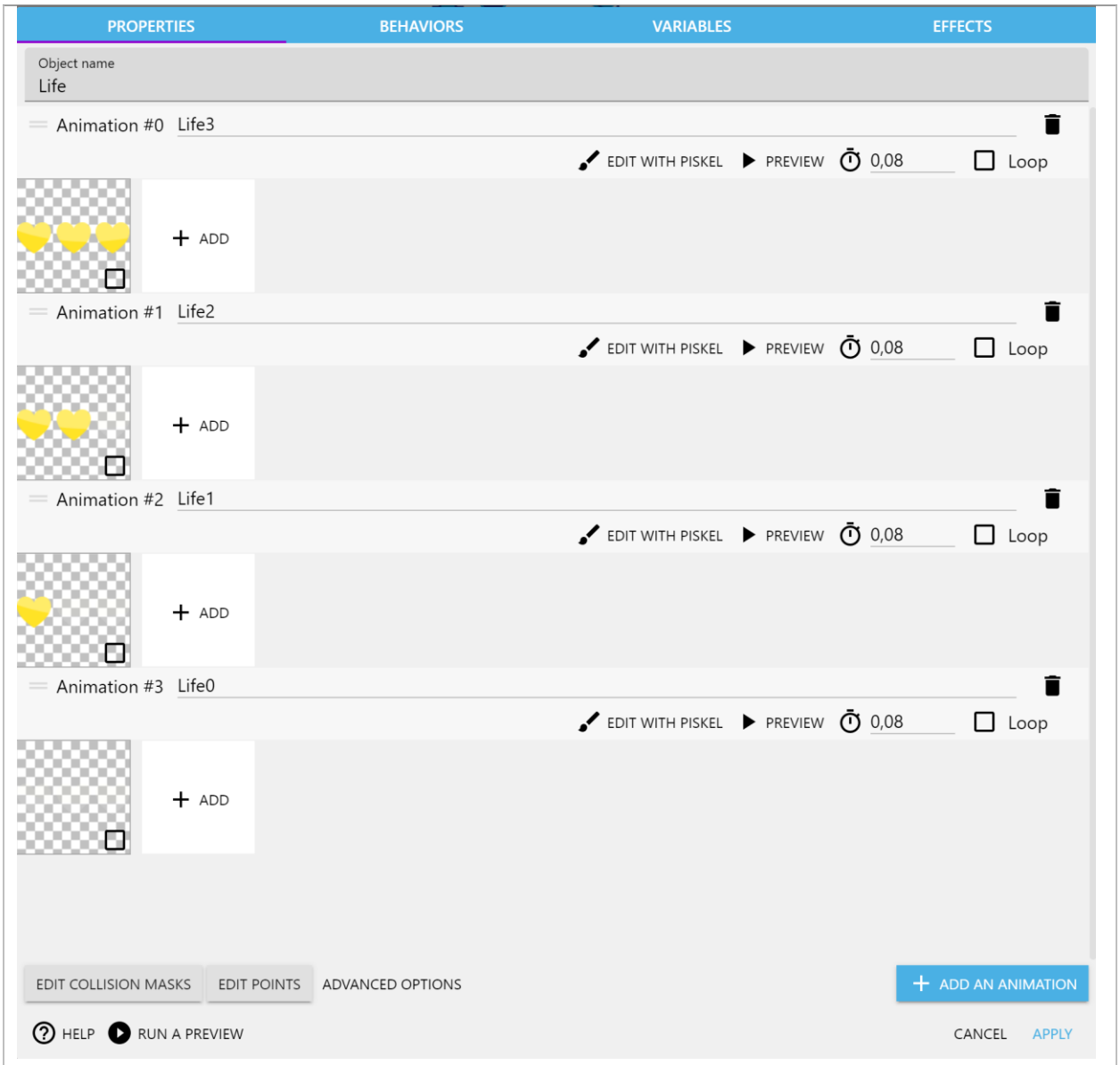
- The code for the **Obstacle** object is similar to the code for the shapes. We have a timer that controls it and we make it fall.



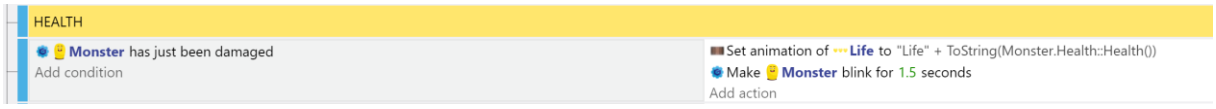
- But if there is a Collision with the Monster, it is damaged and he gets 1 less health point



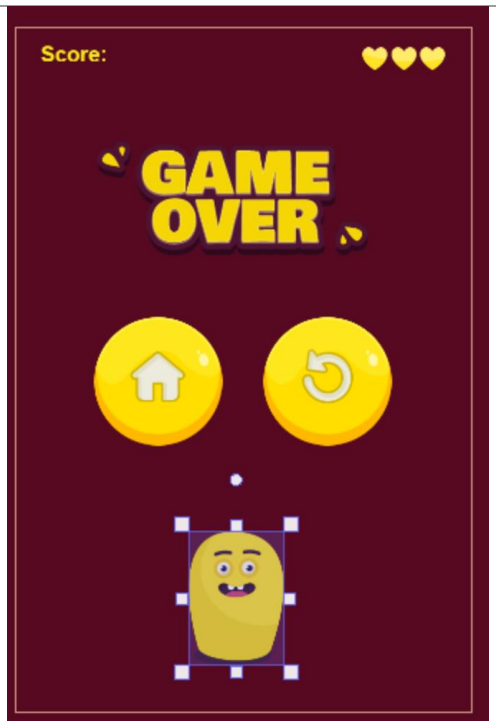
- Health is a **Behaviour,** a standard property that we can associate to the objects. The maximum health is 3.



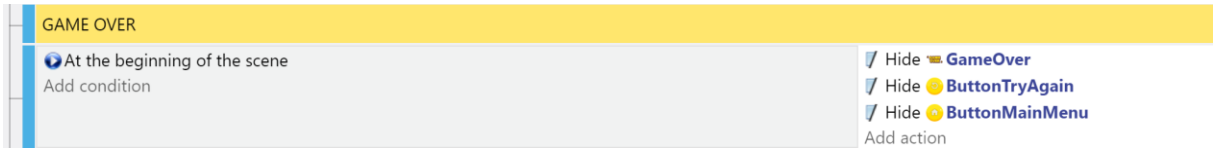
- To represent visually the health of the monster we will use the L**ife** object. This Sprite has 4 frames, each representing a health status.



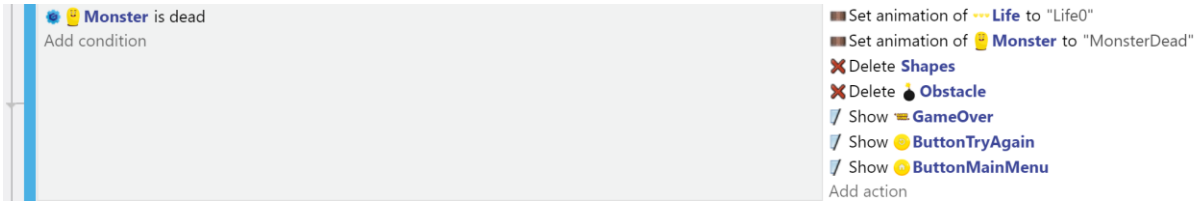
- When the monster is damaged the Sprite moves to the next frame.
- Now, when the monster is without lifes, the monster is dead. We must show the GameOver button and we will create two buttons, one to restart the game and another to leave the game. This what the initial scene looks.

- 

- We don't want to see these objects in the beginning so we hide them.



- And we show them when the monster is dead.



- We now check which button the player clicked on

RESOURCES

Challenge 22 (Basic)