SilverCoders

DIGITAL LITERACY IMPROVEMENT THROUGH EFFECTIVE LEARNING EXPERCIENCES FOR ADULTS

CHALLENGE #27

ASTEROIDS

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

This game we are going to create now is similar to the well known Asteroids game.

GENERAL GOAL

In this challenge we are going to develop an Asteroids type game while learning some instructions that allows us to repeat several times the same instruction.

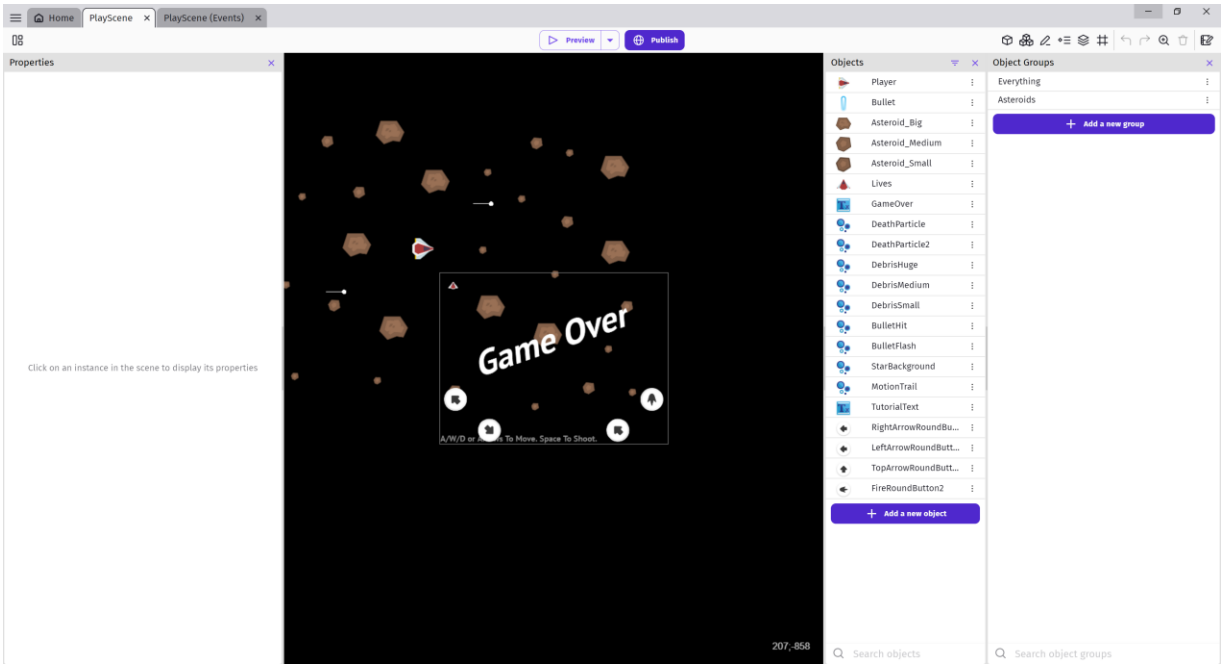
LEARNING OBJECTIVES

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

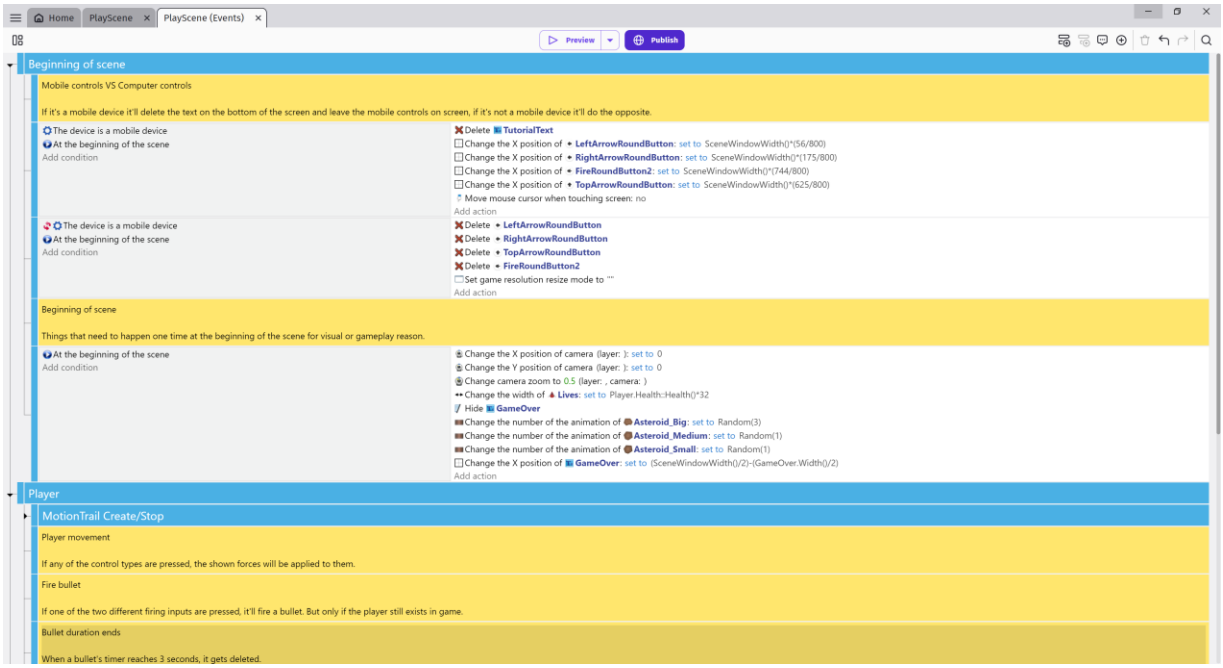
- To have experience with a visual programming suite and be able to code standard small piece of software with it.
- Know what statements and command lines are and what they mean for a compiler.
- To be able to write instructions using correct syntax and with minimal errors.
- Know what operators are, 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.
- To be able to use loop control instructions.

INSTRUCTIONS

This is your initial setup. In this case we just provided the basic objects that you'll need for the game. As usual start by checking them carefully.

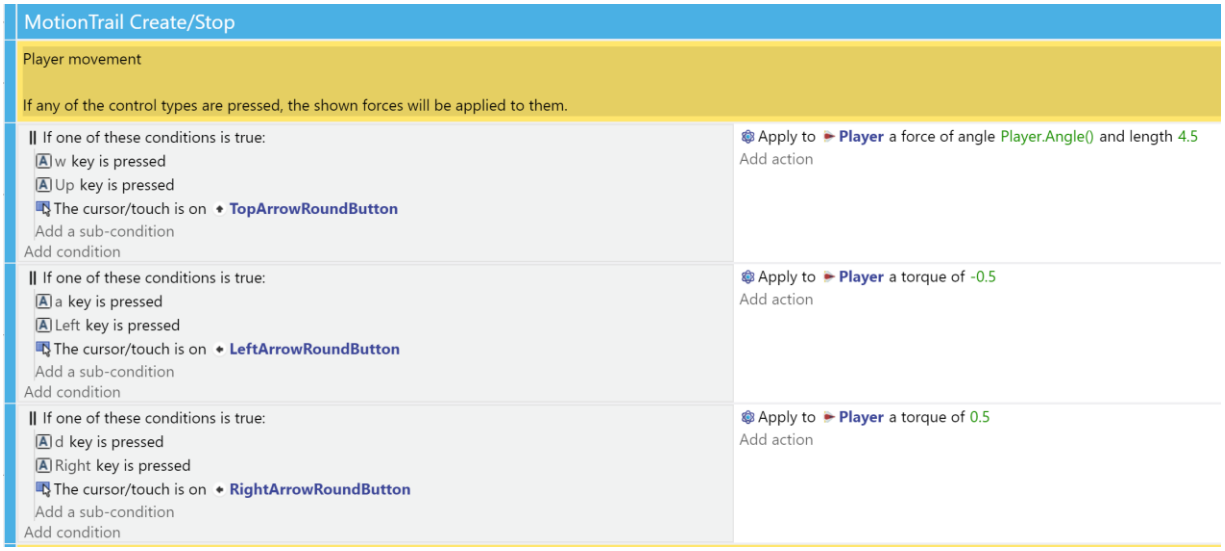


We also have the code that starts the game and we have the structure for the rest of the code.



Our objective is to create a game where we destroy asteroids when they are in the screen.

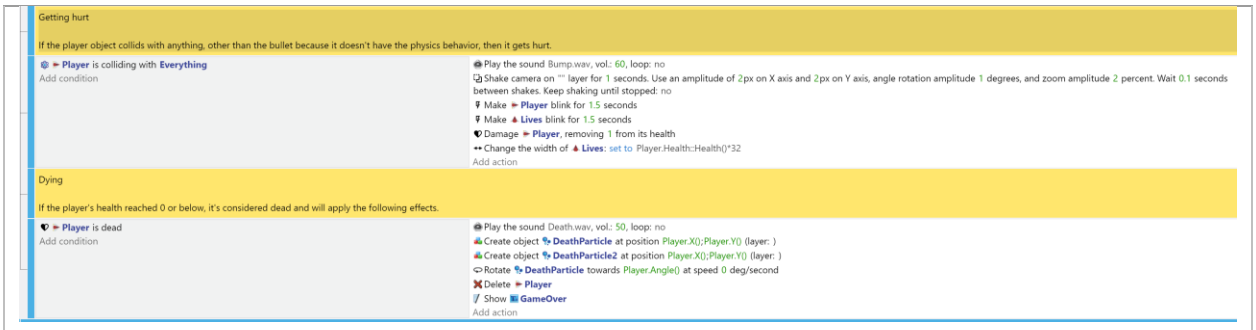
Let's start by allowing the player to control the ship, using keys or the mobile device.



We now define everything related to the firing and the bullets.

We also address what happens if we shoot a bullet that hits nothing (remember we had this question a few challenges ago?).

Now we deal with getting hit and loosing.



Now we deal with the asteroids. In this game when we hit a big asteroid it breaks into medium asteroids and medium asteroids will brake into small asteroids. When we hit small asteroids they are destroyed.

Finally, we do something that is also typical from asteroids games: when something goes out of the screen it appears on the other side (X and Y wrap).

Here we used the instruction Repeat that allows us to execute several times one instruction while a certain condition is met.

RESOURCES

Challenge 27 (Basic)