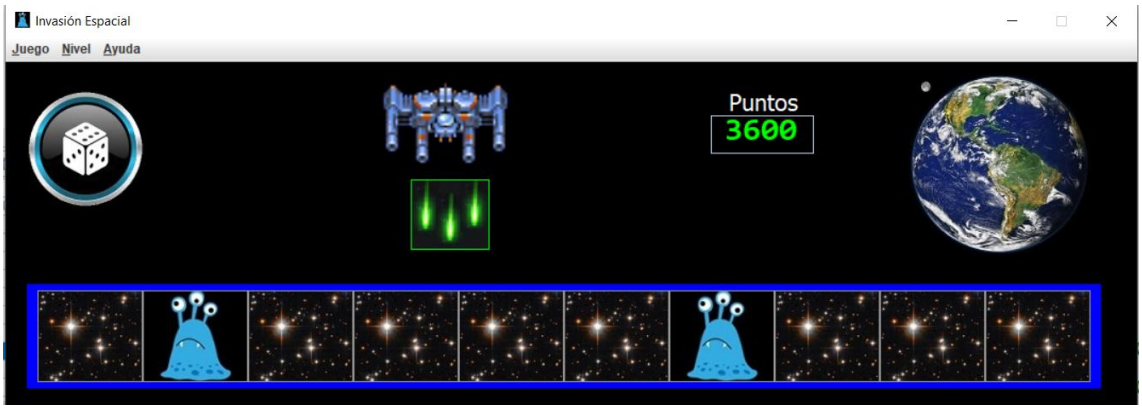
Lab 7

Extending Space Invasion game: Creating dynamic components



1. Goal

The objectives of this practice are:

- Generate buttons dynamically
- Optimize event management for the buttons.
- To expand the game functionality, allowing the user to choose the level of the game:
  - Easy
  - Intermediate
  - Hard

2. Development of the game

1) The easy level (**identified as level 1**) will correspond to a board consisting of 10 squares, 2 invaders, no meteorite and a maximum of 5 shots.
2) The intermediate level (**identified as level 2**) will correspond to a board made up of 8 squares, 1 invader, a meteorite and a maximum of 4 shots.
3) The difficult level (**identified as level 3**) will correspond to a board made up of 6 squares, 1 invader, 2 meteorites and a maximum of 3 shots.

By default, the starting level of the game will be intermediate.

3. Steps

First of all, copy the previous project in a new one. On the new project, modify some of the graphic elements so that they adapt to all cases:
• We change the size of the main window: setBounds (100, 100, **1080, 385**)
• We move to rearrange points and image of the land label

• We changed the position and size of the shot panel: setBounds (111, 117, **490, 80**)

In this practice we will carry out the following activities:

- Resizing the window at runtime
- Dynamic modification of the size and number of columns of the GridLayout of the dashboard panel
- Dashboard panel button creation at runtime. Use of the `actionCommand` attribute.

4. Size of the dash panel at different levels:

Easy level (10 squares):
• The width 1010: setBounds (20, 208, **1010**, 98);
• The columns of grid 10: setLayout (new GridLayout (1, **10**, 4, 0));

Intermediate level (8 boxes):
• The width 815: setBounds (20, 208, **815**, 98);
• The columns of grid 8: setLayout (new GridLayout (1, **8**, 4, 0));

Difficult level (6 cells):
• The width 610: setBounds (20, 208, **610**, 98);
• The columns of grid 6: setLayout (new GridLayout (1, **6**, 4, 0));