# Individual Assignment I:
# DOM-Based Game

**Space Invaders:**

Considered one of the most influential videogames ever, Space Invaders was created by Tomohiro Nishikado and released in 1978. It is a 2D shooting game where the player was able to move along the x axis, and to shoot the incoming invaders. The goal of the player is to destroy an army of invaders that are approaching the earth.
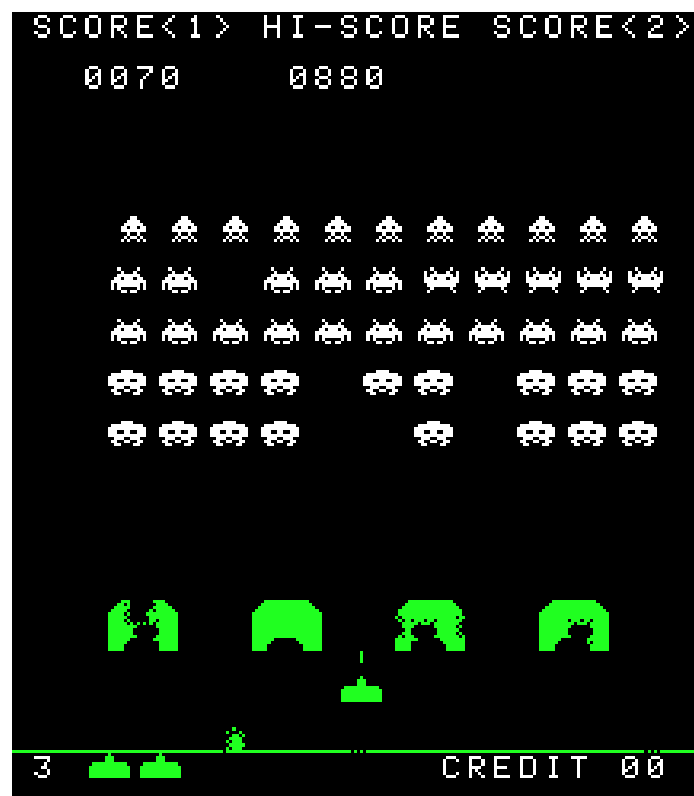


The movement of the invaders was one of the most representative elements of the game: the army of invaders starts moving to the right and when any of the invaders hits the corner the whole army goes down and starts moving left, this movement is repeated until all die or one reaches the surface of the planet. In addition, each time a invader is killed, the speed of movement is increased, making more difficult to shoot them down.

Example of the game:
https://www.youtube.com/watch?v=MU4psw3ccUI

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**What to do:**

You have to replicate Space Invaders as a DOM-based game. You should include some of the **basic functionality** from the original game:

- **(1 point)** Player moves when keys are pressed and collides with the borders of the game

- **(2.0 point)** You must create an army of enemies similar to the original game. You should use different images as the background of the div representing the enemy (search them on the internet and use the "original" ones).

- **(2.0 point)** Enemies move horizontally until any of the enemies hit the wall, then the whole army goes down a "level". The enemies should perform an animation when moving as in the original game (two-frame animations where you switch the background image to another frame)

- **(1.5 point)** Player can shoot at a controlled rate of fire; it is a cannon, not a machine gun, so there is some reload time after each shoot. Bullets from player can hit **one** invader and destroy it.

- **(1.5 point)** Invaders in front line also shoot from time to time. Bullets from invader can hit the player and take a life from him. The player will have three lives, and if runs out of lives (or the invaders reach the surface of the earth) will die and the game will restart in the current level

- **(1 point)** In the original game, some coverage was provided to the player through 4 small buildings that could be destroyed. In the original game they could be destroyed by both (enemies and player) and was partially destroyed with each hit, can you achieve this?

- **(1 point)** Difficulty will be introduced by the enemy's speed and rate of fire and will be based on a control variable. Each time you kill an invader, difficulty will be increased. When you finish one level, next level will start with increased difficulty**.**

- **(1 point)** Extra features present in the original game, audio linked to the speed, flying saucer, Hud for score/lives.

- (**multiplier [0-1]**) You also need create a **small presentation** documenting your work and explaining the functionality implemented:

  - Cover page with basic info (Name, Assignment, Subject, Date…)

  - Explaining how each of the features is implemented and if it works properly or not (showing the game in action).

  - The aim of the presentation is to explain to me in what have you invested your hours of work.

  - The presentation will include questions from the teacher, to verify the authorship of the work presented.

  - Depending on the presentation the grade will be multiplied by a number between [0 - 1].

**Delivery:**

    **Format:** A compressed folder including the game and the presentation.

    **Deadline:** To be discussed

    **Assessment Criteria:**

- Functionality as requested
- Quality of the code produced

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