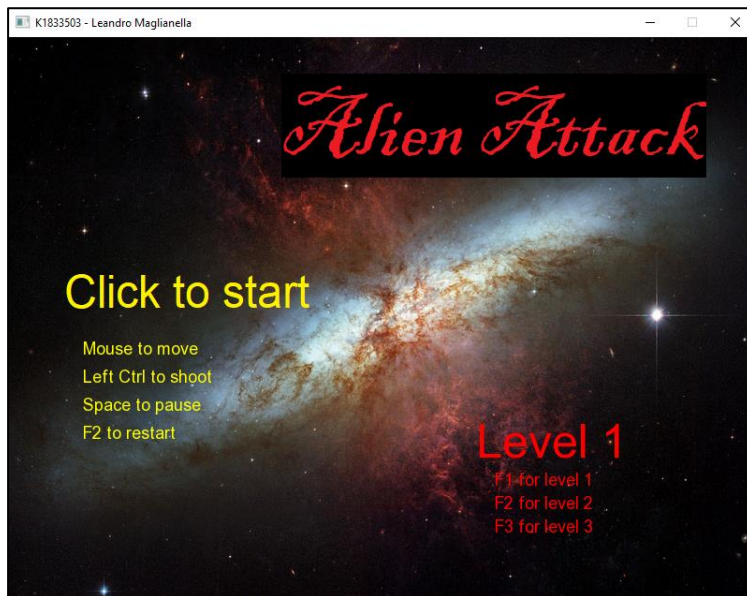# CI4515 – Games Programming Assignment: game summary

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I created a new game called "Alien Attack", the goal of the game is to complete 3 levels: in the first two you face waves of enemy spaceships (of 20 and 25 enemies respectively), while in the third level there is a boss fight against a large alien spacecraft. When a level is completed, the game automatically continues to the next one. The game ends either with victory or when the player loses all the lives available to him.

The game has an initial menu screen where game controls are written and where the player can select which level to play. During the game, the player has the option to restart the game by pressing the F2 key and to pause it by pressing the space bar.

At the top left is the player's number of lives, at the top right the number of enemies to be destroyed in order to progress in the game.
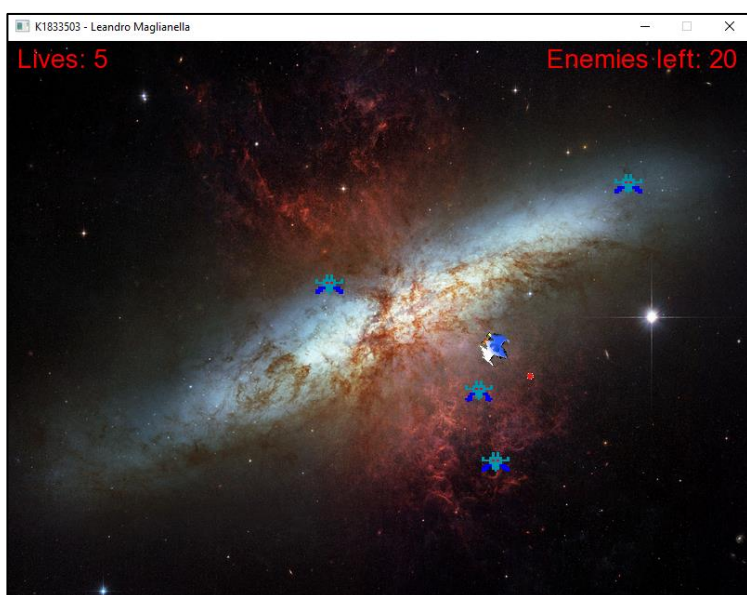
The game consists of multiple objects, created both statically and dynamically, let us analyse them:

• Background: in the game, there are three static backgrounds, different for each level.

• Player: the player's spaceship is created at the beginning of the game. It moves at a constant speed following the movements of the mouse cursor. It has five lives, which can be increased by one by collecting a heart or decreased when the spacecraft collides with an enemy or when it is hit by a shot. When lives are over, the game is lost. The

game is automatically lost even if the player leaves the playing area. The player can fire shots from the spacecraft by pressing the left ctrl button.

- Shot: shots are generated dynamically during the game and can be fired by the player, the UFOs and the boss. When the bullets fired by the player hit, they destroy the enemies or take a life away from the boss; bullets fired from enemies do not harm other enemies and take a life away from the player. The player shoots red bullets while the enemies yellow bullets. If a bullet leaves the playing area, it is deleted from the game.

- Explosion: when a shot hits something or when the player collides with an enemy, an explosion animation is produced (which is deleted after its use). In the game, there are two types of explosions: one for aliens and the other for UFOs and the boss.
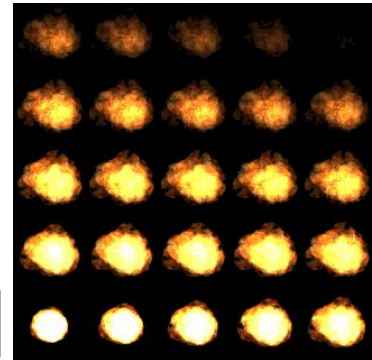
- Heart: a heart dynamically appears in the game about every 10 seconds. If the player passes over it, he gains a life; otherwise, the heart disappears after 8 seconds.

- Alien: aliens dynamically appear approximately every 2.5 seconds in the first and second levels. In the first level, they are blue while in the second level they are red. The A.I. they are equipped with makes them move towards the player's spacecraft; if they manage to collide with it, the player loses a life and they destroy themselves. They cannot shoot.

- UFO: they appear dynamically approximately every 3.33 seconds only in the second level. The A.I. they are equipped with makes them move towards the player's spacecraft; if they manage to collide with it, the player loses a life and they destroy themselves. They shoot about every 2.5 seconds.

- Boss: it appears in the third level of the game. The A.I. they are equipped with makes them move towards the player's spacecraft; if they manage to collide with it, the player loses a life and the boss loses a life. It has 30 lives, when it dies the game ends with the player victory. It shoot about every 0.66 seconds.

- Animations: in addition to the explosion animations, there are animations in the game that simulate the movement of aliens and the spaceship.

- Sounds: there are several sounds in the game. Background music is played continuously in a loop. There are sounds effects for explosions and shots. A sound is played when a heart is collected. Finally, a victory sound is played when the player defeats the boss.