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Space invaders

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* Ting vi kunne have gjort anderledes?

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# Introduction to the game

We have decided to create our version of the popular arcade game Space Invaders.

Space Invaders is a Japanese arcade game made popular in the U.S in the 1980’s.

Space Invaders is a fixed 2D shooter where the player controls a ship by moving it horizontally across the bottom of the screen and shoots a laser at the advancing enemy aliens. The enemy aliens is fixed horizontally and vertically and moves together at all times making player placement fairly predictable. The aim of the game is to eliminate all enemy aliens without dying, the enemy aliens will also shoot at the player ship as it advances and as soon as the enemies hit the bottom of the screen, you lose a life. When you shoot an enemy you gain points. When you shoot the enemies the enemy movement and the music speeds up to stress the player and increase the difficulty.

For our game, we have simplified the original game due to time restrictions. For our game we currently have just one enemy type and we have no barriers as the enemy does not shoot at you. We also made our shooting function so that it fires immediately after hitting and enemy or once the bullet gets to the top of the screen.

# Structure of the game

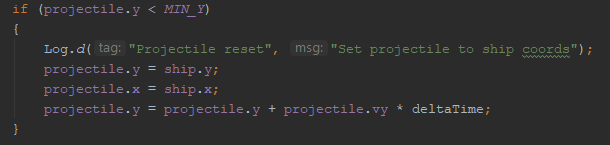
# Challenges during development

Enemy collision hitbox:

During the course of the development we encountered an issue where the enemy hitbox was too small and the projectile would sometimes go through it rather than register it as a hit. We have at the point of hand-in not solved this issue but expect to have it solved before the exam.

Shooting function:

We had some challenges with our shooting function and specifically that it would only shoot once and then disappear from the screen. We solved this by resetting the projectile rather than creating a new projectile every time we wanted to shoot. We however also encountered an issue where the projectile would follow the ship on the x-axis after being shot. We solved this by changing the projectile x-axis to the ship x-axis in the update method at the point of shooting meaning that the x-axis for the projectile would remain at a fixed x value at the correct ship position.



This solution fixed 2 things for us: the projectile while moving up will not change direction on the x-axis and it shoots from the same x and y-axis that the ship is at.

Resetting enemy position:

During development we encountered an issue where after the enemies hit the bottom of the screen and the player loses a life, the enemies would not reset to it’s correct position but however remain at the bottom of the screen causing an instant loss of all lives. At the point of hand-in we have not solved this issue but expect to have solved it before the exam.

# Conclusion/improvement

# Code improvements

# Problems we have encountered during development

# Things we could have done better?