Create Space Invaders ( <https://en.wikipedia.org/wiki/Space_Invaders)>, a classic arcade game, first released in the wild in 1978. One of the most popular games ever.

Develop a solution that includes the concepts we've discussed over the past semester.

The user controls earth's defence against the alien invaders. Use your keyboard to move it left or right and use the space bar to fire missiles to the invaders. Alternatively, move the defender by moving your mouse left/right and shoot using a left click.

40 Invaders in a grid (of 5 rows of 8 invaders per row) randomly release missiles at the defender and move from left to right on the screen. Whenever the outer most invader reaches the edge of the playfield, all the invaders move one row down.

The player has three lives. Whenever the invaders' missiles hit the defender, the player loses one life. It's game over when the player has no lives left.

Whenever the player shoots an alien, 10 point are added to the player's total. When all the aliens are shot, the grid is recreated and start again from their initial position at the top of the screen. The defender can only shoot when the previous missile has left the stage. Bunkers for the defender to hide under are optional.

Show/keep track of the player's score and list a the 5 highest scores whenever a game is over.

The attached image show the very minimal representation of the game, but use your creative abilities and make it a fun game to play. Think about Scratch in the very first lesson and how we used different skins for making the cat move? Create a space background, can you make the invaders explode when they get hit?

I want to see your solution in action: store your solution in a folder named cw7025\_december\_2022 on your personal www directory on scss.tce.ie

Upload your solution to your personal www and send me the link scss.tcd.ie/~<your\_user\_name>/cw7025\_december\_2022/ (all lowercase). Feel free to leave a comment to clarify your logic and to explain the decisions you made throughout the development of your solution.

If you can send me a link to your git repository, that would be much appreciated, but it's optional.

Deadline:

Sunday the 10th of December at 23:59

Criteria:

Does it work? Are there no glitches?

Structuring your solution properly: javascript files in the correct folder, css, images if needed. Is everything sourced properly in the HTML (ideally in the <HEAD></HEAD> section) of your html file?

Legibility of the code. Use correct indentation and spacing, remove code that has been commented out?

Correctly naming variables and functions.

Use of jQuery. I don't want to see any document.getElementBy… use the jQuery equivalent.

Correctly using classes, the right amount of abstraction, containing the right variables and functions.

Creativity, what can you do to wow the gamer? Think sound effects, graphics, boosts (flying soucers, multi-missle firing, other)?

If you need help, or if you need to bounce some ideas off, send me an email.