CSY1018 AS2 – Javascript game report

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1. **Checklist of completed functionality**

|  |  |  |
| --- | --- | --- |
| Feature | Y/N | Notes |
| Bare pass (D- - D+) | | | |
| When the start button is pressed the game should begin and the start button should no  longer be visible | Y | Game starts when button is pressed |
| Spaceships get created at a random position at the top of the screen | Y | Spaceships get created at random locations |
| Bombs fall down the screen towards the player | Y | Bombs get created at random spaceships and fall |
| When the bomb hits the ground (green grass area) it explodes | ~Y | Bombs explode after a certain number of pixels travelled |
| If the player is in the radius of the bomb, print “game over” and set the players animation to  dead (css class “character dead”) | Y | If the player walks into an explosion, they lose a life, character dead class can’t play properly |
| Good pass (C- - B-) | | | |
| The bombs should explode at random points on the grass, not all at the same height | Y | Bombs explode at random points on the grass but also in the air |
| The player will have three lives signified at the top right | Y | There are three lives in the corner of the screen |
| Each time the player gets hit by a bomb the player loses a life and display the “hit”  animation (css class, e.g. “character hit left”). The life should be removed from the panel in  the top right | Y | Each time the player walks in the blast zone of the bomb, they lose a life which gets removed (animation doesn’t display properly) |
| If the player loses all three lives, display the character dead animation and print “game over”  to the screen | Y | There is a “game over” screen upon all lives lost |
| Display a “play again?” message to allow the player to restart the game if they lose | Y | Play again message exists alongside the “game over” screen |
| Very good pass (B – A-) | | | |
| Implement a scoring system with high scores. Count the number of bombs the player managed to avoid and when they die have them enter their name. When the game ends, ask their name and log the score using Local Storage. When the game ends display the high scores. | N |  |
| Make the game more difficult by randomizing the spaceships speed and frequency at which the bombs are dropped. | N |  |
| Make the bombs fall at different angles rather than straight down. | N |  |
| Excellent pass (A – A+) | | | |
| Add levels of increasing difficulty. For example, 10 slow bombs in level 1, 15 bombs in level 2, etc. Extra marks are available if there are an infinite number of levels that gradually increase in difficulty. | Y? | If after clicking “Play again?”, the ships spawn at other random points and the bombs spawn faster, does that count? |
| There is an “arrow” class and a “fire” animation for the player. Make it so the player can fire up and destroy the bombs before they hit the ground by pressing the space key. When the key is pressed   1. The player should be given the class “character stand up fire” 2. The player should not be able to move for 0.5s while the arrow is being fired 3. The arrow should fire up from the player’s position and if it hits a bomb, both the arrow and the bomb should be destroyed 4. The player should only be able to fire one arrow every 0.5s | N |  |

1. **Testing**
2. **How did you test that your code worked?**

I tested that my code worked by running the game.

1. **Could you test certain aspects of the code without running the entire game and waiting for the correct condition to be met?**

Yes, I could. And did so by either adding an event listener to the code of a certain key of the keyboard (in my case the most common being escape) or by adding a click event listener.

1. **What tests did you carry out and what were the outcomes?**

I carried out tests for every function I have written to make sure that it works, either by playing the game, or creating a way to make sure a function had the base lines of code before carrying over to the more complicated coding part/s. For example, for the health bar, I first tested that I had the correct line of thinking by raising playerHit’s value on the press of a key. I also tested the gameOver function the same way.

1. **What bugs did you discover during testing?**

Some of the bugs I discovered during testing were: the alien space ships were spawing into one another, or very close to each other(not fixed), the bombs would be extremely fast when they were falling after a while of the game being started(fixed), that I was able to clip through the “invisible wall” or the sky class by pressing up and right at the same time(not fixed), and the hit and dead character animations not being displayed properly(not fixed).

1. **Evaluation**
2. **A list of known bugs/weaknesses in the game**

* Being able to clip through the sky by pressing a combination of two keys (up + right)
* The hitboxes sometimes not working properly
* The hit and dead animations not displayed properly
* The spaceships spawning over each other
* The bombs not disappearing or stopping after the “game over” message is displayed (something which at some point worked but in the final version however, does not)
* After pressing the “Play again?” button, the bombs’ velocity picks up

1. **What works well?**

* Starting the game
* Playing
* The “game over” screen
* Replaying
* Spaceships spawning
* Bombs falling
* Bombs exploding
* Explosions disappearing

1. **What improvements could can be made?**

Improvements could be made by fixing all the bugs/weaknesses mentioned and by adding extra features as listed in the list of added functionalities and some extra (i.e., selecting the character’s appearance, a timer for the stage, moving spaceships).

1. **What else would you have done if you had more time?**

I, personally, had a lot of fun writing the code for the game and getting to test it by playing it and would have worked towards adding as much of the things mentioned in the functionality list and in point c. section 3.

1. **How easy would it be to extend the game to add more functionality?**

I think it would be a little difficult to extend the game to add more functionality, but not impossible.

1. **If you had to build a similar game in the future, what would you do differently and why?**

If I had to build a similar game in the future, I would do my best to making it better than this one; I would also allocate more time to working on it, adding more functionality and getting rid of as much bugs/weaknesses as possible.