### This example was written by...

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### **Usability**

Usability is defined

<https://www.nngroup.com/articles/usability-101-introduction-to-usability/>

<https://www.nngroup.com/articles/ten-usability-heuristics/>

1: What does usability look like in a computer program?

Usability in general usually means a quality attribute that assesses how easy the user interface is to use. It’s defined by five components which are learnability, efficiency, memorability, errors and satisfaction.

In a computer program, learnability is all about the user learning how to operate their avatar and what controls they use. This is important so the user can start to get the hang of how everything works and what they need to do.

This also ties into efficiency as after they’ve started to learn how the game works and the basics of it, then they would be ready for some challenges and can start to complete tasks with a better understanding on how to complete them.

Memorability is also important to allow users to return to the design and easily reestablish proficiency. In a computer program, it’s recommended to have a simple user interface by not having too many instructions and not too many operating keys. This will make the user familiar with what they use to control their avatar. This is important because a user wants to go back to a game, knowing how they can use it easily, or they’ll have a hard time trying to finish the game.

Errors also need to be taken into account as we need to know how many errors might the user make in the game, what the consequences of the errors are and how severe they are and how they might recover from the errors. In a computer game, when you make an error you usually either lose a life or fail to complete a level. It’s important that you make it easy for a user to recover from an error.

Satisfaction is another important factor when making a game because you want to make it look pleasant to use the design to make users satisfied. It’s important to have good level designs and to make sure users are satisfied with what they’re using.

2: Why is usability important?

Usability is a necessary condition for anything to survive. If a computer program is too difficult or to play, people stop playing and then leave. If the instructions for the game don’t help the user understand what to do, they also leave. No user would spend a lot of time trying to figure out how to use the game if the instructions don’t help. No user would also come back to a game if they find it way too difficult to play. And because there are other games to play, the users might not come back to it. So in the real world, Usability is important for the game to succeed.

3: How do I intend to make this computer program have a high degree of usability?

For learnability, I will need to provide instructions in some form, so the users will know how to control the game and what they need to do to win the game. It can kind of be considered a standard as all games have some form of instructions, so the user can learn how to operate the game.

Because I’m doing an Atari based game, I might put the instructions below where the canvas is, so it takes away the need for users to remember what to do and how. Alternatively, I might be able to figure out how to make stuff appear on screen and disappear using JavaScript, but I will need to use code from the web. For efficiency, I will try and make the levels more challenging after level 1, if I have time.

Because I’ll try and aim for three levels, I use level 1 to get the end-users used to the basics and then face some challenges for the last two levels. Because by level 1, they should’ve learned the design and how everything operates, and be ready to perform other tasks.

Memorability shouldn’t be a big issue, as you only need to use the left and right keys to move the platform in order to get the ball. But if I’m going to put in a START and PAUSE feature, I could use the SPACE bar to do this. But I’ll decide that later.

Also, I’m considering putting the instructions below the screen because It might be a bit complex to show text on the canvas screen.

For Errors, if the ball goes below the screen you lose. I will probably need to put in a three life system, to reduce the difficulty of the game and so the user can recover his progress if he loses two of his lives.

For satisfaction, I will need to make the layout of the circle bricks vary in some way, so the user gets to face a new challenge and think differently on where to aim the platform to break the bricks and to mainly feel satisfied with what they’re interfering with. Also, if they have the exact same design on all three levels, it will be too easy for players to win, will not be satisfying and be generic and will not look like a game!

I will try and test my game with other people so if my game doesn’t have much usability, I can improve on that by using the feedback given. This will also mean my game should be able to achieve high usability.

4: Have I addressed Usability in my final product (game)?

I have been able to address usability in my game. I got my instructions to appear both at the bottom of the screen and a few seconds before the game starts. People who played my game didn’t complain about the instructions not appearing for long enough and they were easy to pick up. The only feedback I got from the instructions was making them appear for longer, (which I fixed,) and by making them tell the user what the powerups/powerdowns do. But that isn’t a big issue as games like Arkanoid have powerups, but they don’t tell you what they do. I failed to make three levels in the game but I managed to make at least two. But I’m certain there are still bugs and glitches on level 2, but everyone who played the game hasn’t been able to make it to level 2 and I haven’t been able to make it to level 2 and identify the glitches, so it’s not a big deal at the moment. But it does connect to learnability as I have a challenge for people who mastered level 2 and the people who played the game didn’t need reminding on how to operate the game. So people who played the game, were able to mostly remember how everything works and the aim of the game. Also, I got past the errors section of the game as people didn’t say the game was too difficult and the three lives system managed to work with NO ERRORS and even if the person lost the game, the person can be proud of the score he/she got to. Noone who played my game said the game was “Impossible to play.” People also seemed to be satisfied with what they had on their hands and I found the level design to be pretty decent. And I had code for the level design to vary on each and every level. For example, on level 2 (which no-one has gotten to so far,) the green asteroids are still there but you also have the red asteroids on the screen. So overall, I was able to make my game a decent amount of usability. The only section of usability I didn’t achieve is compatibility as the code provided doesn’t work on Internet Explorer or Microsoft edge. But this is because some of the code used doesn’t support some browsers and is not an issue with the code. It works on Google Chrome and Firefox.