MATH INVADERS:

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Background:

Inspired by the Japanese shooting game space invaders, where the player shoots the aliens that are falling from space, we recreated it into a math version of space invaders. We incorporated math by adding a math equation and replacing the aliens with numbers which are answers to the equations.

Scenario:

Target users:

Our target users are mainly students in primary school. Students can practice math in a fun manner, developing deeper interest in mathematics. Since our game is very user friendly and easy to play, anyone who likes to challenge themselves with mathematics equations will be able to play it.

Characteristics of user:

Primary school students are at the stage of learning mental calculation, which they will be required to use during exams. Young children should also practice mental calculations so that they will not be reliant on calculators. This is also designed for people who want to improve their math so that they can carry out daily activities such as purchasing things. It also gives students the motivation to study math through an engaging medium.

What is the interesting problem that the user is facing?

There is a lack of motivation among primary school students to improve math. Moreover, teachers often only teach students using whiteboard. Instead of the traditional way of learning math through pen and paper, it will instil interest among students as they would have the desire to play the game well. Many people are reluctant to work on their mental sums as they often relay on their calculators.

Why/When would the user use your program?

The user would use the program if he/she wants to improve his/her math. In addition, students could play this game when they need a break from their studies and yet still want to do something meaningful. Teachers can encourage students to play it during study breaks as a form of math practice

What benefits would be gained from using your program?

Students would feel the joy of learning math. Furthermore, students will be able to play against their friends to compete for the highest score, this would motivate them to continue to play the game and attain enough practice. Hence, helping the students to improve on their mental calculations. Additionally, since the program is structured in such a way that there are levels, once they are proficient in a level, they can progress on to the next level to challenge themselves.

How the software is to be used?

The game is distributed to school for teaching purposes. The game can be played on Windows, Mac OS and Linux.

How the game is to be played:

Firstly, the players can shift the player icon by clicking left or right to adjust the position such that it is aligned to the answer of the question. The player can then shoot the answer and another equation will be displayed if the answer is correct if not, the player can retry the question. For each incorrect answers, 5 marks is deducted while a correct answer results in the addition of 5 marks. As time passes, the numbers will move downwards. The players will have to try to complete the questions by the time all the numbers are below the player icon if not the game ends.

The main features in the software or game that you wish to highlight:

The game would generate random math equations that will be displayed at the top of the game based on the chosen difficulty level. There is a score leader board that showcases top scores from other players which one can compete against to have their names displayed. The numbers are moving downwards allowing the players to think faster as they have limited time left.

Citations / references to the sources that you made use of when planning this software or game

References

Classicgaming.cc. (2022). *SPACE INVADERS*. Retrieved from The History of the classic archade Game Space.