ABOUT OUR PROJECT

Numerous performance issues that frequently plague large-scale software projects have been found by research to, in fact, be preventable with relative ease (Yutong Zhao et al.). Addressing these issues requires a greater emphasis on logical problem-solving skills at the primary education level. To this end, the team has developed a series of eight engaging games that distill common software inefficiencies into their most fundamental logical forms. The overarching objective of this project is to foster a deeper comprehension of algorithmic efficiency among current elementary students, thereby also laying the groundwork for the development of this concept in the next generation of STEM industry professionals.

DEVELOPMENT LIFE CYCLE

Our team employed a systematic approach that spanned three distinct stages: inception, mapping, and development. The two images to the right depict the outcomes of the first two stages for one of the games developed. In the inception stage, we created eight storyboard images that would be easily digestible. During the mapping stage, the storyboards were translated into activity diagrams, that would translate well into the development phase. The development phase, depicted by the eight images below, was broken down into three sprints, where the initial sprint was led by the more experienced Unity developers. In the following sprint, the roles were interchanged, allowing the novice developers to gain hands-on experience. Finally, in the last sprint, each developer was tasked with creating their own game, resulting in the successful development of eight unique games.

FUTURE PLANS

Our team has carried out preliminary testing with individuals within our social circle, which has informed the refinement of our product. Additionally, we have met with the Hoboken K-8 STEM director and arranged to conduct testing within various 4th and 5th grade classrooms in the upcoming months. Our product has also been designated as a teaching aid in the Exploring Career Options in Engineering and Science (ECOES) program this summer by our advisor. Lastly, we are currently in the process of planning a research paper for submission to the International Conference on Software Engineering (ICSE) in 2024.