Object-Oriented Design & Analysis Project Proposal

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Object-Oriented Game Design: Kotlin vs. Java

Our research is going to be focused around the implementation of object-oriented patterns in game design in both Kotlin and Java. Since both languages are object-oriented languages, they both support the core principles such as inheritance, polymorphism, encapsulation etc.. While Java has more of a traditional foundation for game development that uses its robust class-hierarchy system, Kotlin introduces more modern features that help streamline game development and eliminate common pitfalls. This allows for the analysis of implementation differences like coroutines, or how the quality of life and safety features Kotlin has affects a game's design in comparison to Java. Our research will aim to analyze, compare, and contrast Java's features, such as its strong typing, visibility modifiers, and traditional approach to class hierarchy, with Kotlin's modern null safety features, data classes, smart casts, and extension functions through the medium of game design.

While both Kotlin and Java are applicable to game design using object-oriented concepts, they also both offer advantages and disadvantages to those who wish to design games. Through our research, we hope to be able to highlight the differences between Kotlin and Java, and why one may choose one over the other for their specific game design. This impacts the greater computer science community as it allows us to dive deeper into a tangible example of how to utilize the different languages at our disposal. Similarly, it allows us the opportunity to reevaluate the resources of these languages and essentially "make the most" of them, by ensuring they are being used to their full capacity, especially in relation to object-oriented designs.

GitHub Repo: https://github.com/brendanmccall11/csci5448-final-project