

INTRODUCTION

The KSU Esports Minecraft Speedrun plugin transforms traditional, manually managed speedruns into an automated team-based competition event. Players are challenged to complete a set of objectives within a set time limit – promoting teamwork and strategic planning. Various modes are supported, such as weighted/unweighted speedruns, team-based speedruns, and player free-for-all. Designed for flexibility, the plugin allows for customizable settings and support for future versions of Minecraft.

METHODS

- The project began with a thorough planning phase where core gameplay mechanics, team mechanics, and objective structures were defined.
- Team members used this time to read over all documentation on the Paper and Bukkit APIs.
- Weekly meetings were conducted with the project sponsor to ensure we never deviated from their needs and requirements.
- A software design specification was created alongside a game design document which outlined all technical back-end and front-end aspects of the game mode.
- Development began, utilizing a modular, component-based design rationale to prioritize maintainability and scalability (see Fig. 1).
- Async methodology was implemented where applicable.
- Demonstrations were given to the project sponsor and all feedback was implemented.

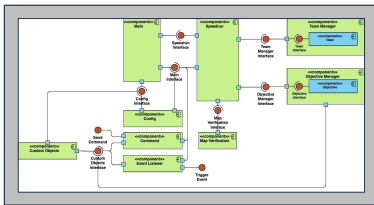


Fig. 1: UML Component Diagram outlining a high-level overview of the system's design.

RESULTS

A fully functional speedrun plugin was created that supports almost 3,000 distinct objective types, automatic event tracking, customizable teams and spawning mechanics, a world generator, and a player-centered UI design, with almost all aspects of the game being configurable in-game or in the plugin's `config.yml` file. The plugin met all performance and scalability requirements, supporting Minecraft Java Edition with minimal lag.

The KSU Esports Minecraft team is developing a Speedrun game mode for Minecraft Java Edition featuring customizable objectives, team management, user-centered interfaces, map generation and deletion, spawn management, and event tracking. With a dynamic points system for tracking team progress, team balancing for fair play, and a customizable time limit for optional added urgency, this mode offers a structured, fast-paced, and strategic player experience.



SCAN ME

For more information on the Speedrun game mode, please scan this QR code!