Fortnite Chest Collection Optimization: A Twist on the Orienteering Problem

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The Orienteering Problem is a route planning problem, where the objective is to maximize a score associated with visiting various nodes in a network. We present a multifaceted algorithm based on the Greedy Randomized Adaptive Search Procedure metaheuristic to solve this problem, applying it to a highly-popularized video game currently dominating the mainstream: \textit{Fortnite}. Solving it for \textit{Fortnite} requires solving two distinct orienteering problems, with different constraints. Furthermore, for the solutions to be useful, they must be obtained within moments of a game beginning. In computational experiments we demonstrate that our approach is an effective tool at enhancing how \textit{gamers} compete in \textit{Fortnite}.

Keywords: orienteering, route planning, graph theory, \textit{fortnite}, optimization