



Dynamic Difficulty Adjustment Systems

What is a Dynamic Difficulty Adjustment System?

A dynamic difficulty adjustment system is a game mechanic that alters the difficulty of a video game using the player as the input. For example, in *Mario Kart*, if the player falls behind the pack, the game will slow down the AI opponents to allow the player to catch up. In *Resident Evil 4*, pickups and enemy aggressiveness is tuned depending on how long the player takes to progress and how much damage they are taking.

How am I going to improve upon existing DDA systems?

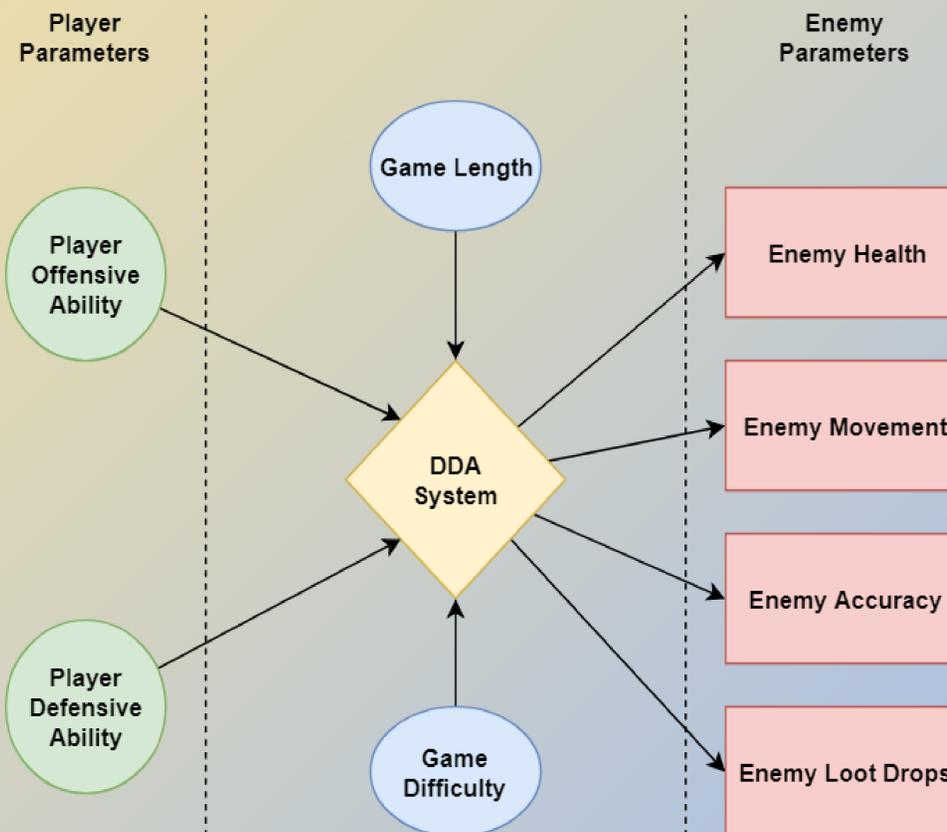
My DDA system will compile a *Player Profile* from the players ability. This profile will be built from two main index points *Player Offensive Ability* and *Player Defensive Ability* with both indexes having categories based on the game. From there the game will adjust various *Difficulty Points* correlating to the player indexes. The result will be that as a player improves their skill in one aspect, the game will make the mechanic that tests it more difficult to keep the player engaged.

How will I test this system?

To test my system I will host play test sessions for players to play a custom made game with the system *disabled* and then again with the system *enabled*. Data from both playtests will then be collated to analyse performance increases and decreases in progression across various player skill levels. A survey will be conducted among players to evaluate whether they noticed any change in game mechanics to see if the system remained undetected.

What is the problem with current systems?

The major issue with current DDA systems is they have too much of an impact on the game difficulty and thus become *obvious* to the player. This promotes the player to either cheat the system for an easier victory or feel *unsatisfied* when they do beat the system when they realise they had significant assistance.



How can this system be used?

If effective, this system can be used to increase player *satisfaction* in games and provide a more tailored experience for players. It could also have uses making games more *enjoyable* for players with mental or physical handicaps by making certain aspects of the game more suited for them whilst retaining the core of the game.

