**Element of Randomness**

Randomness is the element of unpredictability and the umbrella term used for ‘chance’ and ‘probability’. Given a set of parameters however and people can make clearer guesses as to what the result would be for a given event, the lesser the options, the fewer errors people will make with their judgement.

In games, more geared towards adventure and fantasy, attacking an enemy will apply some damage to them. The damage is calculated by using a queer formula that can vary immensely depending on the player’s action. Very often though that the result of damage will vary even if the same player action is used over and over. A set of parameters can multiply the effect of what would be a static damage value to an array of values i.e. 0.85 >= x <= 1.15 as a multiplier which, more simplified, means that the original value could be weaker or stronger if x isn’t equal to one. Within these set of parameters there 31 values to choose from (up to 2 decimal places) which is considered a large gap and results in a small probability per value.

This can be further enhanced by ‘Critical Hits’ a popular occurring mechanic in many role-playing adventure games. As people develop their character throughout the game, some people will opt for increasing their chance to critically damage an enemy. This ‘Critical Hit’ result is usually pre-defined before a player’s action from an array of nodes. Some of these nodes are highlighted as *ApplyCritical* where the rest will not. Depending on how many points in this statistic people invest in, the higher the chance of the random node selected will have the *ApplyCritical* tag assigned.

There are other types of random elements also used in games, to name a few:

* Wind Speed – This is used in trajectory-shooters to apply a random factor of velocity and resistance to shots. When the wind speed is 0, projectiles will have normal forces applied.
* Roll-of-the-Dice – A prime example to explain this is in the Mario Kart series when a character picks up an item along the course. The game will rotate through all the types of items available but if a character is in last place, they have greater chances of getting stronger power-ups to climb up a few positions.
* Instantiation – Certain entities can spawn or respawn within a specified set of co-ordinates. Non-playable entities can also have random pathing assigned so that they wander around seemingly aimlessly.