



Concept Melee System

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Version 1.0

Table of Contents

1	Introduction	3
1.1	Version History	3
1.2	Example Character	3
2	Melee Modes	4
3	Pre-Battle	5
3.1	Introductory attack	5
3.2	Collision Actions	5
3.2.1	Left Mouse Button	5
3.2.2	Right Mouse Button	5
3.3	Player Attributes on Collision Action effects.....	5
3.3.1	Strength	5
3.3.2	Speed.....	5
3.3.3	KI	6
3.4	Opponent States	6
3.4.1	Opponent Facing Attacker	6
3.4.1.1	While Idle	6
3.4.1.2	While blocking	6
3.4.1.3	Opponent not facing attacker.....	6
3.4.1.4	Both sprint-flying towards each other	6
4	Mode Change	8
5	In-battle	9
5.1	Camera Considerations	9
5.2	Controls.....	9
5.3	Melee Attacking and combinations	9
5.4	Other attacks.....	9
5.4.1	Implementation	9
5.4.2	Control	9
5.5	HUD	10
5.5.1	Timer	10
5.5.2	Concentrated KI (C-KI) Meter	10
6	End Battle.....	11
6.1	Killed opponent.....	11
6.2	Out of time	11
6.3	Fly out.....	11
7	Considerations and element changes	12

1 Introduction

The attributes system is one of the most important systems in a game. For this game, the attributes system governs what's do-able, and what's not for specific characters. This document will also cover in detail functions that govern its use on specific attributes, which is nearly all playable functions in the game.

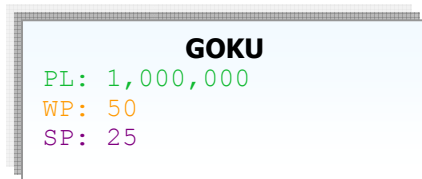
We will start of with the fundamental attributes, then move onto derived attributes and then to player functions, their use, and their effect.

1.1 Version History

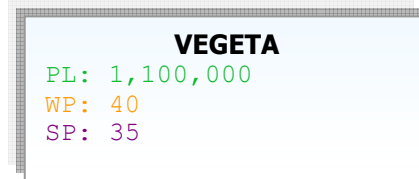
Version 1.0 Initial Release

1.2 Example Character

For this document 2 example characters will be used:



GOKU
PL: 1,000,000
WP: 50
SP: 25



VEGETA
PL: 1,100,000
WP: 40
SP: 35

2 Melee Modes

Melee Modes are situations the player is in when attempting to melee. Some modes follow after another mode, where some may be skipped in some circumstances.

3 Pre-Battle

The player selects melee mode. Opponents closest to the player or have the crosshair pointed to them will have a box on them, such as a lock-on mechanism to be easily targeted. The player then holds down one of the mouse buttons (differences will be covered later on) to sprint fly towards the opponent, homing into every move they make. Once a collision has been made, an introductory attack will commence.

3.1 Introductory attack

An introductory attack is an attack lasting a few seconds which the attacker executes to the defender. The type of attack is called the collision action, which depends on the button pressed when meleeing.

3.2 Collision Actions

3.2.1 Left Mouse Button

Left Mouse Button is the punch action. Punching actions are fast and come in volume and hard to dodge. The cons of punching actions are that they do relatively small damage.

Punching moves may vary from a flurry of jabs to a series of hooks and jabs. The moves are randomly chosen depending on the state of the player and opponent.

3.2.2 Right Mouse Button

Right Mouse Button is the kick action. Kicking actions are slow but deal a lot of damage. Kicking actions are great to stun the player to give yourself an upper hand in the few seconds of In-Battle Mode.

Collision actions damage depend on the type of action, as well as the stats of the player and opponent.

e.g. An opponent with high speed attribute will excel in dodging kick actions, so the other opponent should pull off punching actions to deal more damage.

3.3 Player Attributes on Collision Action effects

As stated above, the amount of damage or duration depends on the player's attributes. The more amount of a specified Governing attribute or derived attribute will provide more benefit for the attack

3.3.1 Strength

Strength governs how much damage each attack deals to an opponent. The higher this stat the more damage is dealt

3.3.2 Speed

Speed governs how fast each attack will last.

3.3.3 KI

This governs the length of the introductory attack. An attacker with a full active KI pool will perform a longer introductory attack than one say with half active KI pool. An attacker will be able to initiate 1 second duration of introductory attack with an additional 2 seconds depending on amount of active KI

$$1 + 2 * (\text{Current Active KI} / \text{Total Active KI})$$

3.4 Opponent States

Opponent states are the position and state of the opponent which will affect how well the attacker does his introductory attack.

3.4.1 Opponent Facing Attacker

3.4.1.1 While Idle

This state will give no benefit to attacker or defender

3.4.1.2 While blocking

Attacker gets a detriment through weakened attacks

3.4.1.3 Opponent not facing attacker

Even if idle or blocking will give attacker benefit through increased damage of all introductory attacks

3.4.1.4 Both sprint-flying towards each other

This is where both players are now opponents, not attacker nor defender as it is unknown. During this state on collision, a multitude of calculations will occur, to see who will come out on top.

$$(\text{PL} / 1,000,000) + (1 \text{ if punch or } 0 \text{ if kick}) + (\text{SP} / 100) + \text{RAND}() * 3)$$

This function determines a value in which higher values benefit. The opponent with the highest point value will be able to execute the introductory attack. But this will only occur when the difference of the point values is less than 1.5. If it isn't, then a head on collision will occur and separate; no introductory attack will commence.

Example:

Goku's point value is (while doing punch action):

$$(1,000,000 / 1,000,000) + (1) + (25 / 100) + (0.678 * 3) = 4.284$$

Vegeta's point value is (while doing kick action):

$$(1,100,000 / 1,000,000) + (0) + (35 / 100) + (0.576 * 3) = 3.178$$

The difference is 1.1, so a head-on collision will occur, and no introductory attack will occur.

4 Mode Change

At the time of push-back, the camera will change to side view, similar to that of Budokai 2, but without the 3d control. The players will only be able to move left or right. Up and down buttons will now be Jump & Crouch respectively to simplify controls.

If the player has entered the melee through an advantageous introductory attack, the player will be on the left of the screen. If the melee was entered through head on, the player with the highest point value will be on the left.

For the sake of simplifying the melee system, players will be always flying, never touching the ground but walking on an invisible plane. Players will also not be able to stop flying and hit the ground. For later versions ground detection will be available, so players automatically drop to the ground if close to it, start flying at will etc.

5 In-battle

5.1 Camera Considerations

To provide a clear picture on the camera and controls, think of the SNES game DBZ Hyper Dimension. There is a fixed width distance which players cannot extend. The camera will stay in a fixed position so players moving close will not zoom the camera up.

5.2 Controls

Without the use of the mouse in melee mode, players will use their normal movement keys (default WASD) and a set of 4 attack keys for melee (default set to 78, and 45 on the numpad). These attack keys denote low-punch, high-punch, low-kick, and high kick. This will allow a high range of attack variety. In spite of this a simpler model can be applied using the mouse left and right click for punch and kick respectively.

5.3 Melee Attacking and combinations

Using the attack keys by themselves will trigger simple attacks but holding a combination of movement keys and attack keys will trigger stronger and faster movements which can be chained.

For example, using the keys DOWN-LEFT + HIGHKICK will perform a roundhouse kick.

5.4 Other attacks

5.4.1 Implementation

There are 2 ways we can implement other attacks, i.e. KI based attacks. Firstly we can reuse the binded attack keys (numbers 2-9) relative to the player to perform that attack.

For example, a Goku player can hold number 3 to charge this kamehameha and release.

Another way is to set Ki attacks to a specific set of key combinations

For example, a Goku player presses the keys (while on left position), DOWN-LEFT-RIGHT + PUNCH (holding punch to charge) to unleash KHH.

5.4.2 Control

For beam attacks, most will have a certain degree of homing ability. The strength of the homing ability will depend on the beam strength. The stronger a beam is, the weaker the homing ability is. So basically controllable beams in 3rd person will be uncontrollable in melee mode, but will have some sort of homing ability to compensate. Ki attacks which are not a beam form will follow a line of the last opponent's position.

5.5 HUD

The HUD will stay relatively similar to the 3rd person HUD, keeping all the elements. An addition to this 2 elements will be added.

5.5.1 Timer

The timer is a simple timer that starts at 60 and counts down the time to signal a melee break. Melee battles can only last a maximum of 60 seconds. This element will possibly be laid out in the top center of the screen.

5.5.2 Concentrated KI (C-KI) Meter

The Concentrated KI meter is a unique feature introduced into fighting games. You build up points through exerting damage to an opponent. This C-KI when full can be used as an activator for a unique super attack.

Filling C-KI is as easy as hurting your opponent. You gain C-KI as much as you exert. When you get hurt, it does not destroy all your C-KI built up, but decreases it. You lose more C-KI than you gain, comparing hit-to-hit, so chaining attacks is vital for obtaining a full C-KI meter.

You can only use C-KI once the meter is full. Once you have filled the meter, gaining any more C-KI does not benefit you. Activating your C-KI is as easy as pressing your "use" key.

6 End Battle

A melee battle can end in a variety of ways:

6.1 *Killed opponent*

Before the last killer attack, both players will be slowed to show the final attack then both players will revert back to 3rd person camera. The winning player will resume its position while the losing player will see their character fall.

6.2 *Out of time*

Once the timer hits zero both players will jump back and break out of the melee battle. The camera will revert back to 3rd person.

6.3 *Fly out*

The player can sprint fly out of a melee fight using sprint fly and the directional key away from the opposing player. The camera will revert back to 3rd person

7 Considerations and element changes

- Once 2 players have entered melee mode, other players cannot enter nor deal damage to the 2.
- KI attacks will be faster to charge and move offset by lower damage