

Fighting System

V.1.8

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Short description of document

This document explains in detail the fighting system that I have created. It contains the mechanics, the characters and the game flow. Each attack and character have their own stats which can be used in a formula to calculate the damage. Every attack has one stat which they work with better, thus giving the future possibility of having players needing to strategically choose their characters or attacks.

More about the project

I am not aiming to create a full game at least for now. I'm only making a simulation environment in which I can test these. The enemies won't have any other functionality other than being test dummies. The project is a 3D Unity 1st person simulation.

Energy System

The system functions alongside an energy system. While there is a cooldown preventing players from spamming attacks, each attack also costs some energy. The energy gets refilled over time.

Formula

$$\text{damageDealt} = \text{defaultDamage} * (\text{strengthMultiplier} * \text{strength} + \text{manaMultiplier} * \text{mana} + \text{agilityMultiplier} * \text{agility} + \text{dexterityMultiplier} * \text{dexterity}) * \text{randomModifier}(1.1 \text{ to } 1.5) - (\text{enemyDefense} * 10 / \text{defenseMultiplier} + 1)$$

The default damage is scaled with the multipliers each attack has and the character stats. The random multiplier then gets added and afterwards the enemy gets its defense applied.

Random Modifier

To make the damage dealt more varied I decided to use a random multiplier in the formula.

Attack Types per Player Range

1. Melee (3 distance)
2. Ranged (10 distance)

Attack Types per enemies affected

1. Closest and the one player's looking at
2. Enemies next to explosive

Fighting Mechanics:

1. Punch

Main stat: Strength

Short Description: The player can punch its opponents dealing little damage.

Type: melee

Who takes damage?: Enemy, players is looking at if close enough

Default Damage: 10

Energy Required: 10

Stats:

	Strength	Defense	Mana	Agility	Dexterity
Multiplier based on character stats	7.5	0.5	0.5	1	0.5

Visuals: The player should see the fist of his character moving and slightly light up when hitting the target.

2. Sword attack

Main stat: Strength, Dexterity and Agility

Short Description:

The player uses a sword to hit its opponents. This attack is mostly built on Strength.

If surrounded by multiple enemies the attack damages only one of them.

Type: melee

Who takes damage?: Enemy, player is looking at if close enough

Default Damage: 40

Energy Required: 20

Stats:

	Strength	Defense	Mana	Agility	Dexterity
Multiplier based on character stats	6	1	0	2	1

Visuals: The player should see the weapon hit the enemy doing a motion fitting to the chosen weapon (slashing for a sword)

3. Magic Projectile

Main stat: Mana

Short Description:

The player shots a magic ball that hits the closest opponent, player is looking at. This attack is mostly built on Mana.

If surrounded by multiple enemies the magic ball only damages one of them. The player can take their eyes off their opponent and if they have already shot a projectile it will still do damage.

Type: ranged

Who takes damage?: Enemy closest to player and that player is looking at

Default Damage: 50

Energy Required: 30

Stats:

	Strength	Defense	Mana	Agility	Dexterity
Multiplier based on character stats	0.3	0	9	0.2	0.5

Visuals: The player can see the magic ball flying towards an enemy. Additionally some sparkling effects could be added.

4. Magic Explosive

Main stat: Mana, Dexterity

Short Description:

The player throws an exploding ball in its vicinity. The ball takes a second till it explodes dealing damage anyone nearby.

Multiple enemies can be damaged.

Type: ranged (in the limits of the players throw)

Who takes damage?: Enemies near explosive

Default Damage: 100

Energy Required: 50

Stats:

	Strength	Defense	Mana	Agility	Dexterity
Multiplier based on character stats	0	0	9	0.5	0.5

Visuals: The player should see himself throwing a ball with maybe some magical effects on the ground, which then explodes.

5. Triple Arrow

Main stat: Dexterity

Short Description:

The player shoots 3 arrows in a chosen direction. The player doesn't need to be looking at an enemy.

Type: ranged (in the limits of the players throw)

Who takes damage?: Enemies hit by projectiles

Energy Required: 20

Default Damage: 60

	Strength	Defense	Mana	Agility	Dexterity
Multiplier based on character stats	0	0.5	0.5	1	8

Visuals: The player shoots 3 arrows while holding a crossbow or bow.

Characters

Stats can be from 1 to 10

1. Dude

Stats:

Strength	Defense	Mana	Agility	Dexterity
5	4	1	3	1

2. Wizard

Stats:

Strength	Defense	Mana	Agility	Dexterity
2	3	7	2	3

3. Tank

Stats:

Strength	Defense	Mana	Agility	Dexterity
4	8	0	0	1

Game Flow:

- Select Character based on stats
- Play around with the 5 attacks (the enemies do not attack you at the moment)