

# **Attack on Titan: Utopia**

## Game Design Document

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This document provides a detailed description of the game elements and gameplay. It does not contain any implementation or coding details.

# Outline

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# Intro

**Attack on Titan: Utopia** is a one-player, endless <sub>2</sub>, tower defense game <sub>1</sub> inspired by the hit anime **Attack on Titan**. The story of the anime revolves around how titans, gigantic humanoid creatures, emerged one day and wiped out most of humanity. The few surviving humans fled and hid behind 3 great walls that provided safe haven from the titan threats. Wall Maria is the outer wall, Wall Rose is the middle wall and Wall Sina is the inside wall.

This game takes place in an imaginary scenario where the titans breached their way throughout Wall Maria and reached the northern border of Wall Rose at the Utopia District. The human forces stationed in Utopia engage the titans in battle for one last hope of preventing the titans from breaching Wall Rose. The humans fight by deploying different types of Anti-Titan weapons in order to stop the Titan's onslaught and keep Utopia's (and Wall Rose's) walls safe.

<sub>1</sub> **Tower Defense Games:** is a type of game where the player controls a base and the objective is to continue defending this base from incoming enemies by deploying some weapons/tools to get rid of these enemies. In our case the base we need to protect is the Utopia District Walls.

<sub>2</sub> **Endless:** it means that the game will have no winning condition and the player will keep playing and defeat as many enemies as possible.

# Space (Battle) Setting

The battlefield is divided into multiple lanes, each lane will have the following:

1. A part of **the wall** to be defended. This wall part will have a starting HP (health points) that decreases after being attacked and if this part of the wall is destroyed, this lane will no longer be considered an active lane and will be a lost lane.
2. **The weapons** that the player has already deployed into this lane.
3. **The titans** that are on their way to attack the part of the wall at the end of the lane. The titans can be at different distances from the walls depending on how much they have already moved. Each titan will have a starting HP (health points) that decreases after being attacked.

Each lane will have a **danger level** that can be calculated based on the number and types of titans inside this lane.

In the player's base, the player will have the option to see all the available types of weapons and can **choose** to buy and deploy them into their choice of an active lane. The player should be able to view the currently gathered **resources** and acquired **score** as well as the remaining **HPs** of all walls and titans as well as each titan's **distance** from the wall. The player can also see the **approaching titans** in order, these approaching titans will be added to the lanes in the upcoming turns.

The Battle has 3 **phases** depending on the **number of turns** that already passed: Early, Intense, Grumbling.

# Enemy Characters (Titans)

There are multiple types of titans in this game. However, all the titans will have some attributes in common. Each titan will have the following stats:

1. **HP:** The health points of the titan.
2. **Damage:** The amount of damage the titan does when attacking a wall.
3. **Height:** The height of the titan in meters, doesn't affect the gameplay.
4. **Distance from walls:** How far the titan is from the walls in "Distance Unit"<sub>3</sub>.
5. **Speed:** The distance that the titan moves per turn in "Distance Unit".
6. **Resources value:** The amount of resources that the player gains by defeating this titan
7. **Danger level:** How much this titan affects a lane's danger level.

<sub>3</sub> "Distance Unit" : A special distance unit used for the sake of this game (does not necessarily translate to any realistic distance unit)

The different types of titans will have a different set of starting stats according to their type.

Type	HP	Damage	Height	Speed	Resources Value	Danger Level
Pure Titan	100	15	15	10	10	1
Abnormal Titan	100	20	10	15	15	2
Armored Titan	200	85	15	10	30	3
Colossal Titan	1000	100	60	5	60	4

In Addition, some of the titan types have special traits that affect how they behave during the battle.

Type	Special Trait
Abnormal Titan	Performs the attack action twice per turn instead of once
Armored Titan	Takes only 25% of the intended damage
Colossal Titan	After every movement, Increases its speed stat by 1 "Distance Unit".

# Friendly Pieces (Weapons)

There are multiple types of weapons in this game. However, all the weapons will have some attributes in common. Each weapon will have the following stats:

1. **Damage:** The amount of damage the weapon does when attacking a Titan.
2. **Price:** The amount of resources needed to purchase and deploy a weapon of this type.

A specific type of weapons, called the "Volley Spread Cannon" will have a couple of extra stats:

1. **Min Range:** The minimum range of the weapon from the wall in "Distance Unit".
2. **Max Range:** The maximum range of the weapon from the wall in "Distance Unit".

The different types of weapons will have a different set of starting stats according to their type.

Weapon Type	Price	Damage	Weapon Name	Min Range	Max Range
Piercing Cannon	25	10	Anti-Titan Shell	-	-
Sniper Cannon	25	35	Long Range Spear	-	-
Volley Spread Cannon	100	5	Wall Spread Cannon	20	50
Wall Trap	75	100	Proximity Trap	-	-

All the weapons type behave uniquely while performing their attack actions.

Weapon Type	Attack Action (per turn)
Piercing Cannon	Attacks the closest 5 titans to the wall on the weapon's lane.
Sniper Cannon	Attacks the first closest titan to the wall on the weapon's lane.
Volley Spread Cannon	Attack all the titans in between the weapon's min and max ranges on the weapon's lane.
Wall Trap	Attacks only one titan that has already reached the walls (if more than one have already reached only the first one is attacked)



# Game Rules

**Winning and losing Conditions:** The game will have **no winning** condition and the player will keep playing and defeat as many enemies as possible. The player **loses** when all the starting lanes become **lost lanes** (All their Wall Parts are destroyed) and the accumulated score by then is the player's final score.

**Titan Movement:** Each turn, every titan inside all of the active lanes that has not reached the walls yet will move closer to the wall (The distance from the wall will decrease) a distance equal to their speed stat. Note that Colossal titans gain an extra speed of 1 "Distance Unit" per movement action.

**Attack Actions:** Both Titans and Weapons are able to perform attack actions:

1- **Titans:** Each turn, only titans inside active lanes that have already reached the wall (distance from wall is 0) will perform their **attack** action on the wall part of their lane (reducing the Wall Part's HP by the amount of that Titan's damage). Note that Abnormal Titans perform their attack actions twice per turn.

2- **Weapons:** Each turn, only weapons that are deployed into active lanes will perform their **attack** action on the titans their lane (reducing the Titans' HP by the amount of that Weapon's damage). Each weapon will follow the above weapons table on which titans to attack.

**Defeated Attack Targets:** Since Titans and Wall Parts can be attacked, they can be defeated/destroyed. This happens when the attack target's HP is dropped to 0 or below as a result of an attack. Defeated Titans are removed from the lanes they were in (and the game) and their resources

value is added to the player's gathered resources as well as the player's score (score increases with the same value as the gathered resources). If a Wall Part is destroyed, the lane with this Wall Part is then marked as a **Lost Lane** and not an active Lane. Lost Lanes can not have weapons deployed to them nor will have any more Titans spawning in them.

**Approaching Titans:** This is a queue of titans that are not yet added to any lane. However, it is used to decide which Titan types will be added to the active lanes each turn. Whenever it is time to add a new Titan to an active lane, the titan at the front of this **approaching titans** queue is removed and then added to the intended lane. If the queue is empty while attempting to remove a titan, then the queue is refilled with **multiple** titans according to the below table.

**Titans Spawning & Battle Phase change:** Each turn, A specific **number** of titans (Initially 1) is removed from the **Approaching Titans** and added to the lane with the least danger level. A Lane's danger level is the sum of all the titans' danger levels inside this lane. If, while attempting to get an approaching titan, all of the approaching titans have been added into lanes (Empty queue), the approaching titans will refill according to the following table (If the battle phases has changed while some approaching titans still remain, the approaching titans will not refill till all of them are added to lanes and then refilled according to the battle phase at the moment of refill). The table also shows how the battle phase and the number of titans to be added into the lanes change based on the elapsed number of turns.

turns	Battle Phase	#Titans Per Turn	Approaching Titans Refill (Front —> Back)
initial	EARLY	1	Pure, Pure, Pure, Abnormal, Pure, Armored, Colossal
15	INTENSE	1	Abnormal, Abnormal, Abnormal, Pure, Armored, Armored, Colossal
30	GRUMBLING	1	Colossal, Colossal, Colossal, Colossal, Colossal, Colossal, Colossal,
35		2 (then doubles every 5 turns)	

**Weapon Purchase:** The player will have the option to see all the available types of weapons and can **choose** to buy and deploy them into their choice of an active lane. To purchase a weapon, the player should have enough resources (higher than the weapon's price) and then the weapon's price is deducted from the gathered resources.

**Turn Actions:** Each turn the player can choose to either **Purchase and Deploy** a Weapon or **pass** their turn without any actions. Either way the turn will proceed as follows. After the player's action, The titans will do their move action. Then the weapons will do their attack action followed by the titans' attack actions. After that, Titans will be added to the lanes according to the logic mentioned above. Finally, **finalizing the turn** by updating the battle phase and the relevant info if needed based on the number of elapsed turns, also according to the logic mentioned above.

# Game Flow

