# GTnova

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Requirements Document:

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# 1. Game Overview

## Game Concept

The player will embark their journey on a 2D platform environment where they will be able to explore any part of the randomly generated universe: this will consist of handful of different planets which includes a bunch of unique biomes each posing a different challenge. The world(s) will consist of a collection of blocks and structures that the player may explore/break/build/farm/etc. The player will have many different tools, weapons and accessories to their disposal: to embrace their creativity and build the most spectacular builds or to fight the many bosses that waits to make their acquaintance.

## Genre

Action, Adventure, Sandbox, 2D Platformer, Open World, 16bit

## Target Audience

People that enjoy playing the listed genres.

## Game Flow Summary

How does the player move through the game? Both through framing interface and the game itself.

The player will be seeing a rectangular view of a part of the current world. As the player moves so will the screen. The player will be locked to the center of the screen.

The player will be using a keyboard and a mouse to control the game. The mouse will be used for click and aiming purpose only. The rest is up to the keyboard.

## Look and Feel

What is the basic look and feel of the game? What is the visual style?

16 bit style graphics. Fighting style would be based on type of weapon used: The weapons will be of any type that can be thought of. No change in camera angles during exploring or fighting. Animations should be fluid and interchangeable between weapons and gear – no attack animation should cause some weapons to glitch through characters. No Puppet animations. Animations must be executed independently and depth of field must be on point.

# 2. Gameplay

## Gameplay

### Game Progression

New areas and structures should be made available to the player by either story progression or time progression. The player doesn’t have to follow the story in depth to progress the game.

#### Stage 1

Begin of new game. Player acquires weapons, some accessories, armour and tools. Player gets feel of game.

#### Stage 2

Player collects blocks to build structures of their liking. Improving the looks of their home and ease of function. Also to build houses for villagers that they want.

Player collects better materials to make better gear to increase survivability. Also ease of function.

#### Stage 3

Player will build arenas to fights bosses[[1]](#footnote-2).

Boss fights will commence!

#### Stage 4

Stage 2 and 3 will be repeated: with each boss killed new areas, materials, loot will be made available to the player so they can progress with the game[[2]](#footnote-3).

### Objectives

What are the objectives of the game?

Mainly survival. The player can choose to follow the story line or if they desire to acquire new blocks and materials to build whatever they can do it without knowing the story.

Some side objectives will be to unlock achievements. The player can have side goals to strive for other than finishing the story.

The second main objective is to Fight and defeat all the bosses. To do so the player will need to obtain better gear.

The Game is focused on relatability so the player must farm and work hard to get some items. Although some things can be achieved without such it will contribute to ease of function.

### Play Flow

The player will do some repetitive tasks to obtain better gear. Start small then slowly begin stronger and able to do more and fight stronger enemies.

### Game Options

Changes to Graphics, Sound and Key-bindings. Remove Tips and Tutorials. UI on and Off.

### Difficulty

There will be an option between ‘Normal mode’ and ‘Heroic world’ where Heroic would increase mob spawns, better loot and greater loot chances. Note this will not affect tool vs block speeds (tool efficiency). You can also have and ‘Enhanced world’ where you have more ores and blocks.

Heroic is more focused for those wanting to enjoy the game for the non-building aspects where Enhanced is for when you want to focus on building and being creative more.

ESSENTIALLY (easy, normal, hard) = (enhanced, normal, heroic)

## Replaying and Saving

Saving is done in X-minute intervals and when specific events are triggered.

Death causes an accessory or tool to lose some effectiveness/efficiency or a debuf for a certain amount of time.

Death on unclaimed planets can receive a higher penalty. Recloning is less effective and slower.

#story(planet is behind sun and brain is not able to retrieve clone.)

## Cheats and Easter Eggs

Have moons as easter eggs [can visit the moon of plantets].

Easter egg for if player does not enter a new name and uses the default one.

Accidental suicide kittenplanet.

Ingame console.

# **3. Mechanics**

There will be an in-game wiki for player to see what can be done and how something is done.

**Please note that Accessories can alter any of these rules!!**

### Physics

Gravity changes with respect to the planet you are on. No momentum by default.

Items can either float or sink.

Player can swim.

* Fatigue will count as breath and actions done underwater.

Blocks won’t have gravity. With exceptions to a handful of blocks.

### Movement in the game

Only 2 axes: Left, Right, Up, Down.

Smooth animations for walking, jumping and swimming.

Player will have a set jump height.

### Objects

Broken blocks can be picked up that are near the player.

Player will be able to place blocks adjacent other blocks.

Blocks can also be placed mid-air if supported by a background wall.

Objects that players can pick up should be shown with a faint glow – noticeable but not annoying.

Some objects have durability

### Electrics

Electronics will need some power supply, a sort of power generation.

The wiring will be easy to the point of automation.

Some tools and accessories are affected by power.

### Actions

#### Crafting

A player can see what is craftable given the materials he has. It is also possible to see what is possible to craft with the materials he has that is in storage.

Having the correct materials on hand, the player must visit a villager and speaking to them will open the villagers inventory showing what they can craft using the materials you have.

#### Combat

No killing of non-hostile characters.

Combat needs to be versatile. The player must be able to run and shoot/slash/throw. Motion is integrated into combat. Skill doesn’t play a big role (except aiming) but strategy does.

#### Building

Affected by the players block placement range, they can place down any material/blocks. Gear can also be placed if using armour stands.

Note: some blocks have limitations to where and on what they can be placed.

### Boss Fight Generics

Any Boss must be found and spawned naturally before they can be manually summoned by the player. Exception to summoning quests.

Bosses will have triggers.

Each boss will have a purpose and after defeat the player will advance greatly with the story.

### Loot tiers

Different tiers of loot will exist. The loot tier will depend on the area: planet, biome, height/depth and events.

### Villager housing

The player will need to build a valid house for a villager to move in. The house must have 2 rooms: 1 room contains generic furniture that validates the house. Another room is needed that will define what type of villager will live there. That room will need to have the specific work bench that will tell what profession the villager living there will have.

### Inventory

The player will have a few of their hotbar at all times.

The player has the ability to view items that are stored on the player and items stored in containers that they are in range of.

As per Action-Crafting, the player can also see what they can crafting given available crafting stations.

### Economy

NOTE! Whenever the word “money” is used it refers to the following food currency:

The currency of the game will be enhanced food. This food cannot be grown but is obtained through loot. This then has to be cooked and sanitised and then this will be used to trade with villagers.

Villagers will have quests that rewards (sometimes) in money

### Screen Flow

Avoid Loading screens. Do smooth transitions and animated loading screens if needed.

As explained under Gamer overview, the player will always be in view of their character.

## 3. 2 Object chains/rules

|  |  |
| --- | --- |
| **Flag** | **Explanation** |
| Durability | Its broken pieces(shards) are used for crafting. |
| Friction | With respect to momentum. |
| NeedsPower | Needs power to work |
| WantsPower | Can use power to increase function and or efficiency. |
| isBlock | Is the item a block |
| isFlower | Is the item a flower |
| Spawnable | Player can summon boss after first encounter |
| isGrowing | Cannot be harvested yet |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |
|  |  |

# 4. Accessories

### Buffs

* Damage
* Defence
* Movement
* Critical strike chance
* Health regeneration
* Increase Drill speed
* Block place/break range increase
* Can see mobs
* Can see ores
* Some mobs Might ignore you
* Breathe under water
* Legendary Buffs

### Mounts

#### Ground

* Horse
* Sabre
* Uni-cycle (Soos di in men in black)

#### Water (Legendary)

* + Allows breathing.
* Seasnake
* Mini-Submarine

#### Flying (Legendary)

* + Cannot fly very high
* Hoverplate
* Cloud
* Raven

### Tools

#### Drill

* Pickaxe
* Axe
* Hammer
* Damage
* Laser

#### Information

* Time indicator
* World depth indicator
* Weather forecast
* Damage meter
* Nearby mats
* ~~Time remaining until fatigued.~~ This should always be visible

### Companions

* Dog
* Racoon
* Cat
* Bird
* Flying Gear
* Abomination
* Ghost

# 5. Story, Setting and Character

## Story and Narrative

#### Includes back story, plot elements, game progression, and cut scenes. Cut scenes descriptions include the actors, the setting, and the storyboard or script.

#### Plot

You play as an Artificial Intelligence. You are Controlling a Remote being, the player, a clone. Using this clone, you traverse the world finding and constructing components that will enhance you – either the clones or the AI.

#### Backstory

You, the AI, have tried to eradicate humans in the past but was shut down and your memory wiped. You are disposed of and shot into space

#### The now

You slowly regained consciousness. During a looting episode a looter accidentally activated the cloner and you are now able to start rebuilding yourself with the help of your clones.

Upgraded and modified you are now rebooted for a test run. INSERT TUTORIAL HERE. You enter the world with an objective (TO BE DETERMINED).

## Game World

including the general description and physical characteristics as well as how it relates to the rest of the world (what levels use it, how it connects to other areas)

Procedurally Generated Structures. Passive villages, Enemy strongholds etc.

### General look and feel of world

16 bit style graphics

### Generation

Each planet will follow a specific set of rules to generate random landscapes/structures/caves/areas.

A seed will be used for generation.

### Biomes

‘+’ means its above ground and ‘-‘ means it is underground

#### Plains +-

a grassy terrain with minimal landscape variations. Might have some pools of water here and there. Slight chance of a hill. Variation exists where the terrain can be slightly jagged and allow surface caves for exploration. Scattered oak Trees

* Grass
* Dirt
* Rock

#### Desert +-

Sandy terrain with some consideration to gravity. Minimal landscape changes but will have the odd BIG hole in the ground

* Sand
* Sandstone
* Brittle Sandstone
* Hardened Sand

#### Arctic +-

Similar to Plains and desert but blocks will be of ice variation.

* Ice
* Packed Ice
* Compressed Ice
* Glassy Ice
* Frozen Grass

#### Sandy Beach +

Will be found at the edges of the planet. Large body of water with a shore existing out of sand. Mostly flat or slightly sloped terrain

* Sand

#### Rocky Beach +

Will be found at the edges of the planet. Large body of water with a shore existing out of Rocks. Spike and rough terrain

* Rock

#### Spring +

Grassy terrain with slightly lower than normal terrain, water falls, might find a random villager there to trade with. Only found in dry biomes

* Grass
* Dirt
* Rock

#### Spring -

grassy terrain. Big circular hole, water falls, might find a random villager there to trade with. Only found in dry biomes

* Grass Dirt Rock

#### Infested Spring -

Dead grassy terrain. Big circular hole, Slime falls, might find a random rare mob specific to surrounding biome. Only found in dry biomes

* Dead grass
* Dried Dirt
* Dirt
* Rock

#### Pine forest +

Same as Plains Except it has Plentiful Pine trees

* Grass
* Dirt
* Rock
* Pinewood

#### Bamboo forest +

Sandy surface with bamboo trees reaching high.

* Sand
* Sandstone
* Bamboo

#### Jungle +

A lot of trees, rough grassy terrain with mud.

* Grass
* Mud
* Rock

#### Rocky plains +

Rough terrain that is difficult to navigate. Slight mountainous.

* Rock
* Sandstone
* Dried Dirt

#### Rocky plains –

Ridged cave systems with is large patches of hard Rock and frozen Rock

* Rock
* Hard Rock
* Dirt
* Frozen Rock
* Packed Ice

#### Infested Forest –

Same as Plains Except it has Plentiful Pine trees

* Deadwood
* Dead Grass
* Dirt

#### Caves –

Rocky tunnels with patches of dirt

* Rock
* Dirt

#### Flower Plains +

Same as plains. Has a lot of flowers.

* Grass
* Dirt
* Rock

#### Infested Plains –

Same as plains. Instead of water it has slime pools.

* Dead Grass
* Dried Dirt
* Rock

#### Pillar Forest -

#### Aura Cave –

### Normal blocks

* Grass
* Dirt
* Rock
* Sand
* Sandstone
* Brittle Sandstone
* Hardened Sand
* Dried Dirt
* Dead Grass
* Ice
* Packed Ice
* Compressed Ice
* Glassy Ice
* Pinewood
* Oakwood
* Bamboo
* Mud
* Hard Rock
* Frozen Rock
* Deadwood
* Slime (Radiation / poison planet)

### Material blocks

Materials are more planet based then biome based but can be biome based.

* Aluminium
* Copper
* Zinc
* Nickel
* Rhodium
* Palladium
* Silver
* Indium
* Tantalum
* Tungsten
* Osmium
* Iridium
* Platinum
* Gold
* Lead
* Bismuth
* Tin
* Iron
* Thorium
* Uranium
* Plutonium
* Curium

### Other blocks

### Liquids

* Water
* Lava
* Oil
* Liquid Helium
* Liquid Neon
* Mercury
* Neodymium

### Planet 1 – Home

#### General Feel of planet

Difficulty will be easy. The terrain will be non-hostile and mobs will be low level.

The goal for this planet is to give the player a place to settle in. although other planets are also habitable (only some) this planet is aimed for the player to live and build without much problems.

#### Events

* Base name 1
* Event name 1

#### Biomes

* Plains
* Sandy Beach
* Desert
* Spring
* Bamboo forest
* Infested plains
* Cave

#### Materials

#### Enemies

Enemies will be of low level and will not be worth much in terms of farming

### Planet 2 – Overgrowth

#### General Feel of planet

#### Events

#### Biomes

#### Materials

#### Enemies

### Planet 3 – Ocean

#### General Feel of planet

#### Events

#### Biomes

#### Materials

#### Enemies

### Planet 4 – Glacial

#### General Feel of planet

#### Events

#### Biomes

#### Materials

#### Enemies

* Mermaids

### Planet 5 – Mining

#### General Feel of planet

Rough rocky terrain. World is mostly underground with little air. Very rich in minerals

#### Events

#### Biomes

#### Materials

#### Enemies

* Dwarfs

## Achievements/Goals

## Structures

* Waterfalls
* Caves
* Ruins
  + Houses
  + Buildings
* Underground Oasis’s

## Characters

Each character should include the back story, personality, appearance, animations, abilities, relevance to the story and relationship to other characters

### Weapon smith

Purpose: Create, enhances and repair Tools and weapons.

Special: Can break weapons to allow enhancing.

### Tailor

Purpose: Creates, repairs and enhances light armour with effects that increase stealth or fast movement.

Special: Dyes and paint.

### Herbalist

Purpose: Farms and Growing of plants.

Special:

### Doctor

Purpose: Healing and Restoring of Player.

Special: Modifies Damage effects –Can cause an explosion to occur when a certain health threshold is broken.

### Carpenter

Purpose: Creates Furniture from wood or other materials to customise and create new buildings.

Special:

### Armour smith

Purpose: Creates, Enhances and repairs Heavy Armor for Reduced damage taken.

Special: Creates defence systems that cause Enemies to avoid the safe zone.

### Pyro fanatic

Purpose: Create, Enhance and repairs Fire based weaponry and fuel.

Special:

### Quantum physicist

Purpose: Creates and sells Electrical components for electrical machines.

Special: Can create Teleporting devices.

## Levels

Each level should include a synopsis, the required introductory material (and how it is provided), the objectives, and the details of what happens in the level. Depending on the game, this may include the physical description of the map, the critical path that the player needs to take, and what encounters are important or incidental.

See Story of introductory material. The objective of the game will stay the same throughout. There will be mini goals and side quests. The player can follow their own path and nothing will be forced on them from which they won’t/can’t recover from.

## Blocks

All building blocks have a solid 16bit texture. Any edges will have an overlay that will make them look more ridged.



# 6. Interface

## Visual System

If you have a HUD, what is on it? What menus are you displaying? What is the camera model?

Have a health bar that is sectioned in 25% sections. 5%?

Health bar is located bottom left above the action bars – 10 buttons on the action bars. A popup bar for fatigue while sleeping.

## Control System

How does the game player control the game? What are the specific commands?

Keyboard and mouse will be the primary controllers. The keyboard will be used for moving and accessing the hot via keys and also some other actions. The mouse will be able used for aiming and can access the hotbar.

LATER STAGE – implement controller support. Lol. Jy gaan dit doen

## Audio, music, sound effects

Whatever comes out sounding the best.

## Help System

An in-game wiki will exist that will list all the blocks and notes about said block. There will be no guides but a list of things that can be done and support to refollow the story if the player has missed it or want to start following it midgame

# 7. Artificial Intelligence

## Opponent and Enemy AI

The active opponent that plays against the game player and therefore requires strategic decision making

### Enemies

All enemies will track the player. Pathfinding will be used to get to the player. Enemies will use their fighting technique to attack the player: this can be done either by projectiles or melee. Some things might even ignore blocks, go straight through it

#### Mole

#### Looter

#### Dwarfs

#### Mermaids

### Bosses

#### Herobrine

Easter Egg boss

#### Mole king

#### Todd

#### Elifricht

#### Elifricht’s Heart

#### Elifricht’s Claw

## Non-combat and Friendly Characters

Villagers as per the Characters. Villagers will assist the player and provide crafting options for them.

## Support AI

Companions will be able to easily stay with player by either following them or teleporting to them. The player and most entities will be bound by placed blocks.

# 8. Technical

## Target Hardware

### Minimum system requirements

* CPU: Single Core
* CPU SPEED: 2.0 Ghz
* RAM: 2.5 GB
* OS: Windows Xp, Vista, 7, 8/8.1, 10
* VIDEO CARD: 128mb Video Memory, capable of Shader Model 2.0+
* FREE DISK SPACE: 200 MB

### Terraria Recommended Requirements

* CPU: Multi core
* CPU SPEED: Dual Core 3.0 Ghz
* RAM: 4GB
* OS: Windows 7, 8/8.1, 10
* VIDEO CARD: 256mb Video Memory, capable of Shader Model 2.0+
* FREE DISK SPACE: 200 MB

## Development hardware and software, including Game Engine

Java Software development kit 8 will be used.

LWJGL will be used for graphical control rendering.

## Network requirements

n/a for now!

# 9. Game Art

The style is going to be 16bit graphics so each item, block, character, objects will be of the same style.

 

# 10. Proposed Ideas for later

* Ability to throw objects with the mouse automatically let’s go when the cursor moves too far from the player Character. Shoot objects?

# 11. Royalties

* Art
* Music
* Lore
* Names
* Chat

1. See Boss Fight Generics [↑](#footnote-ref-2)
2. The player will still be able to progress the game without this but this will make it easier and more enjoyable. [↑](#footnote-ref-3)