**The Dwarf Adventure Master Plan**

Core features

1. Destroyable terrain
2. Procedurally-generated world
3. Role play
4. Partially procedurally-generated enemies
5. Procedurally-generated quests
6. Crafting
7. Trading

Chunks:

1. Engine
2. Game
3. Editor
4. Main menu

**Difficulty**

Q: How to manage difficulty? Can player select difficulty? Why?

A: **No.** Game should be solid chunk, without variations. Rule set must be strictly defined, with no exceptions. This will simplify game development.

**Locations**

Q: How many locations should be generated per game session?

A: Player should select world size when starting new game. Limit should be determined by hardware that player uses (mostly RAM size).

**Terrain destructibility**

Q: Can player fully destroy terrain?

A: **No.** Terrain always must have areas where player can walk on. These areas can be called “platforms”. Platforms – indestructible pieces of terrain. They’re defining location skeleton.

**Terrain**

How ore should be spread? As close as in real world – we should have some sort of ore bodies spread on the each location. Each ore body should have different “stripe” on terrain where actual ore pieces can be placed.

**Methane**. We should have places with methane leakage, methane can be exploded if player or some NPC cause a fire. When methane is exploded, surrounding terrain should be destroyed. Methane should look like semi-transparent light green cloudy fluid.

**Water.** We should have some sort of sewer pipes with draining water. Each pipe should play water sound.

**Player movement**

Q: How player can move in world?

A: Walk, run, jump, use ladders, use hook-weapon.

**Types of damage**

1. Physical damage – dealt by melee weapons, creatures (claws, etc.)
2. Chemical damage – dealt by environment, creatures (acid spit, etc.), weapons
3. Fire damage – dealt by environment (lava), projectiles (grenades, rockets, fireballs), weapons
4. Electrical damage – dealt mostly by weapons (lightning gun)

**Skills**

Skills are defining set of main parameters that are defining secondary stats. When player receives enough experience points, he will get one skill point. Skill points can be invested in these skills:

1. Vitality (**VIT**) – defines maximum amount of damage that player can stand (max health). Affects physical damage resistance.
2. Strength (**STR**)– defines amount of damage from melee weapons. Affects maximum carry weight. Affects electrical damage resistance.
3. Dexterity (**DEX**) – affects chance of dodging enemy’s attack. Affects jump height.
4. Endurance (**END**)– defines amount of time to perform stamina-consuming actions before player gets tired (max stamina). Affects physical damage restistance.
5. Intelligence (**INT**) – defines ability to create items using blueprints. Affects chance of successful repair of an item.
6. Charisma (**CHR**) –defines prices of items when selling or buying them.

Maximum for each skill – 50, using this value we can calculate **max level** = 6\*50=**300**. To raise level higher and receive more skill points, player has to get more experience than for previous level. Here is a simple formula:

**XP = Level \* 20 \* EXP(Level/130)**

This will give you this progression for first 10 levels.

|  |  |
| --- | --- |
| Level | XP |
| 1 | 20 |
| 2 | 40 |
| 3 | 61 |
| 4 | 82 |
| 5 | 103 |
| 6 | 125 |
| 7 | 147 |
| 8 | 170 |
| 9 | 192 |
| 10 | 215 |

Each mob will give you some XP amount when it dies, it can be calculated by this formula.

**XPDrop = 0.1\*MobRarity\*MobXP**

**MobRarity** can vary from 1 to 10. For example we have **Bee:**

**MobLevel**=5, **MobRarity**=1, so **XPDrop**=0.1\*1\*103=10.3 XP points. So on first level you will have to kill four bees of level five to reach level 2.

**Stats**

Another main aspect of gameplay is character’s stats. They’re strictly defined by character’s skills.

1. Physical damage reduction
2. Chemical damage reduction
3. Fire damage reduction
4. Electrical damage reduction
5. Movement speed
6. Jump height
7. Max health
8. Max stamina
9. Level
10. Reputation
11. Melee weapon swing speed

**Crafting**

One of the main parts of the game will be crafting. Player can create various items using blueprints that he will find till his/her journey. Each blueprint defines set of items needed to create an item. This set will be look like this:

Pickaxe blueprint: 1x Wood, 2x Steel Ingots.

Each blueprint requires from player some intelligence to be able to create an item. For example we can add it to our pickaxe blueprint:

Pickaxe blueprint: 1x Wood, 2x Steel Ingots, Requires 3 **INT**

**Repairing items**

Any usable item will eventually be worn out so player will not be able to use it. Because of this fact, we have to provide a way to repair items. Main idea is simple – you need a blueprint to fix an item + some materials. . Since item damage can be only low, medium and high, item will require different amount of items to be restored. If we’ll look at our pickaxe, it will require:  
Low damage: 1x Steel Ingot

Medium damage: 2x Steel Ingot

High damage: 2x Steel Ingot + 1x Wood

This scheme is logical – more damaged item -> more materials it will require to be restored.

**Disassemble items**

When player do not need an item anymore, he will be able to disassemble it to parts. Disassembling not fully gives you items which you’ve been using to create an item. Again here is simple logic – you can’t disassemble an item without any garbage left. If we again look at our pickaxe, it will give us:

2x Steel Ingot, 1x Garbage

Why so? Wooden stick will be completely useless when we detach it from steel part. But steel can be turned into ingot again and be reused.

**Treasures**

Each location will contain certain amount of treasures. Total amount of treasure among all locations must be defined globally inside of the world. Then each location will take certain amount of treasures from world’s treasure storage and randomly place them on location. Why so? We need a way to control how treasures are spread in the world and their total amount to not let player become too rich on single location.

**Weapons**

Since weapons are not procedurally generated, you limited amount of them is available.

1. Shotgun
2. Pickaxe
3. Rail gun
4. Rocket launcher
5. Soil gun
6. Torch
7. Plasma drill
8. Drill
9. Reveal gun
10. Lightning gun
11. Harpoon
12. Grenade launcher
13. Hook
14. Construction gun
15. Acid gun
16. Force gun
17. Gravity gun

**Trading**

Player can trade with NPC’s. Trader always have prices higher, than actual price of a product. This is needed to not let player to cheat with money.

**Sound**

Sound is very important part of gameplay. We should have advanced audibility zones based on ray-tracing so player cannot be able to hear what’s going on behind a wall.

**Fog of war**

Fog of war does not let you to see what is going on behind a wall. It is very effective game play regulator, player will be curious what’s hidden on those black areas of the map. Fog of war should be dynamic – when player directly sees hidden zones – fog of war should dissolve and vice versa – when player does not see an area directly – fog of war should become more dense and block player vision. Amount of time when fog of war stays hidden should be determined by player’s character skills.

**Equipment**

Each dwarf can wear various equipment – helmets, gloves, chest armor, trousers, weapons, rings. Amount of rings is limited to 4 (two rings per hand).

**Special effects**

Each actor can be knocked out for a short period of time.

**Main menu**

Pages:

1. Main
2. New game
3. Save game
4. Load game
5. Options
6. Authors

**Main page:**

Buttons:

1. Start new game – leads to “New game” page
2. Save game – leads to “Save game” page
3. Load game – leads to “Load game” page
4. Options – leads to “Options” page
5. Authors – leads to “Authors” page
6. Exit – quits game

**New game page:**