## Main Character Design Documentation

**Such Life**

# **[Main character Info]**

The main character is what the player controls. The MC’s stats will increase linearly until reaching the level cap. The current level cap is level 100 for MC’s level and level 10 for sub-stats.

***Stats overview***

* Main Stats: Can be increased by leveling up and equipping armor.
  + Health
  + Defense
    - Physical Resist
    - Magic Resist
  + Attack
  + Mana
  + Stamina
  + Crit chance
  + Crit damage
* Sub-stats: Can only be increase by doing activities. Provide small addition to the main stats.
  + Agility
  + Dexterity
  + Charm
  + Vigor (Strength)
  + Fortitude (Endurance)
  + Accuracy

***Main Stats Explain***

MC’s Stats is subject to change for game balancing. All the stats here are base stats (stats before factor in any equipment, armor, and buff/debuff, perks, …)

* Health:
  + Drain when taking damage. Can only be recharged through the usage of healing potions or food.
  + Level 1: 300
  + Max Level: 7528
  + Formula: (Prev level’s health \* 1.0331) and round it to the nearest ones
    - Ex:
      * Level 1: 300
      * Level 2: (300 \* 1.0331) 🡺 round it up to the nearest ones = 310
      * Level 3: (310 \* 1.0331) 🡺 round it up to the nearest ones = 320 …
* Defense
  + Provide damage reduction for the player. Damage reduction is not valid when the damage dealt is “true damage”. There are 3 types of attack: Physical, Magic, and Hybrid (physical and magic—Magic infused melee or ranged weapon).
    - Physical Resist
      * Provide the MC with physical damage reduction.
        + Physical damage includes any ranged and melee weapons.
    - Magic Resist
      * Provide the MC with magic damage reduction.
        + Magic damage includes spells that deal damage or damage enhancements spells that can be applied to weapons.
  + Level 1:
    - Armor: 20
    - Magic resist: 20
  + Max level:
    - Armor: 400
    - Magic resist: 400
  + Formula: (Prev level’s def \* 1.0303) and round it to the nearest ones
    - Ex:
      * Level 68: 154
      * Level 69: (154 \* 1.0303) 🡺 round it up to the nearest ones = 159
      * Level 70: (159 \* 1.0303) 🡺 round it up to the nearest ones = 164 …
* Attack
  + MC’s base damage
  + Level 1: 150
  + Max level: 1501
  + Formula: (Prev level’s attack \* 1.0235) and round it to the nearest ones
    - Ex:
      * Level 32: 309
      * Level 33: (309 \* 1.0235) 🡺 round it up to the nearest ones = 316
      * Level 34: (316 \* 1.0235) 🡺 round it up to the nearest ones = 323 …
* Mana
  + MC’s mana pool. Drain every time the MC casts a spell. Regen after 2.5 seconds of not casting a spell. Base regen rates depend on the sub-stats “fortitude”. Base regen rates can be further upgraded when spending more points into the Mage skill tree.
  + Level 1 – Level max mana: 200
    - Base regen rate: depends on “[fortitude](#Fortitude)” (sub-stats) level.
* Stamina
  + Drain when the player is running or doing per-related movement. Will recharge after 2 seconds of not running or using per-related movement.
  + Level 1 – Level max mana: 300
    - Base regen rate: depends on “[fortitude](#Fortitude)” (sub-stats) level.
* Crit chance
  + Level 1 – Level max: 15%
* Crit damage
  + Level 1: 100%
  + Level 25: 112%
  + Level 50: 125%
  + Level 75: 137%
  + Max level: 150%

***Sub-stats (Attribute)***

MC’s Sub stats is subject to change for game balancing. All stats here can only be increased by doing stat-specific activities. All the stats here are base stats (stats before factor in any equipment, armor, and buff/debuff, perks, …)

* Agility
  + Dictates the chance of you to dodge attacks.
    - Dodge attack = takes reduce damage (only take 50% of the damage dealt)
    - (More details in Gameplay Mechanics document)
  + Level 1 dodge chance: 0 %
  + Max level dodge chance: 50%
  + Increase Agility by fighting mobs or use “the gym” (the gym might be a future building, but for now, you can only increase agility by killing mobs)
* Dexterity
  + Dictates how fast you research your technology.
  + Level 1: 0% tech research speed boost
  + Max level: 10% tech research speed boost
  + Req. university to start researching tech and increase dexterity stats.
  + Can only be increase by researching tech and spending time in the university.
* Charm
  + Dictates how successful you are in bargaining and persuading people.
  + The higher the level, the higher success chance.
  + Level 1: 0% success rate
  + Max Level: 90% success rate
  + (More details in Gameplay Mechanics document)
  + Can be increased by successfully bargaining/persuading.
* Fortitude
  + Dictates the regen rates of mana and stamina.
  + Level 1:
    - Mana Regen: 10/sec
    - Stamina Regen: 30/sec
  + Max level:
    - Mana Regen: 100/sec
    - Stamina Regen: 156/sec
  + Formula:
    - Mana Regen +10 every level up
    - Stamina Regen +14 every level up.
  + Can increase through fighting.
* Accuracy
  + Dictates the hit chance of the opponent.
  + Level 1: 0% additional hit chance
  + Max level: 50% additional hit chance
  + (More details in Gameplay Mechanics document)
  + Can only be increased by fighting monsters (boss included).

# [Perk tree]

***Overview***

Life Skill Tree

* Logging
* Fishing
* Blacksmith
* Farming
* Mining
* Fighting
* Bargaining
* Trickery

Combat Perk Tree

* Tank
* Bruiser
* Magic
* Sniper

***Life Perk Tree***

You will level up as you do activities. The current max cap for skill tree is level 20. As you level up a skill tree, you will unlock perks. All perks are subject to change.

General: All tools cannot be repaired until level 13, you must craft once they break. When you reach level 13, and if an item’s durability reaches 0, the item won’t break (simply disappear), but you can’t use it either. When the tools you gave the NPC breaks/ran out of durability, you can give them the resources so they can automatically repair. The NPC will have the same leveling system (and effects that come with it) as you. This means that as the NPC is doing their job, they will gain EXP and level up, except the NPC does not really have a stamina bar.

* Logging: Consume stamina when use
  + Level 3: You chop wood 20% faster.
  + Level 13: You can start building a logger camp.
    - Allow you to automate logging.
    - You can repair your axe’s durability by sharpening it (need item)
  + Level 21: Unlock chainsaw (researchable)
    - Allow you to chop wood even faster (+100%)
    - More durable than an axe, but costs materials to craft the chain once it’s broken and re-fuel.
  + Level 30: You gain 20% more resources.
* Fishing
  + Level 3: You reel in fish with the fishing rod 20% faster.
  + Level 13: Unlock fishing net. (researchable)
    - Allow the player to catch more fish in one throw.
    - Requires more material to craft but more durable than fishing rod.
    - You can repair the net by using a fishing workshop using materials (TBD)
  + Level 21: You can start building a fishing hut.
    - Allow you to automate logging.
  + Level 30: You gain 20% more resources.
* Blacksmith: You can only craft 1 equipment at a time
  + Level 3: Reduce the cost of crafting and repairing by 10% and decrease crafting time by 10%.
  + Level 13: You can start building a blacksmith.
    - Allow you to multi-crafting equipment.
    - Allow you to repair equipment.
    - Increase crafting material refunds receives from dismantling equipment by 10%
  + Level 21: Reduce the cost of crafting and repairing by an additional 10% and crafting time by an additional 15%
  + Level 30: Increase crafting material refunds received from dismantling equipment by an additional 15% and decrease material cost for crafting by 20%.
* Farming
  + Level 3: You harvest 20% faster.
  + Level 13: You can start building a farmer hut.
    - Allow you to automate farming.
  + Level 21: Unlock Sickle and Scythe (researchable)
    - Allow players to harvest crops in chunks.
    - Sickle:
      * More durable than Scythe but harvest area (2x2) is less than Scythe.
    - Scythe:
      * Less durable than Sickle but harvest is (4x2) is more than Sickle.
    - Require materials and items to sharpen and repair the items.
  + Level 30: You gain 20% more resources.
* Mining
  + Level 3: You mine minerals 20% faster.
  + Level 13: You can start building mining hut.
    - Allow you to automate mining.
  + Level 21: Unlock TNT
    - Allows you to break rocks/minerals in chunks.
    - You must craft it.
    - You can damage yourself (and others)
    - Yield less material when you blow up the rocks but quicker mining time.
  + Level 30: You gain 20% more resources
  + Level 40: (wayyyy later on, just an idea): Unlock C4
    - Allows you to chuck this thing
* Fighting
  + Melee
    - Level 3: You unlock the ability to sharpen melee weapon.
    - Level 13: You swing 5% faster.
    - Level 21: Decrease time it takes to sharpen an armament by 10%
    - Level 30: You swing 10% faster.
    - Level 40: Further decrease time it takes to sharpen an armament by 15%
  + Ranged
    - Level 3: you unlock the ability to carry armor-piercing your projectile.
    - Level 13: You reload 5% faster.
    - Level 21: increase projectile damage by 5%
    - Level 30: you reload 10% faster.
    - Level 40: Unlock the ability to carry different version of a projectile (explosive, poison, splitter, …)
* Bargaining
  + Level 3: You unlock the ability to send and offer of bargaining.
  + Level 13: Your chance of success bargaining increase by 5%
  + Level 21: Reduce the time it takes to for a sent offer to be accept by 15%
  + Level 30: Your chance of success bargaining increase by 10%
  + Level 40: You unlock the ability to set up Shops and supply chain.
* Trickery
  + Level 3: Your chance of persuading increase by 5%
  + Level 13: You unlock the ability to Threat people (50% chance)
  + Level 21: Your chance of persuading increase by 10%
  + Level 30: Increase your chance of threating people by an additional 50%
  + Level 40: You unlock the ability to hire “bad NPC” (Thief, pirates, bandits, …)

***Combat Perk Tree***

As you level up, you gain combat perk points to spend in the skill tree. Each node you unlock will grant your character various effects like life steal, attack speed, element infusion, and much more. There will be 4 main categories of perks:

1. Tank:
   1. Design idea: focus on damage reduction effects and increase health/def.
2. Bruiser
   1. Design idea: focus on life steal effects and increase health.
3. Magic
   1. Design idea: focus on increasing the mana bar and introduce new spells and way to infuse weapon with magic (allow weapon to deal magic damage).
4. Sniper
   1. Design idea: focus on long range weapon buffs (increase damage but decrease fire rate), introduce cloaking and stealth skills (i.e. increase damage while not being seen, …)

# [HUD]

Your main HUD (Heads-up display) will be located on the top left corner of the screen and display 4 things:

1. Health (Green)
2. Stamina (Yellow)
3. Mana (Blue)
4. Battle-fury (Red)
   1. Essentially your ultimate. Once this bar fills up, you can activate your weapon-specific’s special move.

Your survival HUD will located in (TBD) and display these following things:

1. Hunger (
2. Thirst (
3. Sanity (

# [Movement]

The MC will have 8-directional movement.

***Basic movement***

MC’s basic movement only consist of walk and run.

***Perk-related movement***

Within the perk tree, the player can unlock this following movement technique:

1. Roll
   1. Description: roll toward the direction of the cursor
   2. Cooldown: 0.5s
   3. I-frame: 0.1s
2. Slide
   1. Description: slide toward the direction of the cursor
   2. Cooldown: 0.5s
   3. I-frame: none
3. Teleport
   1. Description: teleport toward the direction of the cursor
   2. Cooldown: 0.5s
   3. I-frame: 0.1s
4. Dash
   1. Description: dash toward the direction of the cursor
   2. Cooldown: 0.5s
   3. I-frame: none

# [Survival]

***Survival mechanics overview***

The player will have to keep track of the MC’s survival needs. As the stats decrease, debuffs start to incur and these debuffs will carry into the hunting ground and the dungeon. There will be 3 extra resources that the player must take into consideration.

* Hunger: Regen using food
  + 100%-75%
    - +8% Health/Attack/Defense
    - +5% attack speed
    - +10% walking/running speed
  + 74%-50%
    - +2% Health/Attack/Defense
    - +5% walking/running speed
  + 49%-25%
    - No additional
  + 24%-1%
    - -10% Health/Attack/Defense
    - -5% attack speed
    - -5% walking/running speed
    - -10% stamina regen rate?
  + 0%
    - -20% Health/Attack/Defense/Mana/Stamina
    - -10% attack speed
    - -15% walking/running speed.
    - -20% stamina regen rate
* Thirst: Regen using drinks
  + 100%-75%
    - +10% Stamina/Mana
    - +10% mana/stamina amount regen per second
  + 74%-50%
    - +5% Stamina/Mana
    - +5% mana/stamina amount regen per second
  + 49%-25%
    - No additional
  + 24%-1%
    - -10% Stamina/Mana
    - -5% mana/stamina amount regen per second
    - +1 second of mana regen delay.
  + 0%
    - -20% Stamina/Mana
    - -10% mana/stamina amount regen per second
    - +1.5 second of mana regen delay.
* Sanity: Regen using sleep (Maybe something related to exp earn when doing activities)
  + 100% -75%
    - Gain 10% extra EXP when doing activities.
  + 74% - 50%
    - Gain 5% extra EXP when doing activities.
  + 49% - 25%
    - Do not gain any extra EXP when doing activities.
  + 24% - 1% and below
    - -5% extra exp when doing activities.
  + 0%
    - -10% extra exp when doing activities.