Game Design Document

based on **DOI:**

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Name of the Game: Jump Ninja
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Tutorial: 2
Link to the game repository: https://github.com/ainkoom/JumpNinja.git

Table of content

1 Overview

1.1 Game abstract

Jump NinJa is a game intended to be fun, addictive and remarkably interesting at the same time. It is supposed to be a role playing and an adventure game where the town of Lakuza has recently been taken over by a volcanic eruption and the enemies of the near lands have taken advantage to rob the town and also chief's daughter who has the power to cure all illness has been kidnapped. This has left town in shambles and all the villagers have assembles at ZinZinNo, the main characters house to help them. The main character ZinZinNo is the strongest man in the village and respected by all the villagers. The main objective of the game is to conquer all enemies and save the healing priestess who has been kidnapped. This will be achieved using weapons to defeat the enemies. The game also has a health status and points for scoring your performance.

1.2 Objectives to be achieved by the game.

The basis of the game is to avoid becoming a prey to the enemies as you navigate your way to save the priestess from the enemies. Aside avoiding being seen by the enemies you must defeat all those you come in contact with. There are tips and interactions with some NPCs which will help you in navigation your way on the map to ensure you are on the right track. You also find weapons and food on your way, the weapons are for fights and the food boosts your health. The constraints here is the game will be available via PC version now. To be updated, the game setting might change a bit when the main development starts

1.3 Core gameplay
The play

The game is a single player adventure game where there is several interactions between many NPCs. There is also an inventory system where points, food, health and all related data are stored in the game. The game starts with the user pressing on the spacebar to jump. This is an extremely comfortable key to start from. The actions are limited to jumping and running. The game has been made in such a way that

the player cannot jump again until the character touches the ground. In the future there will be a cheat to do multiple jumps in the air. The spacebar responds to the number of keystrokes, hence the more you tap it the higher your jump gets.

The game starts with the user using the forward/back key which moves the player forward or backwards. Afterwards, the player moves/run forward by itself. We can control the many actions like jumping, attacking etc., by tapping and swiping in various ways and directions. The keys used are the forward, back, down and up arrows or A, S, W and D key to perform same actions. Since there are so many obstacle, players must think critically and be precise which sparks the fun in the game.

1.4 Game features

Throughout the game, the player at every point will interact with the NPCs being it accessing them for food, fight against some or getting tips. Another feather which is the inventory system helps in storing all data related to the player. Every level comes with a different sound though the sound effect for all the actions remains the same. To be updated as most will be determined during the development phase

1.4.1 Genre

The genre of the game is Survival/ adventure Role playing character game because the user starts the game in a very hostile environment with little to no tools to fend for themselves and at the end of the day make it to safety wholly depending on the tools and food they pick on their way to safety.

1.4.2 Number of players

Jump Ninja is a one player game.

1.4.3 Game theme

The game scenes changes as the level progresses. Its starts from the forest setting and then there is a community setting, vegetation setting, lakes and other scenes as you progress. All these represent the community and era of the setting of the game. To be updated.

1.4.4 Story summary

Jump NinJa is a game intended to be fun, addictive and remarkably interesting at the same time. It is supposed to be a role playing and an adventure game where the town of Lakuza has recently been taken over by a volcanic eruption and the enemies of the near lands have taken advantage to rob the town and also chief's daughter who has the power to cure all illness has been kidnapped. This has left town in shambles and all the villagers have assembles at ZinZinNo, the main characters house to help them. The main character ZinZinNo is the strongest man in the village and respected by all the villagers. The main objective of the game is to conquer all enemies and save the healing priestess who has been kidnapped. This will be achieved using weapons to defeat the enemies. The game also has a health status and points for scoring your performance.

the user must tap the spacebar to start the player. Afterwards, the player moves/run forward by itself. We can control the many actions like jumping, attacking etc., by tapping and swiping in various ways and

directions. The keys used are the forward, back, down and up arrows or A, S, W and D key to perform same actions. Since there are so many obstacle, players must think critically and be precise which sparks the fun in the game.

2 Mechanics

2.1 Game elements categories

Every level of the game presents its new challenge, obstacles and speed and requires a lot of thought process to complete all the levels. As stated, the premise is to arrive at a safe zone devoid being spotted or killed by the enemies to be able to start the next level. The game begins by moving from one safe spot "safe spot/ mountain top" void of the hot lava and in jumping and moving forward trying as much as possible to avoid colliding with some NPCs. Also, the speed increases with respect to the level of the game.

- Movements: The game is control the many actions like jumping, attacking etc., by tapping and swiping in various ways and directions. The keys used are the forward, back, down and up arrows or A, S, W and D key to perform same actions. The mouse is used for changing directions and the space bar is used for jumping

2.2 Rules

To Jump: Spacebar or W. Also, The spacebar responds to the number of keystrokes, hence the more you tap it the higher your jump gets.

• Higher Jump: Continuous tap on space bar or W

• Move forward: Right arrow key or D.

• Move back: Left arrow key or A

• Down or Duck: Down arrow or S

• Speed or move faster: Ctrl + Right arrow or Ctrl + D.

To be updated.

2.2.1 Interaction rules

All obstacles including the stones falling from above, hot lave from below and the decoy stones are intended to reduce the characters health level which is a total of three. When all three are consumed the character dies and player has to start the current level again. To be updated.

2.2.2 Artificial Intelligence

The game makes use of different types of animations for moving the enemy NCP, start and endscreens. The game also employs the use of NavMesh for some aspects. This allows to use the Nav Mesh agent and Nav mesh obstacles to follow a main character around. The player has to avoid colliding with the Nave Mesh agent to prevent the game from ending.

Also the game employs the use of the finite state machine (FSM) to control some NPCs some of which are enemies. They could be activated using the key **H - Wander, J - Attack and K – Do nothing**. When these short keys are activated, it allows the designated NPCS to perform the associated function

The game will make use of messing to allow the main character to follow an enemy to kill them. It is also useful at the final stage to conquer the last enemy before the priestess can be rescued to safety [Describe here how the game elements should react under different circumstances in the game].

2.3 Game world elements
To be updated. Other elements such as trees, birds and houses in the background does not have any direct representation to the game. They only add to the aesthetics of the game. The ground around the paths has the volcanic feel with smoke oozing out of it to depict the lava is still hot and as such when the main character goes of the path and falls in there it dies

2.4 Game log elements
The game is made up of levels and stages. There are two levels now and each present with a different background or scene environment. The NPC movement changes in each level, until all enemies are avoided or killed a level cannot be completed. There is also a score base system which calculates the points based on the coins collected.

2.5 Other elements
[Describe any other element that can't be classified on any other element classification in the mechanics].

2.6 Assets list
The game has several asset list such as add life, tips, coin counter but not limited to sound effects, music, 3d modules of NPC, vegetation, mountains, bare ground, weapons etc

3 Dynamics
In each level, the players face different obstacles and challenges. Also, the speed intensity increases as the level progresses making it more difficult.

3.1 Game World
3.1.1 Game theme details
Setting are colourful to depict real life examples though in a more contrasty way. The environments are made up of vegetation, mountains, rivers, trees and many others. To be updated.

3.1.2 Missions/levels/chapters Flow
The game follows a sequential pattern. The end goal is to reunite with the characters family. As such each state and level takes you closer to the end goal. Each level and stage end you on a temporary safe ground. The setting and themes of the background changes with each stage and level. To be updated when the development start as there might be some changes.

3.2 Missions/levels/chapters elements

The main element is to avoid getting in contact with falling rocks, stepping into the hot lava or colliding with obstacles. The game follows a sequential pattern. The end goal is to reunite with the characters family. As such each state and level takes you closer to the end goal. Each level and stage ends you on a temporary safe ground. The setting and themes of the background changes with each stage and level.

3.2.1 Objectives

- The game playable characters can navigate around the world and levels through a set of movement mechanics using left, right, up and down.
- Falling objects, colliding or falling can end the characters life thereby reducing their health.
- Food gives extra health whiles red hearts gives extra life.

3.2.2 Rewards

A player gets new set of health when he has been able to collect 3 different kinds of foods and lives when a new level is reached. Unlike the stages where the character continues with the available health and lives till they gain extra or die.

3.2.3 Challenges

All obstacles including the stones falling from above, hot lave from below and the decoy stones are intended to reduce the characters health level which is a total of three. When all three are consumed the character dies and player has to start the current level again.

3.3 Special areas

Food the user finds in the game gives an extra health whiles a red heart gives extra health. All is dependent on the amount the player has. If both health and the hearts are full they go to waste. The game does not allow the character to carry more than three.

3.4 Game interface

The title screen gives you a summary of the game and option to see ranking scores from various players. There is also an option button where the player can find saved games and to be able to choose attire color for character.

3.5 Controls interface

To Jump: Spacebar or W. Also, The spacebar responds to the number of keystrokes, hence the more you tap it the higher your jump gets.

- Higher Jump: Continuous tap on space bar or W
- Move forward: Right arrow key or D.
- Move back: Left arrow key or A
- Down or Duck: Down arrow or S

• Speed or move faster: Ctrl + Right arrow or Ctrl + D.

3.6 Game Balance
To be updated.

4 Visuals and Sounds
the sound corresponds to the movement giving a sense of physical presence in the game. It also makes the game enjoyable as you journey along.

Animation is essential for every form of game and as such various part of this game has been animated for emphasis purposes, bring illusion to the game and overall bring life to the game. Various UI animated include the start screen, died screen and end screen. Also other inventory items like the player life left has been animated using the key frame animation.

The frame animation was used in the start of the game where the player is given instruction on the storyline of the game, the controls and what is expected of them in the end. This allows to place emphasis on areas where the player is expected to see.

Key-frame animation has been used in the game in the areas of where the food (extra life is obtained) and also to highlight tip and important items to pickup

The end goal is to animate all items the player is supposed to pick in helping them on their journey being it food, health, tips etc. Also, this was employed because of its low memory consumption and does not put much pressure on the players computer.

The Tagged Animation was used in animating the enemy NPC because it was a one way movement. These NPCs basically move from the edge of one platform to the next and as such this was best for it.

Particle Systems animation was used for the particles for the volcanic eruption. this gives a sense of the fire and smoke still being active

4.1 Game visuals
Though a first-person game, it takes advantage of 3D objects. It is a very competitive game as players will yearn to get to the highest level and boast of the most number of points. it presents the feel of 3D due to the shades in the blocks and obstacles. Movements are only limited to up, down, forward and back. To be updated.

4.2 Game sounds

The game makes use of simple sound files to depict various sound effects for jumping, colliding, falling and end of game.

5 Document information

5.1 Definition, acronyms and abbreviations.

N/A

Term or abbreviation	Definition and acronyms

5.2 Document references.

[List all the documents referenced by this GDD and specify where they can be found].

(187) Alright, Low Poly Explosion Particle System - Unity 2020 - YouTube

(184) Creating Simple Animations (Unity Tutorial) - YouTube

6 Attachments

[Add any other information or relevant document to the design of the game].