Title Page

Snapy Snake
– Perhaps also add a subtitle or high concept sentence.

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The Game Design Document (GDD) it the blueprint from which a computer or video game is to be built. As such, every single detail necessary to build the game must be addressed in the document (or support documents).   If it's not in the document, then it probably won't be in the game.

Below you will find an outline for a generic Game Design Document. The problem is that no generic GDD will be able to address all the various genres for which a game may be created. For example, consider the games PacMan, SimCity and Doom. All three games required detailed design documents, but if you think about it, those documents would be entirely different! As such, when using the outline below you will find sections that will be totally meaningless to your game. But also, there will be sections that your GDD requires to describe the game. Just because it's not in my outline, it doesn't mean that it doesn't belong.

The GDD is a reference document.   Members of the development team will constantly be using the document to find specific information for their specific needs.   Consider the size such a document may grow to in order to document every piece of the game. We don't want the GDD to cause information overload and then become a prop under somebody's wobbly desk. As such it is important that you organize and format the document to make it easy to use. Also note that some of these sections might not appear in the GDD itself but instead would appear in supplemental documents such as an Art Bible or Test Plan. This helps make the overall document more manageable and readable.

One last comment, a game design document is meant to be a living document.   Just as when the artist changes the design of his painting every time he takes his brush to the canvas, a computer or video game evolves as code and art are created.   The GDD then is the communication tool from which all the members of the team can follow that evolution.

Document Revision history:

Version	Date	Author(s)	Changes
0.2	January 16, 2013	Emile Cormier	
0.3	January 05, 2016	David Burchill	

(Use word's "update table of contents"   to generate / regenerate a table of contents.)

Table of Contents

1. Section I - Game Overview

1.1. Game Concept

Instead of limiting the snake's movements to standard 2-directional (left and right), I added 4 more movement directions: Left diagonal up, right diagonal up, left diagonal down, and right diagonal down. Players tried to achieve the highest score by eating food, trying not to bite themselves, and not hitting the wall.

1.2. Design History

This is a living document and will change as you develop your game. This section maintains a history of any significant changes to your game.

1.3. Feature Set

- Use A/Left Arrow, W/Up Arrow, D/Right Arrow, and S/Down Arrow.
- Snake can turn in increments of smaller angles (e.g., 45°, 22.5°).
- Use polar coordinates or vector math to calculate positions.
- Square map with wall.
- Special items that allow temporary benefits like auto-homing (automatically guiding the snake toward the food) or magnetic attraction.

1.4. Genre: Retro, Action, Strategy, Survival, Arcade

1.5. Target Audience: Any Age

1.6. Game Flow Summary

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

Menu Screen -> Gameplay -> Game Over Screen -> Menu Screen
Menu Screen -> Instruction Screen -> Menu Screen
Menu Screen -> High Score Screen -> Menu Screen

1.7. Look and Feel

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

The game will look retro with pixel graphic.

1.8. Project Scope

A summary of the scope of the game.

1.8.1. Number of locations: 1

1.8.2.   Number of levels: 2

1.8.3.   Number of NPC's: None

1.8.4.   Number of weapons: None

1.8.5.   Number of snake: 1

1.8.6.   Number of food: 3

2. Section II - Gameplay and Mechanics

2.1. Gameplay

2.1.1.   Game Progression: The snake must collect food to get the point. The more food the snake gets, the faster its speed increases.

2.1.2. Mission/challenge Structure: Try to live and get much point as much as possible

2.1.3.   Puzzle Structure: None

2.1.4.   Objectives – What are the objectives of the game? Grow, shrink, slow down the snake by collecting food. Survive as long as possible without colliding with walls.

2.1.5.   Play Flow – How does the game flow for the game player: None

2.2. Mechanics

What are the rules to the game, both implicit and explicit. This is the model of the universe that the game works under. Think of it as a simulation of a world, how do all the pieces interact? This actually can be a very large section.

2.2.1.   Physics

How does the physical universe work?

2.2.2.   Movement

2.2.2.1.   *General Movement:* Left and Right

2.2.2.2.   *Other Movement:* Left diagonal up, right diagonal up, left diagonal down, and right diagonal down.

2.2.3.   Objects

2.2.3.1.   *Picking Up Objects:* Food. All food will gain score, Apple to grow. Orange to shrink. Blueberry to slow down.

2.2.3.2.   *Moving Objects:* 1

2.2.4. Actions

2.2.4.1.   *Switches and Buttons:* None

2.2.4.2.   *Picking Up, Carrying and Dropping:* None

2.2.4.3.   *Talking:* None

2.2.4.4.   *Reading:* None

2.2.5. Combat

If there is combat or even conflict, how is this specifically modeled?

None

2.2.6. Economy

What is the economy of the game? How does it work?

2.3. Screen Flow

2.3.1. Screen Flow Chart

A graphical description of how each screen is related to every other

Start Screen -> Gameplay Screen -> Game Over Screen

2.3.2. Screen Descriptions

What is the purpose of each screen?

2.3.2.1.   *Main Menu Screen:* Show the logo and some menu options.

2.3.2.2.   *Options Screen:* None

2.3.2.3.   *Gameplay Screen:* Gameplay where players control the snake, eat fruits and try not to hit the walls.

2.3.2.4.   *Game Over Screen:* Show the game is over and option to type in player's name to save their score.

2.3.2.5.   *Game Instruction Screen:* Explain how to control the snake, how to keep the snake alive, and the purpose of the game.

2.3.2.6.   *Display High score Scene:* Display every players' name and score.

2.4. Game Options

What are the options and how do they affect game play and mechanics?

None

2.5. Replaying and Saving:

- Replaying Options: from the Pause Menu and After Game Over
- Saving: Yes

2.6. Cheats and Easter Eggs: None

3. Section III – Story, Setting and Character

3.1. Story and Narrative

Specific details like scripts and cut scenes may not be in this document but be in the Story Bible.

3.1.1. Back story: None

3.1.2. Plot Elements: None

3.1.3. Game Progression: None

3.1.4. License Considerations: None

3.1.5. Cut Scenes: None

3.1.5.1. Cut scene #1

3.1.5.1.1. Actors

3.1.5.1.2. Description

3.1.5.1.3. Storyboard

3.1.5.1.4. Script

3.1.5.2. Cut scene #2

etc.

3.2. Game World

3.2.1. General look and feel of world

- The game looks pixel, retro and nostalgic

3.2.2. Area #1: None

        3.2.2.1.   General Description

        3.2.2.2.   Physical Characteristics

        3.2.2.3.   Levels that use area

        3.2.2.4.   Connections to other areas

    3.2.3.   Area #2: None

        etc.

3.3. Characters: 1

    3.3.1.   Character #1 Snake

        3.3.1.1.   Back story: None

        3.3.1.2.   Personality: None

        3.3.1.3.   Look

            3.3.1.3.1.   Physical characteristics

            3.3.1.3.2.   Animations

        3.3.1.4.   Special Abilities

        3.3.1.5.   Relevance to game story

        3.3.1.6.   Relationship to other characters

        3.3.1.7.   Statistics

    3.3.2.   Character #2

etc.

4.   Section IV – Levels: 2

4.1. Level #1

    4.1.1.   The snake will move quite flexible with medium speed.

4.2. Level #2

    4.2.1.   The snake will only turn left and right with faster speed.

4.3. Training Level

5. Section V - Interface

5.1. Visual System

5.1.1. HUD - What controls: None

5.1.2. Menus: A menu of 3 options: Play, Instruction, and High Score

5.1.3. Rendering System

5.1.4. Camera: Top-down

5.1.5. Lighting Models

5.2. Control System

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

5.3. Audio:

5.4. Music: There are theme songs for menu and gameplay

5.5. Sound Effects: When the Snake eats food and when the snake dies.

5.6. Help System

6. Section VI - Artificial Intelligence: None

6.1. Opponent AI

The active opponent that plays against the game player and therefore requires strategic decision making (example, Civilization or Chess, how is it to be designed?

6.2. Enemy AI

Villains and Monsters

6.3. Non-combat Characters

6.4. Friendly Characters

6.5. Support AI

6.5.1. Player and Collision Detection

6.5.2. Pathfinding

7. Section VII – Technical

7.1. Target Hardware and operating system

- Requires Visual Studio with C++ 17 and later.

7.2. Supported game controllers and peripherals: None

8. Section VIII – Game Art

Only show concept art here (rough sketches)

8.1. Concept Art: Pixel

8.2. Style Guides: None

8.3. Characters: Snake, fruits, and walls

8.4. Environments: None

8.5. Equipment: None

8.6. Cut scenes: None

8.7. Miscellaneous: None