GAME DESIGN DOCUMENT

**Date:** [24-05-2025]  
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**1. Game Overview**

**1.1 Concept**

A modern take on the classic **Snake** arcade game where the player controls a snake to eat food, grow longer, and avoid obstacles (walls/self-collision).

**1.2 Genre**

* **Arcade**
* **Puzzle/Casual**

**1.3 Target Audience**

* Casual gamers
* Retro game enthusiasts
* Mobile & PC players

**1.4 Platforms**

* Mobile (iOS, Android)
* Web (Browser)
* PC (Windows, macOS, Linux)

**1.5 Unique Selling Points**

* Simple, addictive gameplay
* Retro aesthetic with modern polish
* Customizable skins & power-ups

**2. Gameplay**

**2.1 Core Mechanics**

* **Movement:** Snake moves continuously in one direction (Up/Down/Left/Right).
* **Growth:** Snake grows longer when eating food.
* **Collision:** Game ends if the snake hits itself or walls (depending on mode).
* **Scoring:** Points increase with each food eaten.

**2.2 Controls**

* **Mobile:** Swipe gestures (Up/Down/Left/Right)
* **PC/Web:** Arrow keys (↑, ↓, ←, →) or WASD

**2.3 Game Modes**

| **Mode** | **Description** |
| --- | --- |
| **Classic** | Snake dies on wall collision. |
| **Endless** | Snake wraps around screen edges. |
| **Time Attack** | Score as much as possible in a time limit. |
| **Multiplayer** | Compete against another snake (local/online). |

**2.4 Power-Ups (Optional)**

| **Power-Up** | **Effect** |
| --- | --- |
| **Speed Boost** | Temporarily increases speed. |
| **Slow Down** | Temporarily decreases speed. |
| **Shrink** | Reduces snake length. |
| **Invincibility** | No collision damage for a short time. |

**3. Art & Visual Style**

**3.1 Graphics**

* **Pixel Art / Minimalist Vector**
* **Retro-inspired** (like original Nokia Snake)
* **Optional Themes:** (Dark mode, Neon, Nature, etc.)

**3.2 UI Elements**

* **Main Menu** (Play, Settings, High Scores, Exit)
* **In-Game HUD** (Score, Timer, Speed)
* **Game Over Screen** (Restart, Menu, Share Score)

**4. Sound & Music**

**4.1 Sound Effects**

* **Eating food** (Chime/Pop)
* **Collision** (Crash/Game Over sound)
* **Direction change** (Subtle swipe sound)

**4.2 Background Music**

* Retro chiptune / Lo-fi beats
* Dynamic music that speeds up as the snake grows

**5. Technical Details**

**5.1 Engine & Tools**

* **Unity / Godot / Phaser (for web)**
* **Aseprite / Piskel (for pixel art)**
* **BFXR / Chiptone (for sound effects)**

**5.2 Performance Targets**

* **Mobile:** 60 FPS (Low-end devices supported)
* **PC/Web:** Smooth performance with minimal lag

**5.3 Save System**

* Local storage for **high scores**
* Optional cloud sync (Google Play, Apple Game Center)

**6. Monetization (Optional)**

* **Ads:** Banner/Rewarded (for continues)
* **In-App Purchases:** Snake skins, themes
* **Premium Version:** Ad-free with extra modes

**7. Development Timeline**

| **Phase** | **Duration** | **Tasks** |
| --- | --- | --- |
| **Prototype** | 1-2 weeks | Core mechanics, basic movement |
| **Alpha** | 2-3 weeks | UI, basic art, sound |
| **Beta** | 2 weeks | Polish, bug fixes, additional modes |
| **Release** | 1 week | Testing, store submission |

**8. Risk Assessment**

* **Too simple?** → Add power-ups & modes
* **Performance issues?** → Optimize collision detection
* **Low retention?** → Add daily challenges & leaderboards

**Conclusion**

This GDD outlines a **modern Snake game** with classic mechanics, optional enhancements, and multiplatform support. Adjust scope based on team size & budget.

**Next Steps:**  
✅ Create a prototype  
✅ Design core assets  
✅ Implement scoring & collision

**Approved by:** [Hemanth/ Team Lead]  
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