



FantasyCraft Game Documentation

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Game Overview

FantasyCraft is a 2D turn-based combat game with crafting mechanics, featuring elemental combat, boss battles, and character progression. Players progress through floors, defeat enemies, craft new items, and unlock achievements while collecting currency to purchase cosmetic skins.

Genre: Turn-based RPG with Crafting Elements

Platform: Mobile-optimized Unity game

Target: Casual to mid-core RPG players

Core Game Mechanics

Floor Progression System

- **Linear progression** through 30 floors
- **Enemy scaling** based on difficulty curves for HP and damage
- **Boss encounters** at floors 10, 20, and 30
- **Checkpoint system** after boss defeats for easier restart
- **Dynamic enemy spawning** with random elements and variance

Turn-Based Combat Flow

1. **Player Turn:** 1.25 seconds countdown → Player action (attack/use item) → Effects applied
2. **Enemy Turn:** 1.25 seconds countdown → Enemy attack/special ability → Effects applied
3. **Repeat** until one side is defeated

Core Game Loop



Combat System

Fighter Statistics

Each combatant (player/enemy) has:

- **HP:** Health points (player starts ~50, enemies scale with floor)
- **Base Damage:** Attack power before modifiers
- **Elemental Type:** Innate element for defense calculations
- **Attack Element:** Element used for offensive attacks

Elemental System

Elements: Physical, Fire, Air, Water, Earth

Damage Multipliers:

- Fire vs Air: 1.2x damage
- Fire vs Water: 0.8x damage

- Water vs Fire: 1.2x damage
- Water vs Earth: 0.8x damage
- Air vs Earth: 1.2x damage
- Air vs Water: 0.8x damage
- Earth vs Air: 1.2x damage
- Earth vs Fire: 0.8x damage
- Physical: 1.0x vs all (neutral)

Buff System

Players can apply temporary buffs with durations:

- **Attack Buff:** +X damage for Y turns
- **Defense Buff:** +X damage reduction for Y turns
- **Shield:** Absorbs X damage (doesn't expire with turns)
- **Crit Chance:** +X% critical hit chance for Y turns

Critical Hit System

- **Base Crit:** Items provide crit chance (0-100%) and multiplier
- **Crit Calculation:** If random < crit chance, damage × multiplier
- **Default Multiplier:** 1.5x if no item equipped

Crafting System

Item Categories

1. **Base Elements:** Never consumed, infinite use (Fire, Water, Earth, Air)
2. **Intermediate Items:** Created from base elements, can be consumed
3. **Advanced Items:** Complex recipes requiring multiple ingredients

Item Properties

Each ElementDef has:

- **Use Type:** None, Attack, Heal, Buff
- **Element:** Associated elemental type
- **Power:** Damage/healing amount
- **Crit Stats:** Chance and multiplier
- **Cooldown:** Turns before reuse
- **Consumption:** Whether consumed in crafting
- **Single Use:** Whether consumed when used in combat

Crafting Mechanics

- **Recipe Database:** Predefined combinations ($A + B = C$)
- **Discovery System:** First-time crafts trigger discovery rewards
- **Consumption Rules:** Items flagged as `consumeOnCraft` are removed after use
- **Combo Tracking:** 33 total possible combinations for achievement progress

Item Equipment

- **Attack Slot:** Single slot for equipping usable items
 - **Drag & Drop:** Items from inventory to attack slot
 - **Cooldown Management:** Items on cooldown cannot be equipped
 - **Usage:** Attack slot items are used during player turns
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Character Progression

Character Statistics

- **Dynamic HP/Damage:** No permanent leveling, but floor-based scaling
- **Temporary Buffs:** Combat-specific enhancements
- **Equipment:** Single attack slot for tactical choice

Inventory Management

- **Dynamic Collection:** Items gained through crafting
- **Cooldown Tracking:** Per-item cooldown system
- **Starting Kit:** Base elements provided at run start

Death & Restart

- **Checkpoint System:** Restart from last boss floor (keeps progress)
 - **Full Restart:** Complete run restart (resets everything)
 - **Health Reset:** Full HP restoration on restart
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Boss Mechanics

Boss Types & Abilities

Skeleton King (Floor 10)

- **Shield of Bones:** Blocks ALL damage for 2 turns
- **Cooldown:** 4 turns between uses
- **Strategy:** Wait out shield, use strong attacks when vulnerable

Elemental King (Floor 20)

- **Elemental Harvest:** Blocks all non-Physical damage for 3 turns
- **Cooldown:** 4 turns between uses
- **Strategy:** Use Physical attacks or wait out ability

Dragon King (Floor 30)

- **Dimensional Breath:** Removes up to 2 random non-base items from player inventory
- **No Duration:** Instant effect
- **Strategy:** Minimize valuable item exposure, craft as needed

Boss Scaling

- **HP Multiplier:** 1.1x base HP scaling
- **Damage Multiplier:** 1.1x base damage scaling
- **Special Ability Usage:** ~30% chance per turn after initial cooldown

Economy & Shop System

Currency System

- **Gems:** Primary currency earned by defeating enemies
- **Enemy Rewards:** 5 gems per normal enemy
- **Boss Rewards:** 15 gems per boss
- **Achievement Rewards:** Variable gem bonuses

Shop Items

- **Character Skins:** Cosmetic player appearance changes
- **Companion Skins:** Cosmetic companion appearance changes
- **Pricing:** Variable gem costs per skin
- **Ownership:** Permanent unlocks saved in PlayerPrefs

Cosmetic System

- **Skin Application:** Real-time sprite swapping
 - **Persistence:** Equipped skins saved across sessions
 - **Default Unlocks:** Some skins available from start
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Achievement System

Achievement Categories

Boss Progression

- **ID 01:** Defeat Skeleton King (Floor 10) - Rewards gems
- **ID 02:** Defeat Elemental King (Floor 20) - Rewards gems
- **ID 03:** Defeat Dragon King (Floor 30) - Rewards gems
- **ID 04:** Conqueror - Defeat all 3 bosses - Rewards gems

Crafting Mastery

- **ID 05:** Discover 10 item combinations - Rewards gems
- **ID 06:** Discover 15 item combinations - Rewards gems
- **ID 07:** Discover 20 item combinations - Rewards gems
- **ID 08:** Master Crafter - Discover all 33 combinations - Rewards gems

Achievement Features

- **Progress Tracking:** Incremental progress toward goals
 - **Persistent Storage:** Progress saved in PlayerPrefs
 - **Reward System:** Automatic gem distribution on unlock
 - **Toast Notifications:** Visual feedback for achievements
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Audio & Visual Systems

Audio Management

- **Music Tracks:** Main Menu, Gameplay, Boss battle themes
- **Sound Effects:** Combat, UI, crafting, achievement sounds
- **Dynamic Switching:** Context-aware music changes
- **Volume Control:** Separate music/SFX sliders with mixer integration

Visual Effects (VFX)

- **Combat Effects:** Attack, heal, buff, death animations
- **Boss Specials:** Unique VFX for boss abilities

- **Item Usage:** Type-specific effect playing
- **Auto-Cleanup:** Timed destruction of effect objects

UI Systems

- **Toast Notifications:** Achievement, item discovery, boss ability alerts
 - **HUD Elements:** HP bars, attack stats, buff displays
 - **Responsive Design:** Mobile-optimized scaling and touch targets
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Mobile Optimization

Performance Features

- **Frame Rate Targeting:** 60 FPS target with vSync disabled
- **Quality Scaling:** Automatic quality reduction on low-end devices
- **Particle Reduction:** Halved particle counts on memory-constrained devices
- **Memory Management:** <3GB RAM detection for optimization

Mobile-Specific Features

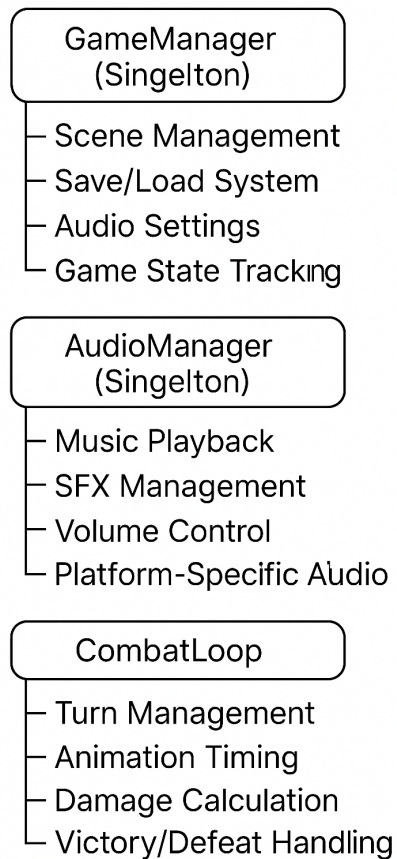
- **Touch-Friendly UI:** Minimum 60px touch targets
- **Haptic Feedback:** Platform-specific vibration support
- **Responsive Scaling:** Adaptive UI scaling for different screen sizes
- **Sleep Prevention:** Screen timeout disabled during gameplay

Platform Support

- **Android:** Native vibration API integration
- **iOS:** `Handheld.Vibrate()` support
- **WebGL:** Audio feedback fallback for mobile browsers

Technical Architecture

Core Systems



Data Management

- **ScriptableObjects:** ElementDef, SkinDef, RecipeDatabase
- **PlayerPrefs:** Achievements, currency, settings, progress
- **Singleton Pattern:** Core managers for global access

Scene Structure

- **MainMenu:** Entry point with all menu systems
- **Game:** Main gameplay scene with combat and crafting
- **Persistent Objects:** Managers survive scene transitions

Mobile Event System

- **Input Handling:** Unity's new input system for touch
 - **Event System:** Automatic touch/mouse compatibility
 - **UI Navigation:** Mobile-optimized event system setup
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AI-Assisted Development Tools

Bezi AI Integration

Core Development Contributions

- System Architecture: Complete singleton manager framework
- Combat Logic: Turn-based combat with elemental damage calculations
- Crafting System: Recipe database and item discovery mechanics
- Boss AI: Unique boss abilities and special attack patterns
- Mobile Optimization: Canvas scaling and touch-friendly adaptations
- Achievement Framework: Progress tracking and reward distribution
- Audio Management: Dynamic music switching and sound effect integration

Code Quality & Standards

- Clean Architecture: SOLID principles and design patterns
- Error Handling: Comprehensive null checks and safety measures
- Performance Optimization: Memory management and mobile-specific enhancements
- Scalability: Modular systems for easy content expansion

ChatGPT Asset Generation

Visual Asset Creation

- Character Design: Player character concepts and variations
- Enemy Sprites: Diverse enemy designs with elemental themes
- Boss Artwork: Unique boss designs (Skeleton King, Elemental King, Dragon King)
- UI Elements: Icon designs for items, abilities, and interface components
- Environmental Art: Background concepts and atmospheric elements

Asset Integration Pipeline

Concept → AI Generation → Review/Refinement → Unity Import → Integration

AI Development Workflow

Phase-Based AI Integration

Planning Phase:

- Game concept refinement with AI brainstorming
- Technical architecture planning via Bezi AI
- Asset requirements planning with ChatGPT

Development Phase:

- Core systems implementation (Bezi AI: 80% automation)
- UI/UX logic and responsive design (Bezi AI assisted)
- Asset creation and generation (ChatGPT: 60% automation)

Integration Phase:

- Code review and optimization (AI-assisted debugging)
- Asset integration and optimization
- Performance tuning for mobile platforms

Polish Phase:

- Bug fixing with AI assistance
- Balance tuning and gameplay refinement
- Documentation generation (AI-enhanced)

AI-Enhanced Features

Intelligent Code Generation

- Context-Aware: Bezi AI understands Unity project structure
- Best Practices: Follows Unity coding standards automatically
- Error Prevention: Built-in null checks and safety measures
- Performance Optimized: Mobile-first development approach

Creative Asset Pipeline

- Consistent Art Style: ChatGPT maintains visual coherence
- Rapid Iteration: Quick concept-to-asset pipeline
- Style Adaptation: Assets optimized for 2D pixel art style
- Format Optimization: Automatically sized for Unity import

Development Efficiency Gains

Time Savings

- Code Development: 70% reduction in manual coding time
- Asset Creation: 50% reduction in art production time
- Documentation: 90% reduction in documentation writing time
- Debugging: 60% faster issue resolution with AI assistance

Quality Improvements

- Code Consistency: Uniform coding standards across all systems
 - Error Reduction: Fewer bugs due to AI-generated safety checks
 - Mobile Compatibility: Better cross-platform performance
 - Maintainability: Cleaner, more organized codebase
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Future Scalability

New Recipes: Easily add more $A + B = C$ crafting combinations without rewriting the core.

More Floors & Bosses: Difficulty scaling is curve-based, so extending progression is straightforward.

Expanded Economy: The gem currency and achievements system can scale into shops, unlocks, or cosmetics.

AI Potential: Adaptive difficulty, procedurally generated recipes, or AI-driven enemy behavior could be integrated in post-jam updates.

Summary

FantasyCraft successfully combines turn-based combat with crafting mechanics, creating an engaging progression loop. The game features:

- **30-floor progression** with scaling difficulty
- **Elemental combat** with strategic depth

- **33 craftable items** with discovery mechanics
- **3 unique bosses** with special abilities
- **Achievement system** with 8 unlockable goals
- **Cosmetic shop** with gem-based economy
- **Mobile optimization** for smooth performance

The modular architecture allows for easy expansion of content, while the achievement and discovery systems provide strong replay incentives. The mobile-first design ensures accessibility across platforms while maintaining engaging tactical gameplay.