

EdVenture: The Legend of the Five Dragons

Design Document

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Description: In EdVenture, you are an adventurer who finds an artifact - the dragon amulet. The amulet used to contain five different dragon gems, but the gems have since been removed. The player's goal is to search for the five lost dragon gems, buried deep in five dungeons scattered throughout the world. As the player collects each gem, it is added to the amulet. Each dungeon has a certain level of amulet required, from 0-4 gems. After a gem is retrieved, it is added to the dragon amulet. When the amulet is complete with all five gems, the player is able to take on the final challenge.

Platform: Atari XL/XE line of computers (or 400/800 with at least 64K)

Language: 6502 Assembly

Technical Specifications:

- World map is procedurally generated, with 5 dragon dungeons (each with a picture stating which gems are needed), as well as a final dungeon, and fountain
- Dungeons are procedurally generated, using a modular approach - many different room types, connected together with doors.
- Maps can be variable sized, up to 128x128 tiles

Game Design:

- Five colors are used thematically throughout the game: white, black, red, blue, and gold
- Time moves only when the player steps. The game is paused any time the player isn't moving
- Skill-based system:
 - Four different skills:
 - Melee (depicted by a sword)
 - Defense (depicted by a shield)
 - Ranged (depicted by a bow)
 - Fortitude (depicted by a heart)
 - Player starts with a skill level of 1 for each skill
 - Skills have a maximum of 255 each

- The player gains experience points when defeating monsters. Every time the player gets enough experience points to gain a level, the player can choose where to spend that skill point
- Leveling can only be done at fountains
- Dungeons:
 - Each dungeon has a color associated with it, of the five colors
 - Dungeons consist of five floors, in which the floors get larger and larger, the deeper the player goes
 - Dungeon floors are procedurally generated from the initial world seed, and are generated at the start of the game. The placement of walls, doors, etc. will be fixed for that playthrough of the game
 - When entering a dungeon, the monsters and items are respawned
 - Doors come in two varieties: locked and unlocked. If the door is locked, it will need a certain key to open
 - Keys: Five different color keys that open corresponding doors will be generated along with the locked door at world generation time
 - Keys are one-time use, and disappear when the door is unlocked
 - Doors stay unlocked until the dungeon is re-entered
 - Dungeons will have a recommended level, in which the player will be warned if the challenge will be too great if they do not have enough skill points to meet that threshold
 - Dungeon levels:
 - White: 0
 - Black: 10
 - Blue: 20
 - Red: 30
 - Gold: 40
 - Each dungeon has a dragon on the bottom floor (locked behind a door), which, when defeated, will drop that dungeon's gem (each corresponding to the five colors)

- Treasure rooms: found behind locked doors, they will consist of a treasure chest and many more monsters than usual
- Dungeons can be re-played in order to gain more experience and skills, but the dragon will not respawn once it has been killed. A treasure room will spawn in its place
- Combat:
 - The player has hit points, the maximum of which is calculated from their fortitude level. (64 hit points per fortitude point, for a maximum hit points of 16k hit points)
 - Monsters are randomly placed in the dungeons, which will be chosen from a large pool, but will only have a possible 14 different monsters per dungeon level, except for the bottom floor, which will include a dragon, in which case there will be only 11 possible monsters.
 - Monsters will have the following attributes:
 - Name
 - Graphic
 - Melee / Defense / Ranged / Fortitude Skills - multiplied by the dungeon level
 - Speed (0 = non-moving, 1 = speed of the player (one tile), 2 = half speed (one tile every other tick))
 - Aggressiveness (0 = doesn't attack, 1 = will attack if the player is close by, 2 = will pursue for a few spaces, 3 = will pursue for many spaces, 4 = will never let up from chasing the player)
 - Dungeon level range (1-5)
 - Not all monsters can spawn in all dungeons. The dungeon level ranges determine where each monster can spawn. For example:
 - a skeleton might spawn in dungeon levels 1-3, and a gazer might spawn in levels 4-5. Some monsters might be able to spawn in every dungeon level, if the levels 1-5 are set for that monster
 - Attack rolls are performed as follows:
 - If melee:

- Advantage = Attacker's melee - Defender's defense
- If ranged:
 - Advantage = Attacker's ranged - Defender's defense
- To-hit roll:
 - Choose 10 random numbers between 1-10
 - Add advantage to each number
 - If the total is over 50, it's a hit, else it's a miss
- Damage roll:
 - Choose X random numbers between 1-10, where X is the melee or ranged skill
- If the player or monster is hit, subtract the damage roll from the corresponding hit points
- If the hit points drops to zero, the player or monster dies
- If the monster dies, it can drop one of the following: health potion, torch, or X gold coins
- If the player dies, the player will respawn at the world starting point, near the fountain

Graphics:

- Uses Antic mode 5 which is a 5 color large text mode
- Screen is 40 characters wide by 12 characters tall
- Tile-based system using 2x 4x8 characters per tile in Antic mode 5 (five colors possible)
- Each tile is 8x8 pixels
- To make there be an odd number of tiles vertically, 2 lines of Antic mode 4 (half-height text mode) is used for border and status messages
- The system uses 4 character sets:
 - Outdoor/Status A & B
 - Dungeon A & B
- The monsters are dynamically added to the dungeon character set when the dungeon floor has respawned, as there is not enough characters to add all of the monsters at once
- There are no monsters outside, so the monster space is used by characters to be able to print status messages on the screen

- The screen is comprised of two sections - on the left is the playfield, which is 11x11 tiles, and the right, which is 16.5x11 tiles, which holds status icons for health bars, skill levels, etc.
- The screen has a thin border all around, and one vertical border in the center
- Status messages are displayed within the top border temporarily

Icons (available in all character sets)

Description	Number of Tiles	Notes
Sword	1	
Shield	1	
Bow	1	
Heart	1	
Torch	1	
Gold	1	
Chest	1	
Health Potion	1	
HP (Label)	1	
XP (Label)	1	
Numbers	5	0-9 using half width characters
Left and Right Borders for HP/XP bars	1	
Screen border (vertical)	0.5	
Symbols	0.5	space
Gems	5	
Keys	5	
Amulet corners	4	Rounded
Health bar (5 states)	3	
XP bar (5 states)	2	
Bag	1	

Terrain (character set dependent)

Description	Number of tiles	Blocks LOS	Blocks movement	Charset
Wall	1	y	y	all

Floor	1	n	n	all
Water	1	n	y	all
Bridge	1	n	n	all
Doorway	1	n	n	all
Fountain	2	n	y	all
Door	1	y	y	dungeon
Light Trees	1	n	n	outdoor
Dense Trees	1	y*	n	outdoor
Passable mountains	1	n	n	outdoor
Impassable mountains	1	y	y	outdoor
Left and Right Door	2	y	y	outdoor
grass with variations	2	n	n	outdoor

Monsters (swapped in as needed)

Description	Number of Tiles
Giant Rat	1
Zombie	1
Skeleton (Melee)	1
Skeleton (Ranged)	1
Giant Bat	1
Snake	1
Goblin (Melee)	1
Goblin (Ranged)	1
Orc	1
Giant Spider	1
Ghoul	1
Mimic	1
Ogre	1
Slime Monster	1
Minotaur	1
Werewolf	1
Giant Scorpion	1
Owlbear	1

Ghost	1
Demon	1
Cyclops	1
Wyvern	1
Vampire	1
Gazer	1
White Dragon	4
Black Dragon	4
Blue Dragon	4
Red Dragon	4
Gold Dragon	4