Game Proposal: Dig Quixote

CPSC 427 - Video Game Programming

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Story:

Describe the overall game structure with a possible background story or motivation.

"In an era long past, there dwelt a man, a dreamer. From the earliest days of his youth, he felt confined by the narrow world in which he lived, a world his ancestors had known for generations. Born and raised in the depths of a secluded canyon, where his forebears had dwelt for centuries, with steep cliffs on either side that barred any egress, he yearned for more than the tales and dreams of the vast expanse beyond this imprisoned space. Firm in his conviction that the world's ends wove together in mysterious unity, he believed that with relentless perseverance in burrowing the depths, he would, in time, find himself on the opposite edge of our globe. And so, one fateful day, armed with nothing but his trusty pickaxe and the fire of his dream, he embarked on his grand odyssey..."

Technical Elements:

Identify how the game satisfies the core technical requirements: rendering; geometric/sprite/other assets; 2D geometry manipulation (transformation, collisions, etc.); gameplay logic/AI, physics.

Rendering:

Background: (static), can not interact.
Scenarios: Similar to containers, which have layers and layers of blocks, walls surrounding, cannot interact or break.

Basic UI: Some buttons, some information on the current game level, and times remaining to break earth.

Geometry/Sprites/other assets:

Player: Sprite
Blocks: Cubes with different appearance and characteristics. (e.g solid, gems, magma, etc.)

2D geometry manipulation:

Gem blocks can be pushed left or right by the player.

Gameplay logic:

Player actions:

1. Using the keyboard to control the movement of the player, the player can go left, right, or jump max 1 block high.
2. Players can use the pickaxe to break some blocks.

Pickaxe durability: In each level of gameplay, players have a limited number of times they can break the earthblock they want.

Rocks:

1. Can't be broken by the pickaxe or pushed by the player.
2. rock will fall down if there are no blocks in the position directly below.
3. the player can not move during the rock-falling period.

Special gemstones:

1. special gem has the prosperity of rocks.
2. There are special effects when three special gemstones are pushed next to each other(breaking all the blocks nearby etc.).

Next level: The player needs to reach the bottom layer to finish the current level of the game.

Audio:

Background music while the player is playing.
SFX while digging, breaking blocks, and triggering the traps.

Advanced Technical Elements:

List the more advanced and additional technical elements you intend to include in the game prioritized on likelihood of inclusion. Describe the impact on the gameplay in the event of skipping each of the features and propose an alternative.

- Special visual effects (Explosion …)
- Another mode (randomly generated blocks)
- More kinds of blocks: bombs, etc.
- More player movements.
- Other failure type, player dead, etc.

Devices:

Explain which input devices you plan on supporting and how they map to in-game controls.

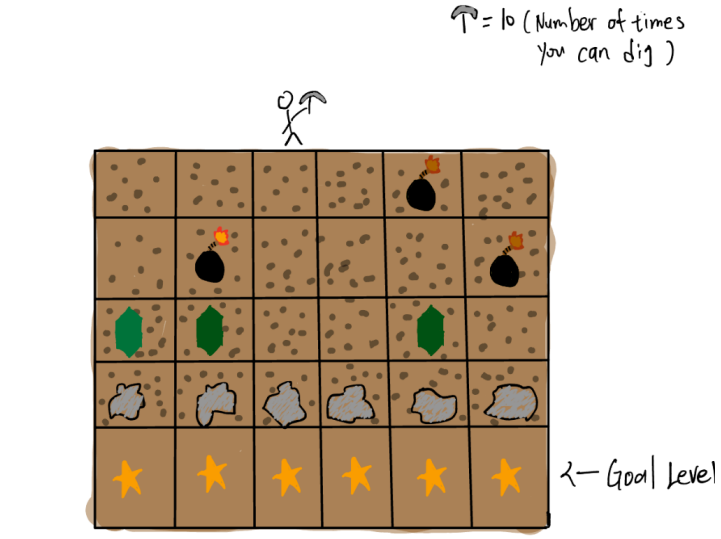
PC keyboards

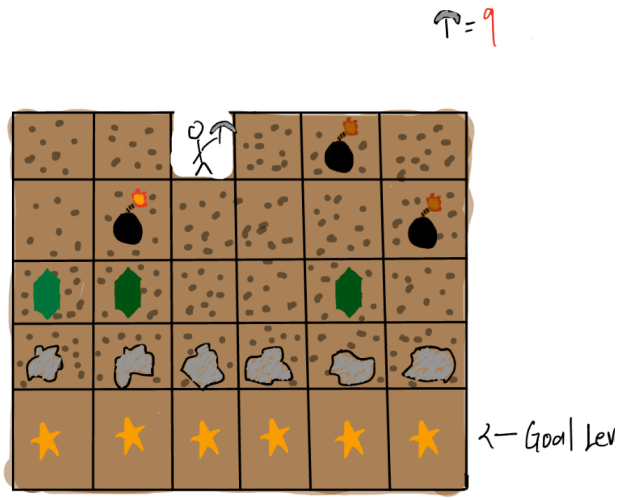
example:

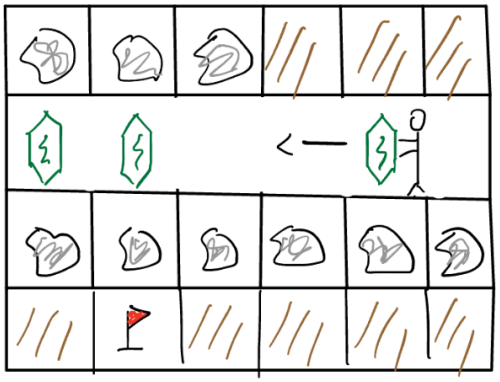
- w - move left
- e - move right
- space - jump
- d - dig
- f - push

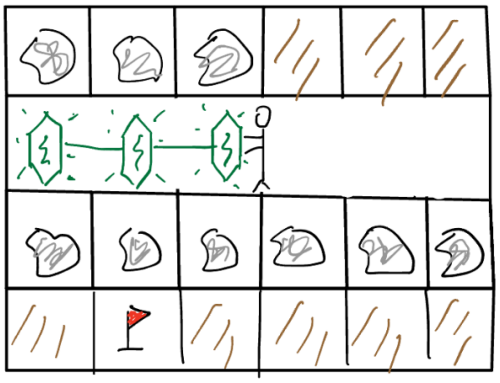
Concepts:

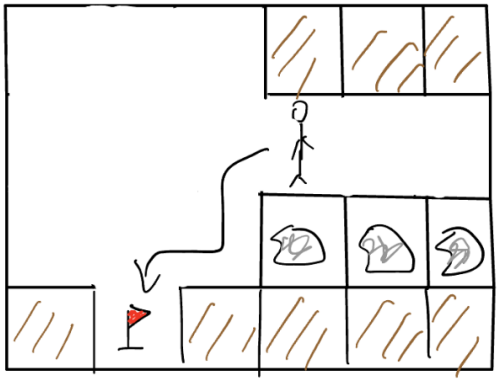
Produce basic, yet descriptive, sketches of the major game states (screens). These should be consistent with the game design elements, and help you assess the amount of work to be done.

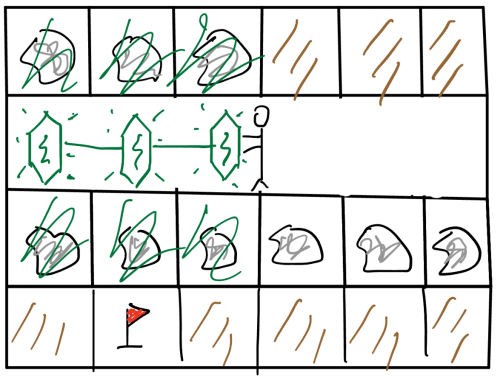


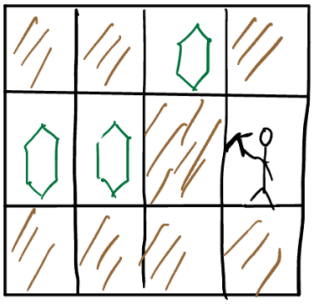


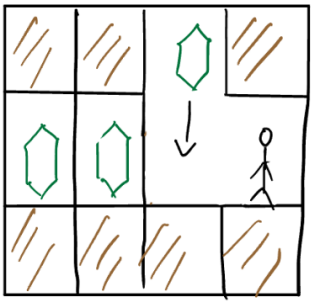


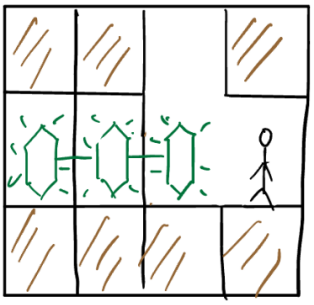












Tools:

C++ libraries we can use:

SFML,

SDL,

GLFW,

raylib

Team management:

Identify how you will assign and track tasks, and describe the internal deadlines and policies you will use to meet the goals of each milestone.

Weekly meeting:

we will hold a weekly meeting each Sunday at 7 p.m. The main task is to:

1. Check that the previous week's tasks have been completed.
2. Identify what is to be achieved in the new week (mainly features).
3. Each member will individually claim the task, based on workload.

Tasks:

1. tasks will be managed as GitHub issues.

2. each task will be issued to a single team member.

Internal deadlines:

All the tasks will be done three days before each milestone deadline.

We will use these three days to centralize testing. And for emergencies.

Development Plan:

Provide a list of tasks that your team will work on for each of the weekly deadlines. Account for some testing time and potential delays, as well as describing alternative options (plan B). Include all the major features you plan on implementing (no code).

Blue means fulfill if time allows.

Skeletal Game (Milestone 1, Oct 12th)

Week 1:(Sep 25 - Oct 1)

Gameplay:

Render&Animation:

- **Background:** Simple coloured background
- **Player:** Basic character geometry.
- **Blocks:** Simple block geometry.

Work on loading and rendering basic geometry

Week 2:(Oct 2 - Oct 8)

Continue working on loading and rendering basic geometry

Gameplay:

- **Player:** Basic player's movement (left, right) panning
- **Blocks:** Able to break a stone.

Render&Animation:

Week 3:(Oct 8 - Oct 12)

Debug and stable gameplay.

Minimal Playability (Milestone 2, Oct 30th)

Week 1:(Oct 13 - Oct 20)

Gameplay:

- **Player:** dig/break the block down/left/right
- Add gem block, get 3 gem blocks in a line will have effect

Render&Animation:

- **Player:** move animation
- Basic gemstone render.
- background sound.

Week 2:(Oct 21 - Oct 27)

Gameplay:

- **Player:** dig/break the block down/left/right
- Add gem block, get 3 gem blocks in a line will have an effect
- Basic tutorial/help
- design at least one game level.

Render&Animation:

- **Player:** move animation

Week 3:(Oct 28 - Oct 30)

- **Debug**

Playability (Milestone 3, Nov 20th)

Week 1: (Oct 30 - Nov 6)

Gameplay:

- Gravity of stone: stone will fall down if the solid which under that stone has been removed.
- Reloadability
- Another level map (deeper layer of Earth).

Render&Animation:

- **Blocks:** time-stepping animation (blocks diffused explosion)

Week 2: (Nov 7 - Nov 13)

Gameplay:

- Another level map.
- movement sound.
- One different kind of block

Render&Animation:

- **Background:** time-stepping animation (flowing magma).
- **Blocks:** time-stepping animation (blocks diffused explosion)

Week 3: (Nov 14 - Nov 20)

Focusing on memory management.

Maintain the game stability.

Final Game (Milestone 4, Dec 4th)

Week 1:(Nov 20 - Nov 26)

Gameplay:

- Add more level maps. (At least 2)
- Guideness UI for new players.

Week 2:(Nov 27 - Dec 4)

Gameplay:

- User experience
- Add or change features according to the report
- Add audio for player movement (footsteps).
- Add audio for gem effect & gem explosion.
- Add audio for round completion (like the classic winning audio in Final Fantasy).