# Game Proposal: Eggly Buddies

### CPSC 427 - Video Game Programming


## *Team Members:*

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## *Story:*

One day, you suddenly receive a mysterious egg in the mail. It hatches immediately as you open the package, and a little eggly creature emerges. You've only heard of such eggly creatures in books and fantasy stories. Now you get to take care of this creature and watch it grow up in your house.

Play minigames and perform actions to take care of your creature's needs. Influence its personality as it grows up and experiences different phases of life: from Baby to Toddler, Child, Teen, and Adult. Deal with surprise elements throughout its lifetime. After your buddy leaves (if it doesn't die within your care), it sends you a postcard detailing its fate. Did you do a good job raising it? The End.

## *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:

- 2D pixel art sprites

### Geometric/Sprite/Other Assets:

- 2D pixel art sprites
- Music/audio files from internet (free)

### 2D Geometry Manipulation:

- Colliders for room walls, your creature, objects and other structures/barriers
- Transformations
- Dragging creature between screens

- Buddy is animated using rotations and splines
- Buddy is made up of 3 random pieces, head, torso and legs

## Gameplay Logic/AI:

- Living Room - Main Scene
    - Displays creatures status via some kind of visual or UI
    - Buddy is animated using rotations and splines
    - Buddy is made up of 3 random pieces, head, torso and legs
    - Buddy will randomly walk around, sit down, pick something up
- Kitchen Scene
    - Feed your creature by catching food in its mouth (Gravity & Collision Detection)
- Backyard Scene
    - Garden: plant and grow food
    - Play with your creature to keep it happy by playing table tennis with it
        - Collision Detection
    - Fishing (extra)
- Bedroom Scene
    - Help your creature fall asleep by counting sheep with it
        - Gravity and Collision Detection
        - Infinite runner where a sheep needs to jump over obstacles
- Bathroom Scene
    - Bathe your creature to clean it
        - Collision Detection
    - Creature can relieve itself
- Mail Envelope icon (top right UI)
    - Receive random packages at random intervals which contain things like food, hats, furniture
    - Random events influenced by personality occur that need you to select a course of action
- Transition between scenes
    - Click on the left/right/top side of each scene to scroll to the next one
    - Your creature can walk in between scenes as needed (for example, after playing outside, the creature is hungry so it moves to the kitchen)
    - Dragging creature between screens

Other information:

- Personality and Creature Status
    - Your creature keeps track of different personality traits
    - It will influence what type of food or activities it likes
    - It will influence what kind of hat it likes to wear

    - Life stages: Baby → Toddler → Child → Teen → Adult → Leaves house (and ad

Physics

- Collision Detection
- Gravity
- Kinematics with basic responses
- Kitchen Scene
    - Feed your creature by catching food in its mouth (Gravity & Collision Detection)
- Backyard Scene
    - Play with your creature to keep it happy by playing table tennis with it
        - Collision Detection
- Bedroom Scene
    - Help your creature fall asleep by counting sheep with it
        - Gravity and Collision Detection
        - Infinite runner where a sheep needs to jump over obstacles
- Your creature can walk in between scenes - Collision detection with boundaries of scenes

## *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.

- Fishing scene behind backyard - catch fish to cook and eat
    - If skipped, fish will not be included as a food item - not much impact
- Extended personality of creature - eg. it could resist your attempts to drag it between scenes
    - If skipped, behaviour of creature will be simpler
- Shop + currency system to buy cosmetics
    - If skipped, minigames will not award currency, and cosmetics will not be purchasable but can be randomly obtained through mail

## *Devices:*

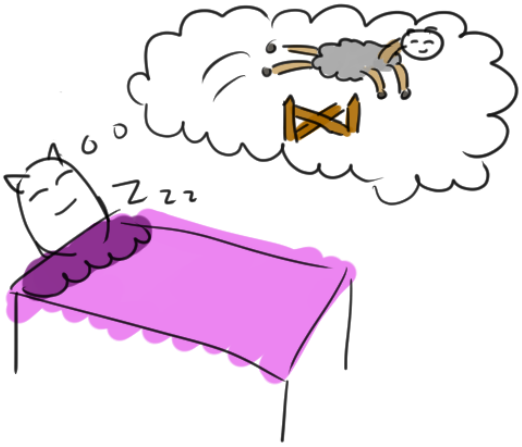
Explain which input devices you plan on supporting and how they map to in-game controls.

- Desktop, use mouse, keyboard (minigames/activities)

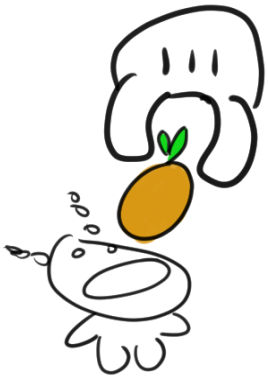
## *Concepts:*

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.

Your creature standing in the living room!

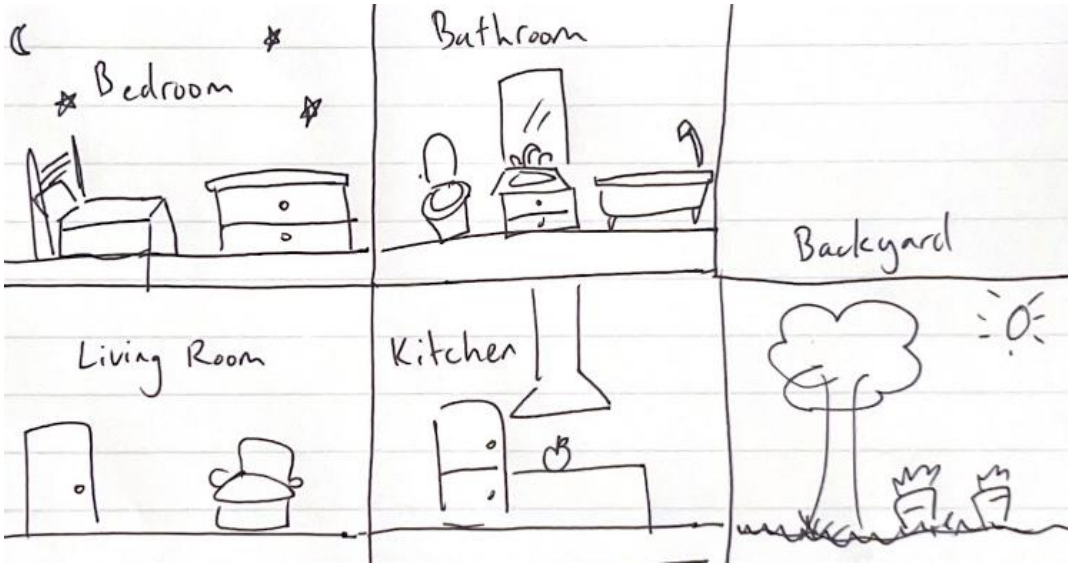


Bedroom scene: The counting sheep activity where you help your creature fall asleep.



Feeding your creature!

Mailbox UX: you receive a new gift in the mail, and your creature can interact with it.




The different rooms you'll be able to scroll through

## *Tools:*

Specify and motivate the libraries and tools that you plan on using except for C/C++ and OpenGL.

- Start from A1 template
- Pixelart maker
- Free audio files from internet
- OpenAI GPT4 language prediction model (to write final letter from creature after it leaves home)

## *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.*

- Github Issues to assign and track tasks
- Milestone 1: Whole team works on main scene to set it up
- Each member works on one scene each separately after setting up main scene, using the main scene as a template

## *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).

### *Skeletal Game*

Week 1

- Layout basic class structure
- Create main scene
- Base sprite assets

Week 2

- Basic physics / collision detection for creature colliding into walls and objects in the room
- Be able to navigate between scenes
- Keyboard / mouse control of character sprite

Week 3

- Basic mechanics for sleeping minigame (infinite runner)
- Background music / sound effects

### *Minimal Playability*

Week 1

- Complete transitions between scenes (add new sprites and background assets for new rooms)
- Add logic for when to move to a different scene (e.g. taking a bath after playing outside)
- Add more minigames to scenes

Week 2

- Add classes to track creature personality and status (e.g. hunger, tiredness, etc)
- Basic user tutorial / help menu → access from mailbox screen (e.g. incoming mail to teach you what to do)
- Inventory system/interacting with items using mouse

## *Playability*

Week 1

- Implement saving of game state + reloading
- Menu / UI to display personality and status
- Random events differ based on personality and status
- Continue working on minigames

Week 2

- Finish minimally playable minigames for each scene (backyard, bedroom, garden, living room / main scene, bathroom)
- Smooth transitions between scenes
- Finish creature animations

## *Final Game*

Week 1

- Advanced gameplay: features such as advanced decision-making mechanisms based on goals (path planning etc)
- User testing + bug fixing!!

Week 2

- Finalize sound effects for all interactions
- Additional elements and details as needed