Ethicode City Game Report
UG-3 Team-2

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Github Repo: https://github.com/Shiva9361/EthicodeCity
Game Demonstration:
🎬 Ethicode City Demonstration - Made with Clipchamp_1737897412342.mp4

Contributions :

1. CS22B057(B) SHIVADHARSHAN S :
   a. Managers for Road, Houses and structures
   b. Placement Manager to place objects on the map
   c. Input Manager for capturing inputs
   d. Camera controller with zoom, rotation and dragging
   e. Dragdrop Manager to allow dragging and dropping of objects
   f. Tree extractor to make trees of terrain destructible from building
   g. Blinking of buildings being built and destroyed
   h. Integration of dialogues into the main Scene
   i. Building info panel with option to destroy
   j. Dynamic addition of building data into panels
   k. Inventory for AI and money
   l. UI controller for forwarding the button actions to the backend
   m. Event handlers for all five events

2. CS22B040 P AKILESH :
   a. Designed the game storyboard to outline the narrative flow and key scenes.
   b. Searched for relevant assets on the Unity Asset Store and integrated them into the game to enhance the visuals and storytelling.
   c. Created the terrain for the game and added a background environment, including elements like the sky, to create an immersive atmosphere.

    d. Prepared documentation detailing the game's design, development process, and features.

    e. Created the demonstration video showcasing the game's key features and gameplay.

3. CS22B028 JOHRI ANIKET MANISH :

    a. Initial implementation of base game on which the current game is built upon.

    b. EarthquakeMovement Manager for showing earthquake effects.

    c. Inventory Manager for Happiness Meter.

    d. Integrated character voices into DialogueManager and SpeechManager. (Works only for Windows System).

    e. Panel for handling the pause state of the game.

4. CS22B051 VIRAMGAMA JAIMIN PIYUSHBHAI :

    a. Frame by Frame Animation for the opening scene

    b. Outlined various components for the storyline

    c. Added the canvas for comments mini game

    d. Styling for various components

    e. Added the sounds for the game as well as the script for button click sounds

5. CS22B045 SUDDULA VINEETH RAGHAVENDRA :

    a. Worked on the storyline of the game.

    b. Wrote dialogues for each scene.

    c. Imported suitable images.

    d. Added animations, key controls for the dialogueBox.

    e. Worked on testing the game.

6. CS22B016 CHATSE SIDDHANT MADHUKAR :

    a. Dialogue Manager for DialogueBox.

    b. Dialogue Setup for DialogueBox.

    c. Worked on Storyline.

    d. Worked on Testing of the Game.

    e. Documentation.

Game Features :

The game begins in a city devastated by unforeseen circumstances. The previous mayor has been arrested, leaving the new mayor (the player) responsible for rebuilding the city from scratch. With the help of the city's architect, the player must not only rebuild but also uncover the reasons behind the city's collapse.

The architect provides the following instructions:

1. Introduction:
    ○ "You are this city's new mayor and have to build it again as, due to some unforeseen circumstances, the entire city has collapsed, and the old mayor has been arrested. We need to find out why the city collapsed and build the city from scratch."
2. Building Instructions:
    ○ "These are the available buildings which can be built. The government has allotted you $ 1000/- and you need to build the city. The time taken by each building and their costs are shown below them."
3. Factories and AI Tokens:
    ○ "These are the factories that should be built. As you build more factories, they will generate AI tokens that can be used to reduce the time required to construct other buildings. However, these tokens come with their risks and consequences."
4. Ethics System:
    ○ "As you progress and build various parts of the city, you will encounter different ethics displayed on the right side of the screen. Collecting these ethics will earn you reward points, which can unlock more buildings. The game ends once all the ethics are found."

Ethics Incorporated :

1. Code Documentation
2. Well Commented
3. AI-Generated Code
4. Code Breaching

5. Code Testing and Quality

Gameplay Mechanics :

1. AI and Banks:
   - If a bank is built using AI, a danger symbol may appear after its completion, indicating that the bank has been robbed due to AI-related code breaches.
   - Building the bank with AI takes only 1 second to entice the player to use AI, compared to the standard 200 seconds.
   - The bank generates revenue for the city, adding $ 100 to the mayor's account every 10 seconds.
2. Natural Disasters:
   - After constructing a minimum buildings, a warning appears: "In nearby areas, an earthquake is detected and may affect your city soon."
   - During the earthquake, all buildings constructed with AI collapse, demonstrating that they were not adequately tested or quality-assured.
3. Citizen Happiness Meter:
   - The happiness of the city's citizens is displayed through a "Citizen Happiness Meter," which increases as the player constructs more buildings.
4. Factory Efficiency and Code Commenting:
   - Factories operate at 50% efficiency if the code is not well-commented.
   - To improve efficiency, players must play a mini-game: the Debugging Challenge.
     - Example snippets for players to comment:
       - Code: `totalTokens = productionRate * 2;` Player Comment: "Calculate the total AI tokens generated based on production rate."
       - Code: `if (powerSupply < 50) { shutdownFactory(); }` Player Comment: "If the power supply is less than 50%, shut down the factory to prevent damage."

■ Upon providing a valid comment, the system acknowledges: "Ok, well commented, your factory efficiency has improved by 25%."

Key Features Summary :

- Gameplay Elements:
    - Rebuild the city using a limited budget.
    - Utilise AI tokens with caution due to associated risks.
    - Manage ethics, citizen happiness, and documentation.
- Mini-Games and Challenges:
    - Debugging Challenge for factory efficiency improvements.
- Dynamic Events:
    - Earthquakes and AI-related consequences add realism and strategy.

Conclusion :

The game integrates strategy, ethics, and dynamic challenges to provide a unique experience. As the player balances the benefits and risks of AI, manages resources, and uncovers ethics, they pave the way to rebuilding a vibrant and sustainable city.