Learning objectives

Game design

Game design is the process of creating the content, structure and the rules of a game, encompassing the mechanics, story, systems and player interactions. It involves both creative and technical aspects, such as storytelling, character creation, level design, and the overall gameplay experience. Game design combines creativity with technical knowledge, making gameplay engaging, balanced and enjoyable.

In the game "Flappy Potter" the player controls Harry as he navigates through magical plant obstacles while collecting power-ups to boost his abilities.

1. **Game objective and concept**:
   - The core gameplay in FlappyPotter is for the player to control Harry through obstacles, enhancing engagement through continuous actions.
   - The main menu offers entry points for the player, allowing them to start the game, view instructions, read the backstory, or exit the game.
   - The gameover panel provides a restart option or a way to return to the main menu.
   - The MenuPanel and GameOver panel overall provides users with clear navigation.

2. **Game Flow and Mechanics**:
   - Gravity affects Harry's vertical movement, while the obstacles and the power-up move horizontally to create the illusion of forward motion
   - The game checks for collision between Harry and the plants or the power-uops. If harry hits a plant, he loses a life and respawns. If Harry's lives reach zero, the game ends, and a high score is recorded. The game over panel is displayed, allowing players to restart or redirect to the main menu.

3. **Game Progression and difficulty Scale**:

   o The difficulty of the game increases with scores by adjusting plant height and decreasing the opening space between the plants

   o Plant colors indicate the different stages of difficulty of the game.

4. **Code structure**:

   o The use of classes encapsulates different elements, allowing easy updates displaying the object oriented approach.

   o The timer objects manage the game refresh rate, obstacle generation, and countdowns, making game play smooth.

5. **Audio and Visual design**:

   o The game design incorporates thematic elements like background image, character image and background music adds to the immersion bringing the player into the world of Harry potter.

Resources:

- https://www.nuclino.com/articles/video-game-design
- https://en.wikipedia.org/wiki/Game_design
- https://elvtr.com/blog/the-fundamentals-of-game-design