

Space Pilot Design Document

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Data Class:

The Data class stores data on all the images used in the game.

Attributes:

- **spaceship**: An array of Image icons for different spaceship orientations.
- **rotatedSpaceship**: An array of images for rotated spaceship images.
- **life**: Image icon for spaceship life.
- **star**: Image icon for stars.
- **LandingSign**: Image icon for the landing sign.

Methods:

- **rotateImage**: Rotates a given image.

GamePanel Class:

The GamePanel class provides the game panel.

Attributes:

- **ThrustSpeed, xComponent, yComponent**: Variables for spaceship movement.
- **Angle, direction**: Control the direction of the spaceship
- **invincibleTime**: Prevent the spaceship destroying immediately after reconstructing, 3 seconds for each crash.
- **currentLevelScore**: Tracks the score for the current level.
- **colorMap**: 2D array representing the pixel game map.

- **positionOfStar**: Array of Point objects representing star positions.
- **timer**: Timer for game updates.

Methods:

- **rotateImage**: Rotates a given image.
- **decorateColorMap**: Decorates the game map based on the current game level.
- **paintComponent**: Draws the game components on the panel.
- **keyPressed**, **keyReleased**, **keyTyped**: Handles keyboard input.

GameDialog Class:

The GameDialog class provides the window for win and loss scenarios.

Methods:

- **actionPerformed**: Handles button click events in the dialog.

MenuPanel Class:

The MenuPanel class controls the UI like the life, fuel, level, and score of the game.

Attributes:

- **Lifecount**: An integer representing the number of lives the player has.
- **LifecountPaint**: An integer representing the current number of lives to be displayed.
- **changeLifecountStatus**: A boolean indicating whether there is a change in the life count.
- **FuelAmount**: An integer representing the initial amount of fuel for the player.
- **gameLevel**: An integer representing the current level of the game.

- **Score:** An integer representing the player's score.
- **fuelBar:** A MyJProgressBar representing the fuel bar.
- **menuTimer:** A Timer for handling menu-related timing events.
- **LifeRemaining:** A JLabel displaying the remaining lives.
- **TotalScore:** A JLabel displaying the total score.
- **Fuel:** A JLabel displaying the remaining fuel.
- **GameLevel:** A JLabel displaying the current game level.

Method:

- **updateGameLevel:** Updates the displayed game level, decorates the color map in the GamePanel, and adjusts the fuel bar maximum.
- **updateFuelAmount:** Updates the displayed fuel amount.
- **updateTotalScore:** Updates the displayed total score.
- **updateChangeLifecountStatus:** Sets the life count status to true.

Space_Pilot Class:

The class sets up the basic structure of the game.