Drone Game Documentation

Welcome to the Drone Game documentation. This document provides an overview of the game, its components, and how to interact with it. Whether you're a player looking to understand the game mechanics or a developer interested in how it's built, this guide has you covered.

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# 1. Introduction

The Drone Game is an interactive web-based game where you control a drone on a grid. Your objective is to navigate the drone, rotate it, and even simulate attacks. The game provides a canvas for visualization and buttons/keyboard shortcuts for user interaction.

# 2. Game Components

## Canvas

The game canvas is where all the action happens. It's an HTML **<canvas>** element with a grid layout that represents the game world. The grid consists of cells, and the drone can move within these cells. The canvas is initialized with a default size of 10x10 cells.

## Drone

The drone is the main character of the game. It's represented by a square image that can move, rotate, and simulate attacks. The drone has the following attributes:

* **Position**: It has an (x, y) position on the grid.
* **Direction**: It can face north, south, east, or west.
* **Images**: Different images represent the drone facing each direction.
* **Status**: It can be active or inactive.

# 3. User Interaction

## Buttons

The game provides several buttons to interact with the drone:

* **Place**: Places the drone on the grid.
* **Move**: Moves the drone one cell in the direction it's facing.
* **Left**: Rotates the drone 90 degrees to the left.
* **Right**: Rotates the drone 90 degrees to the right.
* **Report**: Provides a report of the drone's current position and direction.
* **Attack**: Simulates an attack action.

## Keyboard Shortcuts

You can also control the drone using keyboard shortcuts:

* **Enter**: Places the drone on the grid (same as the "Place" button).
* **Arrow Left/A**: Rotates the drone 90 degrees to the left (same as the "Left" button).
* **Arrow Right/D**: Rotates the drone 90 degrees to the right (same as the "Right" button).
* **Spacebar**: Simulates an attack action (same as the "Attack" button).
* **Arrow Up/W**: Moves the drone one cell in the direction it's facing (same as the "Move" button).

## Settings

The Settings Icon just provides a user with an overview of what each button does, with the shortcut in brackets right next to the buttons name

# 4. Game Logic

* The drone starts at the top of the grid, facing north.
* You can only move the drone within the grid boundaries (11x11 cells).
* The drone can rotate left or right and move in the direction it's facing.
* When you attack, an explosion may occur at the target position, but the drone must have enough space to attack safely.

# 5. Feedback

The game provides feedback on your actions. This feedback is displayed in the "Feedback" popup at the top of the game canvas. It informs you about successful actions, errors, or general game information.

# 6. Developer Information

## Code Structure

The game is built using HTML, JavaScript, and the HTML5 **<canvas>** element. The key components include the canvas, the drone class, event listeners, and functions to control the drone's actions.

## Customization

Developers can customize the game by modifying the code. You can change the grid size, unit size, and image paths. Additionally, you can adjust the game logic or add more features to the drone.

# 7. Conclusion

The Drone Game is a fun and interactive web-based game where you can control a drone and explore its actions. Whether you're a player or a developer, this documentation provides insights into how the game works and how to interact with it. Have fun exploring the game and customizing it to your liking!