Obstruction

A Python implementation of the classic paper-and-pencil game *Obstruction*, developed as part of the *Introduction to Computer Science (CS-UH 1001)* course at NYU Abu Dhabi in Spring 2024.

Objective

Obstruction is a turn-based, two-player game played on a 2D grid. Players alternate placing their checkers (X, 0, etc.) on unoccupied spaces. After a move, all adjacent cells are "blocked" (marked with #). The player unable to make a move loses the game.

Features

- Fully text-based interface in the terminal.

- Supports dynamic board sizes (default: 6x6).

- Configurable number of players (up to 5).

- Uses clear, modular functions for:

    - Input validation

    - Move handling

    - Board display

    - Neighbor blocking

- Randomized first player selection.

- Game ends when no more legal moves are possible.

Files

- `Obstruction.py`: Main source code file containing the game logic.

- `READ ME Obstruction.pdf`: Assignment brief and specifications.

Getting Started

Prerequisites

- Python 3.x

- Unix/Linux terminal (recommended)

Running the Game

1. Open a terminal.

2. Navigate to the directory containing the script.

Run:

```
python3 Obstruction.py
```

Controls

- Players take turns entering a coordinate like C3 (column letter followed by row number).

- Invalid or occupied inputs prompt an error message and retry.

Configuration

To change the board or player settings, modify the following constants at the top of `Obstruction.py`:

```
NUM_ROW = 6
NUM_COL = 6
```

```
NUM_PLAYERS = 2
```

- Maximum board size: 9x9

- Minimum board size: 4x4

- Maximum players: 5 (`['X','O','M','N','P']`)

Assignment Highlights

This project demonstrates core concepts in Python:

- Working with lists and loops

- String manipulation

- Conditional logic

- Game state management

- Modular programming