

Playful AI: Intelligent Board Game Opponents and Advisors

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Introduction and Overview of Snake and Ladder Bot Game Project

Introduction: The Snake and Ladder Bot Game is a Python-based digital version of the traditional board game. It uses a graphical user interface (GUI) built with Tkinter, where players roll a virtual dice to advance on the board while encountering snakes and ladders. The game follows the classic rules.



- Technology Used in Snake and Ladder Bot GameThe game is developed using the following technologies:Python 🐍 – The core programming language for implementing the game logic.
- Tkinter 🎨 – Used for building the Graphical User Interface (GUI).Random Module 🎲 – Helps in generating random dice rolls (1-6).
- Object-Oriented Programming (OOP) 🏠 – Helps in managing players, dice, and board interactions efficiently.Reason for Selecting a Bot-Based Snake and Ladder GameAutomation & AI 🤖 – The game can be enhanced with AI bots to play automatically, making it engaging even in single-player mode.



Output:

The image shows a Python IDE on the left and a game window titled "Snake and Ladder Game" on the right.

IDE Screenshot:

- File Explorer:** Shows the project structure with files `s.py` and `board.py`.
- Code Editor:** Displays the `board.py` file with the following code:

```
74 Frame(root)
75 pady=20)
76
77 e "Roll Dice" button with fun design
78 = tk.Button(frame, text="Roll Dice", command=roll_dice, fo
79 .grid(row=0, column=0, padx=10, pady=10)
80
81 label to display the dice roll result
82 = tk.Label(frame, text="Dice Roll: ", font=("Arial", 14), f
83 grid(row=0, column=1, padx=10, pady=10)
84
85 label to display the player's current position
86 label = tk.Label(frame, text=f"{player_names[current_player
87 label.grid(row=1, column=0, columnspan=2)
88
89 label to display status messages (e.g., "Congratulations",
90 l = tk.Label(frame, text="", font=("Arial", 12), fg="navy b
91 l.grid(row=2, column=0, columnspan=2)
92
93 label to display whose turn it is
94 = tk.Label(frame, text=f"{player_names[current_player]}'s t
95 grid(row=3, column=0, columnspan=2)
96
```
- Terminal:** Shows the command to run the game:

```
PS C:\Users\jangi> & 'c:\Users\jangi\AppData\Local\Microsoft\Windows
1-win32-x64\bundled\libs\debugpy\launcher' '49726' '--' 'c:\Users\jan
```

Snake and Ladder Game Window:

- Roll Dice Button:** A green button labeled "Roll Dice".
- Dice Roll:** The text "Dice Roll: 5" is displayed.
- Player 2 Position:** The text "Player 2 Position: 6" is displayed.
- Snake Bitten:** The text "Player 2 got bitten by a snake!" is displayed.
- Player 1's Turn:** The text "Player 1's Turn" is displayed.
- Game Board:** A 10x10 grid of squares numbered 1 to 90. The squares are colored as follows:
 - Row 1: 1 (blue), 2 (white), 3 (white), 4 (white), 5 (red), 6 (red), 7 (white), 8 (red), 9 (white), 10 (white)
 - Row 2: 11 (red), 12 (white), 13 (white), 14 (white), 15 (blue), 16 (green), 17 (green), 18 (green), 19 (green), 20 (green)
 - Row 3: 21 (green), 22 (green), 23 (green), 24 (green), 25 (green), 26 (green), 27 (green), 28 (green), 29 (green), 30 (green)
 - Row 4: 31 (green), 32 (green), 33 (green), 34 (green), 35 (green), 36 (green), 37 (green), 38 (green), 39 (green), 40 (green)
 - Row 5: 41 (green), 42 (green), 43 (green), 44 (green), 45 (green), 46 (green), 47 (green), 48 (green), 49 (green), 50 (green)
 - Row 6: 51 (green), 52 (green), 53 (green), 54 (green), 55 (green), 56 (green), 57 (green), 58 (green), 59 (green), 60 (green)
 - Row 7: 61 (green), 62 (green), 63 (green), 64 (green), 65 (green), 66 (green), 67 (green), 68 (green), 69 (green), 70 (green)
 - Row 8: 71 (green), 72 (green), 73 (green), 74 (green), 75 (green), 76 (green), 77 (green), 78 (green), 79 (green), 80 (green)
 - Row 9: 81 (green), 82 (green), 83 (green), 84 (green), 85 (green), 86 (green), 87 (green), 88 (green), 89 (green), 90 (green)

Summary of Snake and Ladder Bot Game Project

The Snake and Ladder Bot Game is a Python-based digital version of the classic board game. It features a graphical user interface (GUI) built using Tkinter, allowing players to roll a virtual dice and navigate a 10x10 board while encountering snakes and ladders. 🎯

Key Features:

- ✅ Graphical Board: A visually interactive board for player movement.
- ✅ Automated Dice Rolling: Simulated dice rolls using Python's random module.
- ✅ Snakes & Ladders Logic: Players move up ladders and down snakes automatically.

Thank-you

