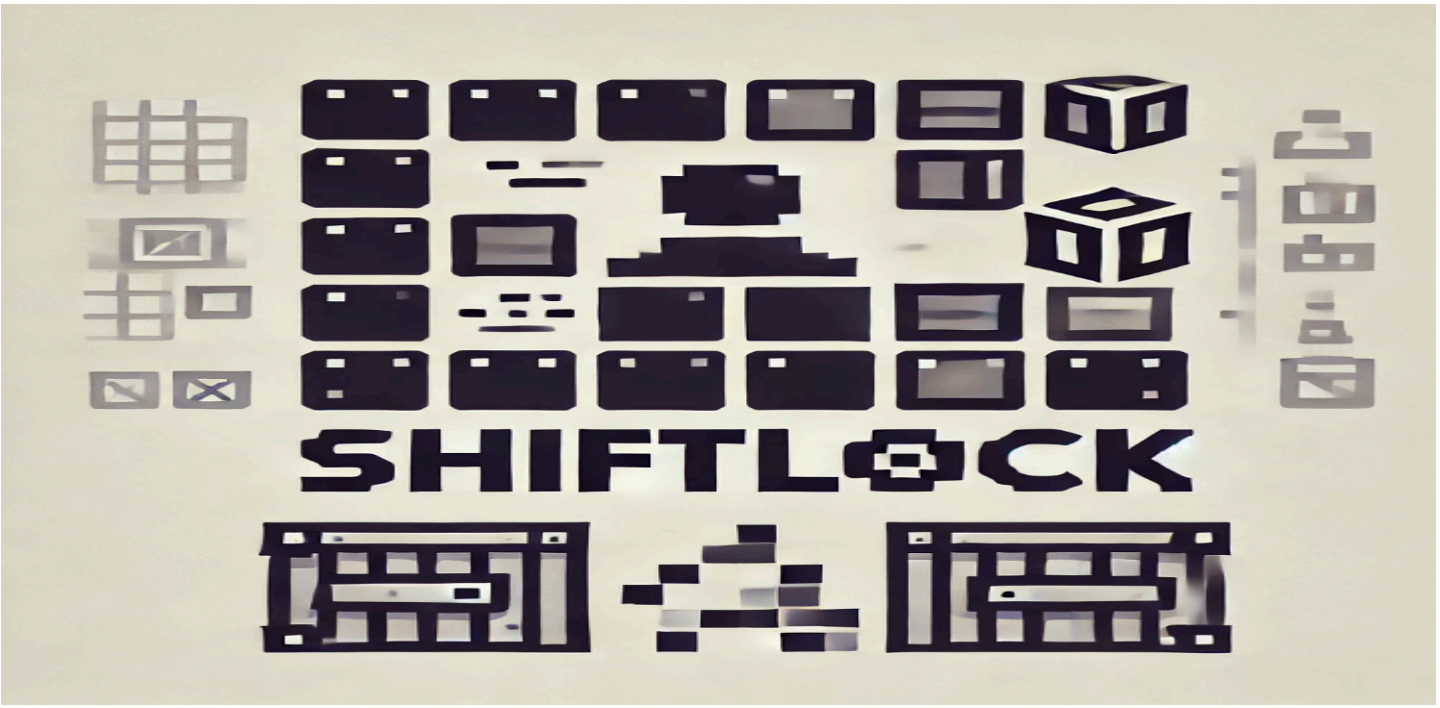
Shift Lock



Playing ShiftLock: Instructions and Tips

Introduction:

Welcome to **ShiftLock**, an engaging puzzle game inspired by the classic rules of Sokoban and enhanced with exciting new features. Your goal is to push boxes to their designated target areas within a closed board. The game supports multiple players, allowing you to compete with friends for an enjoyable experience. This guide will help you get started and understand the gameplay mechanics of **ShiftLock**.

How to Start:

To play ShiftLock, you'll need to use CPUlator, a program that allows you to run the game.

- **Open CPUlator:** Click on the following link to open CPUlator: CPUlator RISC-V RV32 System Simulator (01xz.net)

- **Load the Game File:**
  - Once CPUlator is open, click on the blue "File" icon in the top bar of the screen.
  - Select "Open." This will bring up a file explorer window showing your computer's files.
  - Navigate to the folder where you downloaded or saved the ShiftLock game file, usually in your Downloads folder.
  - Click on the ShiftLock game file, then press the Open button to load the game.

- **Launch the Game:**
  - Once the game file is loaded in CPUlator, click the gray "Compile and Load" button located near the left side of the top menu bar.
  - After clicking the "Compile and Load" button, click the gray "Continue" button located above it in the top menu bar.

- **Play the Game:** After you press the Continue button, the game will be displayed in the console (also known as the Terminal). To play, you need to enter your input in the terminal section located on the right side of CPUlator.

- The register section on the left, the devices list section on the bottom right, the settings and message section at the bottom, and the text inside the editor section of CPUlator are not essential, so you may ignore them.

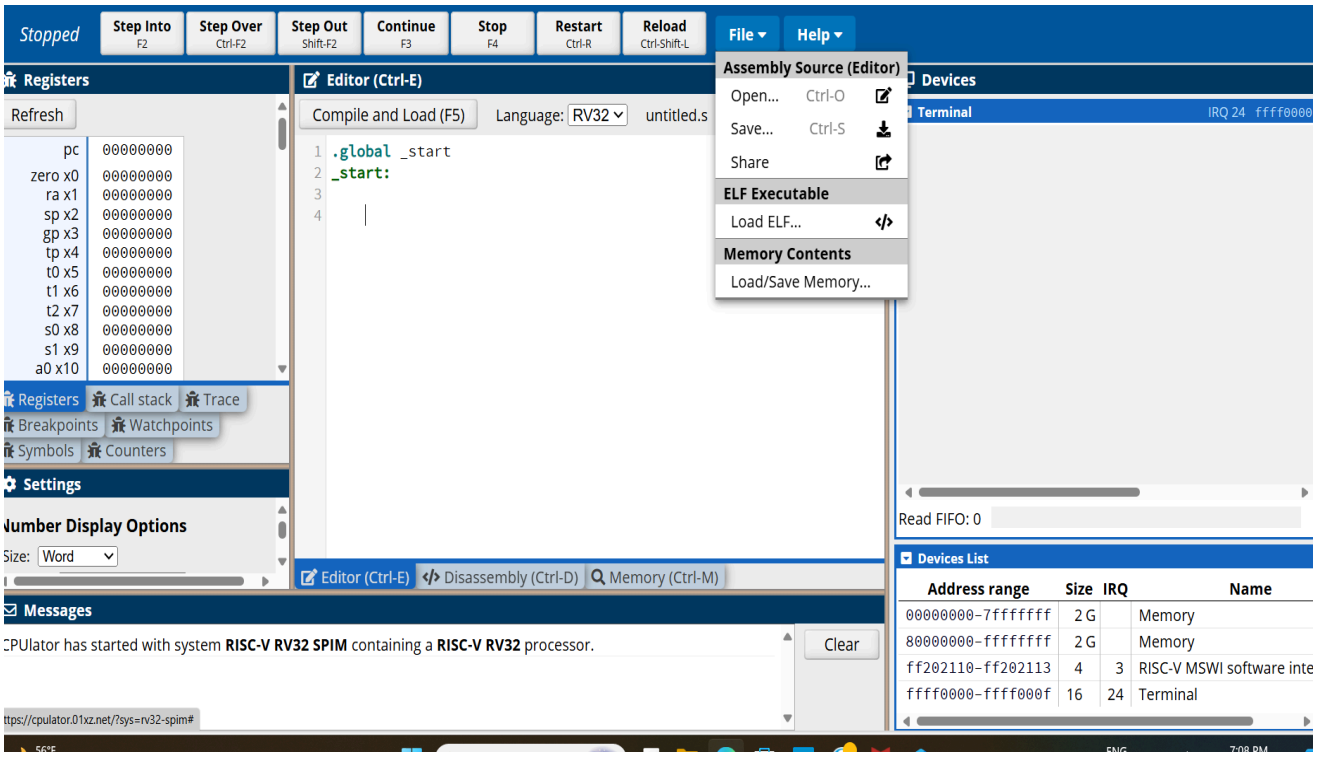


Figure 1.1: CPUlator Interface

Starting the Game

- When the game begins, a welcome message will appear in the terminal, and you'll be prompted to enter the number of rows and columns for the game grid. Both the rows and columns must be between 5 and 255. The number of rows defines how many rows, including the walls, will be on the board.

- **Important Note:** For columns greater than 100, CPUlator may not display the game walls correctly due to its limitations. To avoid this issue, we recommend choosing a column number between 6 and 100, while the number of rows can still range between 6 and 255.

- After selecting the grid size, you will be asked to specify the number of players. Enter an integer greater than or equal to 1. If you're playing alone, simply enter 1.

- Once you've entered the number of players, the game board with your chosen rows and columns will appear on the screen.

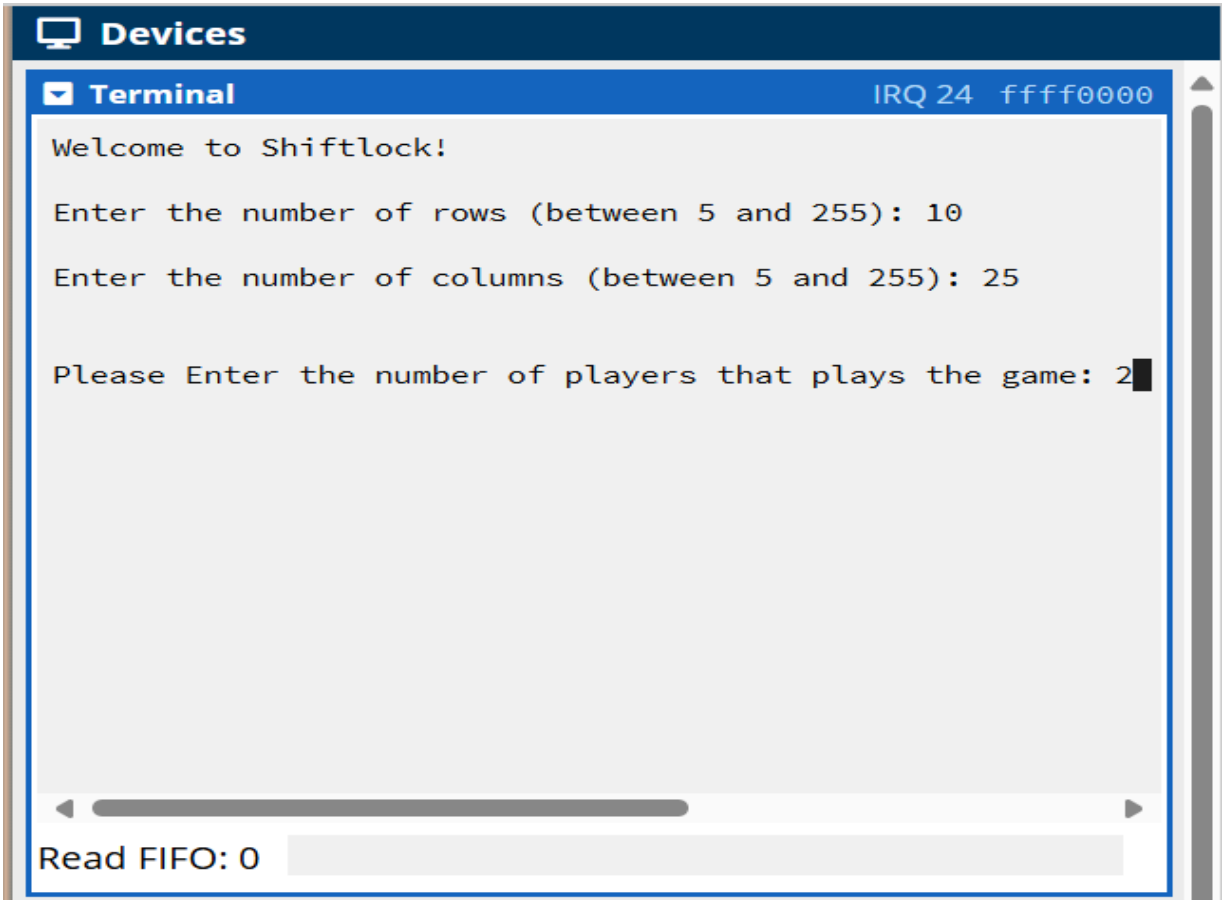


Figure 1.2: CPUlator Console with Welcome Message and Grid/Player Prompts.

Game Components

The game consists of the following elements:

- **Character (@):** Controlled by the player to move within the game.
- **Box (%):** Moved by the character towards the target location.
- **Target (X):** The destination where the box must be placed.
- **Walls (#):** Define the boundaries of the game board.

Each player must move the box to the target to win the game.

Character Movement

Players can move their characters in one of four directions by entering the following commands in the terminal:

- **Up:** Type 1 and press Enter.
- **Down:** Type 2 and press Enter.
- **Left:** Type 3 and press Enter.
- **Right:** Type 4 and press Enter.

Game Options

- Players can enter 5 and press Enter to restart the game. (Excluding when choosing the number of players)
- Players can enter 9 and press Enter to exit the game (Only works when playing the game)

Gameplay

- **Game Setup:** After entering the number of rows, columns, and players, the game board will be displayed on the console.

- **Turn Order:** Players take turns playing the game. Each player is identified by a unique name:
    - **Player 1:** The first player
    - **Player 2:** The second player
    - And so on
    - Player 1 plays first; once they complete the game, Player 2 takes their turn, and so on.

- **Console Information:** The terminal displays:
    - The current player's number of moves made.
    - The **Score to Beat**, which indicates the lowest number of moves used to complete the game. For the first player, this value is set to **0**.

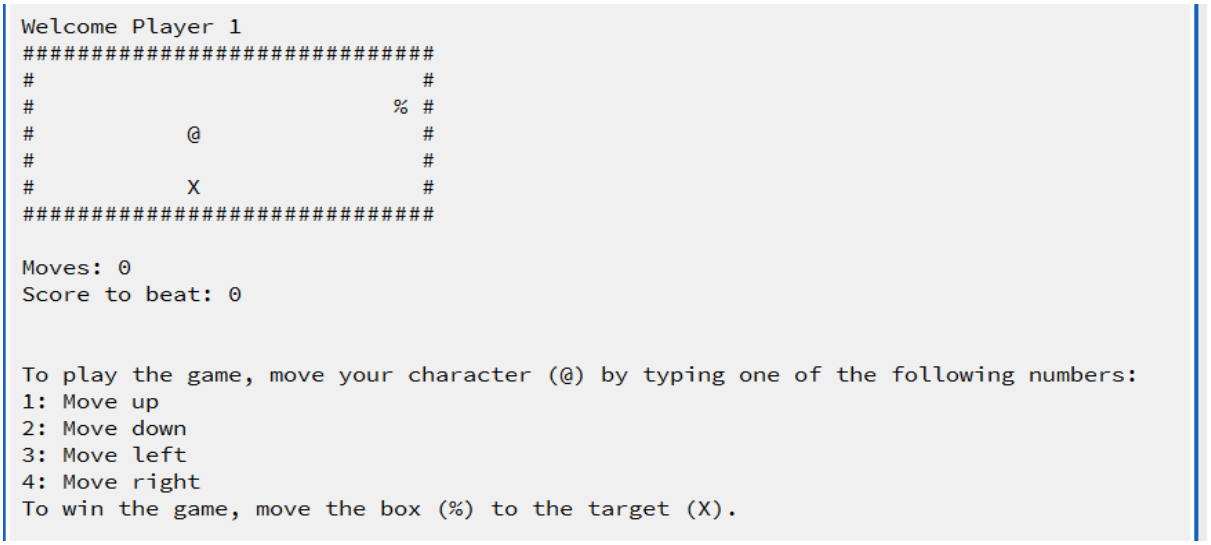


Figure 1.3: Initial Game Board Display

Moving Boxes

- **Moving Next to the Box**: Players can push boxes by moving their character next to the box.
- **Valid Box Movement:** If the character is beside the box and moves towards it (with no wall blocking the box), the box will move in the direction to which the character intends to move, and the character will occupy the box's previous location.
- **Blocked Movement:** If a player attempts to move into a wall or push a box that is already beside a wall, neither the player nor the box moves

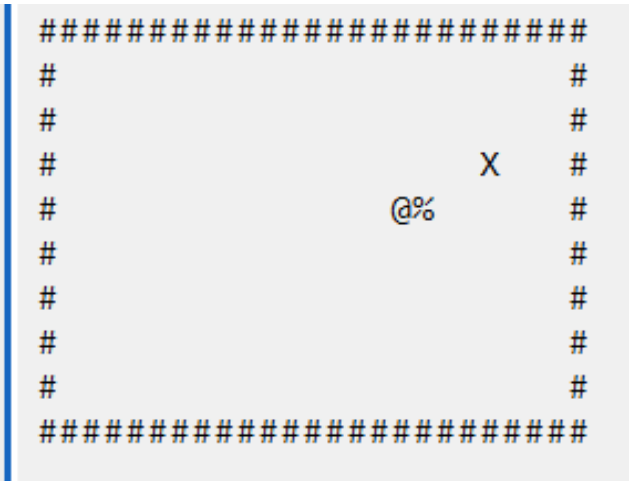


Figure 1.4: Valid Box Movement

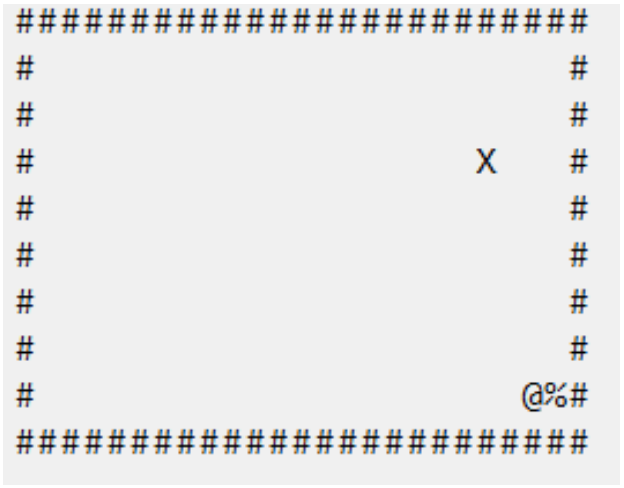


Figure 1.5: Blocked Box Movement

Move Attempts

- **Counting Moves:** Every attempt to move counts as a move, even if the character does not change position.
    - Players should strategize their moves to avoid unnecessary attempts

- When the player occupies a target, they become invisible on the board. However, after the player makes their next move, they will vacate the target and reappear in their new position.

Winning the Game

To win:

- Move your character on the board efficiently and use the lowest number of moves to successfully push all boxes into their designated target areas.

Strategy Tips

- **Pushing Boxes:** You can only push boxes forward; pulling them is not possible.
- **Avoiding Dead Ends:** Be cautious not to push boxes into unsolvable locations, like corners or against walls without targets, as this can block your progress.
- **Efficiency:** In multiplayer mode, the player who uses the fewest moves wins so try to be efficient in making moves and use the least moves to win the game

Cheat Codes

If you want to enhance your gameplay experience, here are some cheat codes you can use:

1. **Entering Cheat Codes**: Type the desired code into the console, instead of moves, during gameplay and press Enter.
2. **List of Cheat Codes**:
    - **1234**: Moves the character to the target location.
    - **2024:** Completes the turn, and the player's current number of moves is shown on the leaderboard.

End of Game

Once all players have completed the game, a leaderboard will be displayed. This leaderboard ranks players based on the number of moves:

- The player with the fewest moves will be at the top.
- The player with the most moves will be at the bottom.

Players are assigned names as follows:

- **Player 1:** First player
- **Player 2:** Second player
- **Player 3:** Third player
- And so on.

The game concludes after the leaderboard is displayed.

```
================================================================================
Great job!
The game has ended. Here are the final scores for each player

1) Player 3                    5
2) Player 2                    8
3) Player 4                    10
4) Player 1                    12


================================================================================
```

Figure 1.6: Leaderboard: Ranks Players by Moves.