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| Use Case: Play (Single Player)  Description: A one-person local game of Sudoku  Actors: Player  Pre-Conditions: None  Post-Conditions: None | |
| Player  3) Enters board size  7) Enters moves (A1) | System  1) Welcomes user  2) Prompts user for board size  4) Creates partially filled board (E1)  Repeat 5, 6, 7, and 8  5) Displays board (E2)  6) Prompts user for moves  8) Makes moves (E3)  9) Congratulates player  10) Ends Game |
| Alternatives  A1: User may quit application | |
| Exceptions  E1: Board size may not be valid, set the board to a default size  E2: System checks if board has been solved, if so 9)  E3: Move might not be valid; the system repeats 6) Prompt for move | |

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| Use Case: Play (Two Player)  Description: A multiplayer network game of Sudoku  Actors: Player1, Player2  Pre-Conditions: Internet connection from both Player1 and Player2  Post-Conditions: None | | |
| Player1  3.a) Chooses multiplayer option (A1)  5.a) Chooses host option  8) Enters board size (A2)  14) Enters move (A3) (A4) | Player2  3.b) Chooses multiplayer option (A1)  5.b) Choose guest option  18) Enters move (A3) (A4) | System  1) Welcomes Player1  2) Prompts user for game type  4) Prompts user for host or guest  6) System obtains IP addresses (E1)  7) Prompts Player1 for board size  9) Creates partially filled board (E2)  10) Finds Player2 for session  11) Creates connection between Player1 and Player2 (E3)  Repeat 12, 13, 14, 15, 16, 17, 18, 19, and 20  12) Displays board for Player1 and Player2  13)Prompts Player1 for move  15) Makes move (E4)  16) Displays board for Player1 and Player2 (E5)  17) Prompts Player2 for move  19) Makes move (E4)  20) Displays board for Player1 and Player2 (E5)  21)Congratulates Player1 and Player2  22) Ends game  23) Ends connection |
| Alternatives  A1: Player may choose single player option, then the single player use case  A2: Board size may not be valid, then the system set board to default value  A3: Move may not be valid; the system displays error message and repeats 13) for 14) and 17) for 18) depending when the Alternative was made  A4: Player may quit the game; the system goes straight to 22) and 23) | | |
| Exceptions  E1: IP address may not be found; in this case display error message  E2: Board size may not be valid, set the board to a default size  E3: Connection many not be possible to make  E4: Move might not be valid; the system repeats 13) for 15) or 17) for 19)  E5: System checks if board has been solved, if so 21) | | |