**Group name: Voodoku**

**Group members:**

* William Andrew Nel
* Matthew Gary Hagemann
* Gabriel Muller

**Group mentor:** Kristen Theunissen

**Project Title:** Vooduko

**Project Description:**

We are developing a Sudoku game with variable board sizes that tracks and recalls scores, continues from previous games and which includes multiple levels to play.

**Instructions for using the Application (allowable actions):**

* **If you would like to start a new game:**

1. Enter a name for your game.
2. Enter a player name.
3. Select a board size from the combo box.
4. Press the Start a new game button.

* **If you would like to continue from a previous game:**

1. Select a game from the list view to the right of the screen.
2. Press the Resume Game button.
3. The delete game button will remove an old game from the list of playable games in the list view.

* **Once you have chosen or started a new game and you are ready to play:**

1. You will notice the board consists of black numbers in spaces as well as empty blocks. The default values are not editable as they form part of the initial puzzle. To place a move, hover your mouse over an empty block on the board and use the scroll wheel of the mouse to iterate through possible moves to play. Once happy with your choice, use the left mouse button to confirm your choice and play a move. If your move was invalid it will not be placed and the appropriate output will be shown above the board alerting you as to why your move is invalid.
2. Played moves are shown in blue text if they are valid. The amount of moves as well as the high score for a particular puzzle will be show on the bottom right of the game. Note that the default high score is 300 as obtained by “CPU300”. This will change to your name and score if you complete a puzzle.
3. If you are unhappy with a previous move, you can hover over it and use the right mouse button to remove it.
4. All moves or interactions are counted as moves, not just valid ones.
5. You will also notice that there are two check boxes to the top right of the game which can be used to mute the sound effects and the background music.
6. All games are saved every-time a move is made, so it is important to make at least one move if you would like to continue a new game in the future.
7. The menu button to the top left of the screen is used to close the current game and open the menu .
8. The puzzles all follow the rules of Sudoku. The aim of the puzzle is to fill in all the remaining squares without violating one of the rules of Sudoku (ie: You can’t place a number twice in the same row, coulomb of block)

**Tools or Concepts Used:**

* Two dimensional Arrays
* One dimensional Arrays
* Lists
* Structures
* Points
* Dictionaries
* Dynamic events
* Methods
* Sound
* Graphics
* Classes
* Loops
* Files
* User interface design
* Properties
* Overloaded constructors
* Overriding
* Accessibility modifiers
* Exceptions
* Custom exception classes
* Input validation

**Our Assumptions:**

We assumed that all players know the rules of Sudoku as it is a common logic puzzle. Another assumption is that the game is always going to be run on a desktop computer with a large screen. It was not configured for laptop screens.

We also assumed that all players have a mouse with a functioning scroll wheel to enter moved as described above.

**Our Limitations:**

To return to the main menu the game needs to reset completely.

There is only one puzzle for each board size.

It is possible to break the game if you continuously and repeatedly hit the left and right mouse clicks in a single square.

Window stretch scaling is not perfect on smaller screens and can sometimes end up hiding the main UI.