

Michael Lieu and Will Schreiner

CS Senior Design I

Assignment 6

Milestones, Timeline, and Effort Matrix

Milestones:

- Research Milestone
 - The research milestone will be conducted by both team members to learn more about their respective responsibilities.
- Design and Development Milestone
 - The development milestone will be done by both team members; Michael Lieu will design and develop the Sudoku GUI while Will Schreiner designs and develops the back-end implementation of the program, where all of the solving functions will be done. Both team members will also be adding documentation to their implementations for readability.
- Integration Milestone
 - This development milestone will be an effort conducted by Michael Lieu, who will analyze both implementations and integrate them.
- Testing Milestone
 - This development milestone will be an effort conducted by Will Schreiner, who will run a series of tests to test out a variety of algorithms.
- Production Milestone/Final Deliverable
 - The final deliverable will be a fully-integrated Sudoku solver program with a completed GUI where the user can input valid values into a Sudoku board and

have the program return a fully solved Sudoku board based on the user input values.

Tasks Timeline:

| Task | Start Date | Completion Date |
|--|---------------|-----------------|
| Research TkInter and GUI design implementations of Sudoku boards (Michael Lieu) | October 2023 | November 2023 |
| Design and develop the implementation of the visual Sudoku GUI's board (Michael Lieu) | November 2023 | December 2023 |
| Design and develop the implementation of traversing across the visual Sudoku GUI (Michael Lieu) | December 2023 | December 2023 |
| Design and develop the implementation of inputting, deleting, and replacing values for the Sudoku GUI (Michael Lieu) | December 2023 | March 2024 |
| Integrate the back-end implementation with the front-end implementation of the program (Michael Lieu) | March 2024 | April 2024 |
| Design data structure for sudoku board (Will Schreiner) | October 2023 | November 2023 |
| Design and develop the Square class (Will Schreiner) | October 2023 | December 2023 |

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|--|---------------|---------------|
| Design and develop Board class structure; basic data functions, and board maintenance functions (Will Schreiner) | October 2023 | December 2023 |
| Design basic solve functions and unit tests (Will Schreiner) | December 2023 | February 2024 |
| Design advanced solve functions and unit tests (hidden + naked pairs) and unit tests (Will Schreiner) | December 2023 | March 2024 |
| Design backtracking solve functions and unit tests for non-human solvable fallback (Will Schreiner) | March 2024 | April 2024 |

Milestone Timeline:

| Milestone | Start Date | Completion Date |
|------------------------|---------------|-----------------|
| Research | October 2023 | November 2023 |
| Design and Development | November 2023 | March 2024 |
| Integration | March 2024 | April 2024 |
| Testing | December 2023 | March 2024 |
| Production | April 2024 | April 2024 |

Effort Matrix:

| Task | Hours |
|------|-------|
|------|-------|

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|--|-----------------------------|
| Research TkInter and GUI design implementations of Sudoku boards (Michael Lieu) | 4 hours |
| Design and develop the implementation of the visual Sudoku GUI's board (Michael Lieu) | 6 hours |
| Design and develop the implementation of traversing across the visual Sudoku GUI and quality of life features (Michael Lieu) | 8 hours (reworks) |
| Design and develop the implementation of inputting, deleting, and replacing values for the Sudoku GUI (Michael Lieu) | 10 hours (reworks, ongoing) |
| Integrate the back-end implementation with the front-end implementation of the program (Michael Lieu) | 20 hours (ongoing, reworks) |
| Design data structure for sudoku board | 3 hours (multiple reworks) |
| Design and develop the Square class | 1 hour |
| Design and develop Board class structure; basic data functions, and board maintenance functions | 20 hours (multiple reworks) |
| Design basic solve functions and unit tests | 10 hours |
| Design advanced solve functions and unit tests (hidden + naked pairs) and unit tests | 15 hours (ongoing) |
| Design backtracking solve functions and unit tests for non-human solvable fallback | (ongoing) |