Brian High

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Education

University of New Mexico *Aug. 2020 - May 2024 (expected)*

- GPA: 3.5
- Bachelor of Science in Computer Science & Minor in Business Administration
- Member of the Honors College
- Member of the UNM Mountaineering Club

Early College Academy High School *Aug. 2016 - May 2020*

- GPA: 4.25
- Member of National Honors Society

Technical Skills and Experience

- Experience with Java, C, and Matlab
- Microsoft Office Suite
- Experience in CS related subjects (Discrete Mathematics, Numerical Analysis, Algorithms, Linear Algebra)
- School Projects in C
  - Breadth-First Search algorithm
  - Doubly Linked-List Data Structure
- Self-Guided Projects in Java
  - Conway's Game of Life - Cellular automata with file I/O (RLE compression)
  - GPA Calculator
  - Video Game Clones
    - Flappy Bird
    - Snake
    - Breakout
    - The Impossible Game
- School Projects in Java
  - Catacaustic curve generator from times tables (cardioid, nephroid, etc.)
  - Scrabble Game
    - Best-Move algorithm
    - TRIE dictionary (prefix-tree)
- School Projects in Matlab (Numerical Analysis)
  - Taylor series approximations
  - Direct solves for matrix equations
    - Naive-Gaussian
    - LU and LDL^t factorization
    - Cholesky factorization
  - Iterative solves for matrix equations
    - Jacobi and Gauss-Seidel
  - Root finding algorithms
    - Bisection method
    - Secant method
    - Newton's method

**More in-depth information on notable projects in my portfolio*

Work Experience

Tutor for Large Programs, Albuquerque, NM *Jan. 2022 - Mar. 2022*

- Tutor classmate for large programs class, educated on Java 17 and JavaFX

Dion's "Expert," Albuquerque, NM *Aug. 2018 - Nov. 2020*

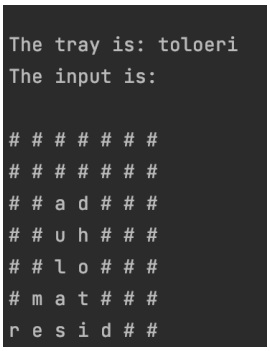
- Leadership and Training role as an "Expert," overseeing the pizza operations
- Learned how to work efficiently and accurately in a high-stress environment
- Developed time management and problem-solving skills

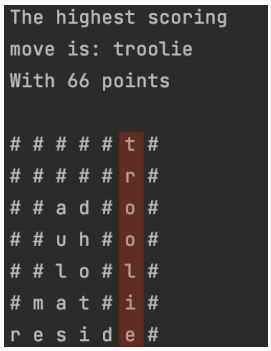
Nusenda Teller Internship, Albuquerque, NM *Jan. 2019 - Jun. 2019*

- Large cash handling experience and facilitated credit card and various loan payments
- Resolved transaction issues and responded to all account and banking-related questions
- Maintained and organized personal teller drawer with daily account and transaction reconciliation

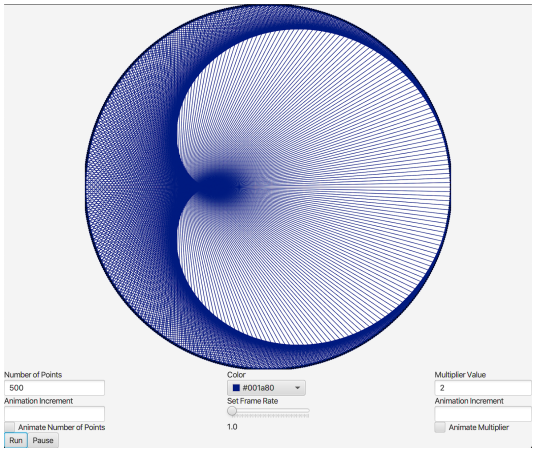
Brian High - Portfolio

Project: Scrabble Game (Java)
Objective: Create an object-oriented, highly modular design for the scrabble game and scrabble board solver.
What I learned: How to design and optimize an algorithm and TRIE data structure.

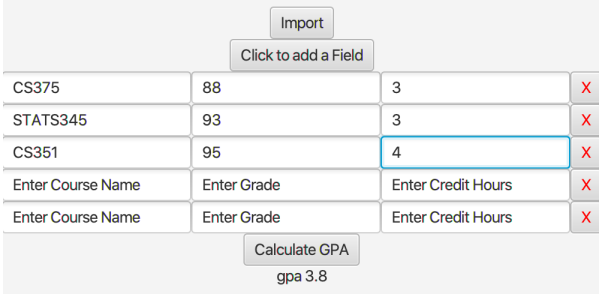




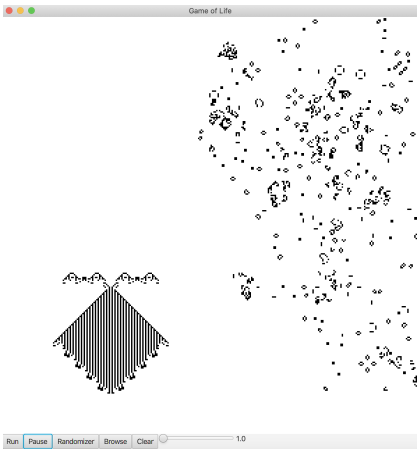
Project: Catacaustic Curve Generator (JavaFX)
Objective: Create an interactive curve generator that can animate how changes in the input change the curve.
What I learned: How to use asynchronous JavaFX tools to animate graphical elements, and safely change variables from different threads.



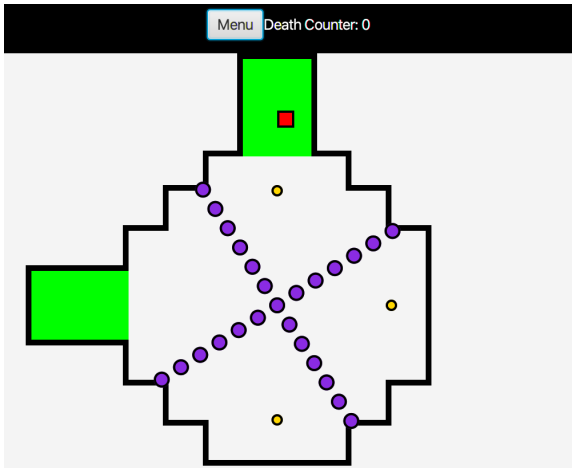
Project: GPA Calculator (JavaFX)
Objective: Create a dynamic offline GPA calculator that saves my classes and their grades in a file.
What I learned: How to create object-oriented designs using JavaFX and efficiently implement file I/O.



Project: Conway's Game of Life (JavaFX)
Objective: Implement Conway's Game of Life in an efficient manner, with file I/O that uses existing patterns from the internet
What I learned: How to make computationally intensive JavaFX programs efficient and compress files with Run-Length-Encoding.



Project: The Impossible Game Clone (JavaFX)
Objective: Clone this popular flash game so it is functionally and visually identical.
What I learned: How to implement a level editor that uses highly modular graphical elements, collision boxes, and file I/O to save levels.



Project: Doubly Linked-List (C)
Objective: Create this data structure without using existing libraries
What I Learned: The nuances of how to implement and effectively use pointers.