Saksham Agarwal

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PROJECTS

Snake Game – Terminal Based:

- **Objective:** Create a terminal-based Snake Game to demonstrate practical usage of fundamental programming and DSA (Data Structures & Algorithms) concepts.
- **Description:** Developed a 2D grid Snake Game in C++ where the player controls a snake that grows in length each time it consumes food. Implemented game mechanics including snake movement (W, A, S, D), food generation, growth, collision detection, and game-over conditions. Utilized arrays and 2D arrays to manage the snake and grid, and linear search to detect self-collisions.
- **Outcome:** Enabled a fully functional, interactive terminal-based Snake Game that reinforces DSA concepts, algorithmic thinking, and dynamic memory management. Provided an engaging way to visualize arrays, loops, and conditional logic in action.
- **Key Skills:** C++, Arrays, 2D Arrays, Dynamic Memory Management, Loops, Conditional Logic, Terminal I/O, Algorithm Implementation.

Portfolio Website:

- **Objective:** To create a responsive personal portfolio website for showcasing projects, skills, and achievements.
- **Description:** Developed a clean and responsive portfolio website using HTML, CSS, JavaScript, and Bootstrap. Applied UI/UX best practices to ensure intuitive navigation, fast loading, and an engaging user experience across all devices.
- **Outcome:** Showcase my projects, skills, and achievements. Strengthened my front-end development skills, learned to apply responsive design.
- **Key Skills:** HTML, CSS, JavaScript, Bootstrap, UI/UX Design, Responsive Web Design.

Name_Sorter

- **Objective**: Develop a terminal-based C++ program to sort a dynamic list of names alphabetically, demonstrating practical usage of Data Structures & Algorithms (DSA).
- **Description**: Implemented a C++ program that accepts a list of 20–50 names from the user and sorts them in ascending order (A–Z) using the Merge Sort algorithm. The program uses dynamic memory allocation for string storage, handles C-style strings with strcmp, and validates user input to ensure robustness. Memory management is handled properly with new and delete[]. Users can sort multiple lists in one execution.
- **Outcome**: Delivered a fully functional, interactive terminal application that reinforces understanding of Merge Sort, arrays, pointers, dynamic memory management, and input validation. The project can also be used as a teaching tool for explaining DSA concepts in C++.
- **Key Skills**: C++, Merge Sort, Arrays, Pointers, Dynamic Memory Allocation, String Handling, Input Validation, Algorithm Implementation.

Experience

C++, Data structure & Algorithm: — June 2024 - July 2024

- Completed a comprehensive training program of data structures and algorithm.
- Gained hands-on experience through real-world projects.
- **Programming & Tools:** C++, Git and GitHub

CERTIFICATES

- Introduction to Cybersecurity Essentials. — April 2024
- Dynamic Programming, Greedy Algorithms — May 2024
- Summer Placement Training in DSA | LPU — June 2024
- Approximation Algorithms and Linear Programming — July 2024
- Mastering Data Structure and Algorithm in JAVA |Udemy — May 2024

SKILLS

- **Languages**: C, C++, Java, JavaScript, HTML, CSS
- **Core Skills:** Data Structures (Arrays, Linked List, Stack, Queue, Trees, Graphs, Hashing, Heaps), Algorithms (Sorting, Searching, Dynamic Programming, Greedy)
- **Soft Skills**: Problem-Solving, Team Player, Critical Thinking, Adaptability, Communication

EDUCATION

Lovely Professional University — Punjab, India
Bachelor of Technology - Computer Science and Engineering: **CGPA: 6.4** — July 2025 - Present

Aadharshila The School (CBSE) — Bijnor, U.P
Intermediate: (PCM): **Percentage: 76%** — April 2021 - March 2022

Aadharshila The School (CBSE) — Bijnor, U.P
Matriculation: **Percentage: 89%** — April 2018 - March 2019