Soumyadeep Banerjee

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Education

Master of Computer Applications (MCA)
University of Kalyani (Currently Pursuing)

Bachelor of Science (Honours) in Computer Science
West Bengal State University | Score: 9.69 CGPA (85.35%) | Aug 2023

ISC Class 12th (Science)
Score: 82.75% | Aug 2020

ICSE Class 10th
Score: 90.2% | May 2018

Skills

Java, C#, SQL (MS SQL Server, MySQL), HTML, ASP.NET 4.8, Git, Word, PowerPoint

Projects [LINK]

Microloom: A Social Media Web Application

- Developed using **ASP.NET 4.8, C#, HTML, CSS, JavaScript, Bootstrap** and **MS SQL Server.**
- Implemented **authentication** and **authorization** via cookies; used **OTP verification** for password resets.
- Enabled **post creation, reactions (likes and dislikes), sharing, and commenting.**
- Integrated **real-time messaging** with **SignalR** and built a **notification** system for user interactions.
- Designed a profile system allowing users to **edit** profiles, **upload** profile pictures, and **view** interaction history.

Hotel Management System and Hotel Booking Website

- Developed using **ASP.NET 4.8**.
- Implemented **secure user authentication** using **OTP**.
- Designed an intuitive interface for **hotel staff** to **manage operations** and for **guests** to streamline **bookings**.

Java Swing-Based 2D Games

- Built games like **Block Breaker**, **Match the Tiles**, **Minesweeper**, **Eight Puzzle** and **Dodge the Obstacles**.
- Implemented **collision detection**, **game-over** logic, **responsive** controls and used **A*** and **Minimax** algorithms.

Huffman Encoder and Decoder

- Developed a Java app to compress and decompress files using **Huffman encoding and Huffman Trees**.
- Built Huffman encoder and decoder using a **frequency-sorted Huffman tree**. Creates a custom **.huff** file.
- Handled **file extension preservation** and **lexicographically** sorted frequency tables for **accurate** restoration.

Image and Audio Steganography Tool

- Built a Java GUI app for **LSB steganography** to hide **encrypted text** in **PNG** and **WAV** files.
- Used **Caesar cipher** with a **user-defined shift** value; embedded cipher key within hidden data.
- Applied **OOP** principles to encode data into **RGB pixel** values and the **least significant bit** of the **least significant byte** in **WAV** audio samples, with support for **Little Endian** format.
- Implemented custom decoding logic for accurate **extraction** and **decryption** from **image** and **audio** files.