CIS 25 Midterm Project: Inventory Management System

This Inventory Management System is a C++ console application that allows users to manage product data. Users can add items, search for them using binary search, and save/load inventory data to and from a file. The system uses object-oriented programming principles such as classes, encapsulation, and file I/O.

Concepts Used

- Data types and data sizes
- File types (.txt for data I/O)
- Use of pointers (via dynamic memory and vectors)
- Arrays (via std::vector)
- Binary search algorithm (to find items by ID)
- Use of strings (std::string for item names)
- File I/O (ifstream, ofstream)
- At least two classes: Item and Inventory

Challenges Faced

One challenge was properly implementing binary search on a vector of objects. This required careful sorting and validation to ensure the IDs were ordered. Another challenge was managing file input/output, especially when parsing strings to recreate item objects.