Professional Self-Assessment

My journey through the Computer Science program has been transformative, equipping me with a diverse set of skills crucial for a successful career in technology. This self-assessment serves as an introduction to my portfolio, demonstrating to potential employers my readiness and competence to contribute effectively in the field.

Throughout my studies, I've tackled a variety of challenging courses, each contributing uniquely to my skill set:

1. Foundation in Application Development (IT 145):

Here, I worked with a team to build a web application. This experience taught me not just the technical aspects of coding, but also the crucial soft skills of teamwork and effective communication. I learned how to collaborate with others, divide tasks efficiently, and bring individual strengths together to achieve a common goal.

2. Data Structures and Algorithms (CS 260):

This course deepened my understanding of how to organize and manipulate data efficiently. I worked on projects implementing sorting algorithms (ways to arrange data) and optimizing search functions (methods to find specific information quickly). These skills are fundamental in creating fast and efficient software applications.

3. Database Design and Development (DAD 220):

I learned how to design and implement databases, which are essential for storing and managing large amounts of information. This involved creating efficient structures to store data, writing queries to retrieve specific information, and ensuring the integrity and security of the data.

4. Computational Graphics and Visualization (CS 330):

This course taught me how to create visual representations of data and 3D models. These skills are valuable in various fields, from creating engaging user interfaces to developing video games or scientific simulations.

My portfolio includes three main projects that showcase the practical application of these skills:

1. Inventory Management System Enhancements:

I improved an existing inventory management application by adding new features:

- Role-based access: The app now directs users to different screens based on whether they're an Admin, Manager, or regular User. This enhances security and provides a tailored experience for each user type.

- Improved security: I implemented password hashing, which is a way to securely store passwords so that even if someone gains access to the database, they can't read the actual passwords.

This project demonstrates my ability to enhance existing systems, implement security measures, and create user-friendly interfaces.

2. Manager's Dashboard:

I created a comprehensive dashboard for managers, which includes:

- Data visualization: A bar chart that makes it easy to understand complex data at a glance.

- Advanced data analysis: I implemented a technique called K Means clustering to group recent entries, helping identify patterns in the data.

- Predictive modeling: The dashboard includes a forecasting model to predict future inventory needs, helping managers make informed decisions.

This project showcases my ability to work with complex data, create visual representations, and use advanced techniques to derive meaningful insights.

3. Database Enhancements:

I improved the database system for the inventory app by:

- Adding category tracking: This allows for better organization of inventory items.

- Implementing date management: This feature helps track when items were added or modified.

- Creating inventory trend tracking: This allows managers to see how inventory levels change over time.

- Writing complex queries: These allow for in-depth analysis of the inventory data.

This project demonstrates my proficiency in database design and my ability to extract valuable information from large datasets.

Each of these projects is accompanied by a detailed explanation of the context, challenges faced, and outcomes achieved. Together, they form a comprehensive portfolio that illustrates my capabilities across various aspects of computer science.

Through this program, I've developed a strong foundation in key areas such as software development, database management, algorithm design, and data visualization. I've also honed my problem-solving skills and learned to approach complex issues systematically.

I'm excited to leverage these skills and experiences in my future career. Whether it's developing new software applications, managing large-scale databases, or using data analysis to drive business decisions, I feel well-prepared to take on the challenges of the technology industry and make meaningful contributions to the field.