CS 499 Computer Science Capstone

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CS499: Self Assessment

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**Self-Assessment**

Throughout my time in the Computer Science program at SNHU, I have grown significantly as a developer, a problem solver, and a collaborator. The diverse coursework, ranging from foundational programming in IT 140 and CS 210 to more advanced topics such as CS 465 (Full Stack Development I) and CS 499 (Capstone), has provided me with a broad and in-depth understanding of the field. Developing my ePortfolio has been a valuable opportunity to reflect on that learning, consolidate it into tangible demonstrations of my capabilities, and position myself effectively for future employment opportunities in the tech industry.

Completing the capstone and curating the enhancements into a single survival game project allowed me to unify the many threads of my education. The project draws on areas such as software engineering, data structures, database design, and game AI. It brings them together into a single artifact that evolves throughout the capstone. This artifact doesn’t just demonstrate isolated technical skills. Instead, it showcases my ability to take a system from concept to execution, apply enhancements iteratively, and communicate technical decisions with confidence.

From a technical standpoint, I have applied principles of data structures and algorithms, as taught in courses such as CS 300 and MAT 230, and demonstrated them in the game’s entity system, AI behaviors, and procedural terrain generation. My understanding of software engineering and databases matured significantly through DAD 220, CS 340, and CS 465, where I developed scalable backend components and practiced clean architecture principles. During the capstone, I used MongoDB to implement persistent world state and player data, adding a layer of durability and complexity to the system. Though security enforcement isn’t yet in place, I’ve considered future measures such as input validation, access control, and anti-cheat protections, which are especially relevant for commercial applications.

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The artifacts in my ePortfolio highlight different aspects of my computer science training, but ultimately connect through a unified survival game built with Java and LibGDX. The first artifact emphasizes software engineering, focusing on modular design and the integration of entity behaviors. The second showcases my proficiency in algorithms and data structures, as demonstrated through AI decision-making and ecosystem dynamics. The third focuses on database integration, including player persistence and world data caching. These artifacts, taken together, form a comprehensive representation of my development skills and professional growth.

In summary, the Computer Science program has given me the tools to approach real-world software problems with confidence. I am prepared to pursue a role as a software engineer. Still, I also remain open to future specialization in cybersecurity or machine learning, areas I’ve explored through coursework in CS 305 (Security) and independent learning. My portfolio reflects a commitment to both technical excellence and continuous education, qualities I hope will make me a valuable contributor to any organization I join.