# CS 499 Module One Assignment Template

Complete this template by replacing the bracketed text with the relevant information.

1. **Self-Introduction:** Address all of the following questions to introduce yourself.
   1. How long have you been in the Computer Science program?

**I have been in the Computer Science program for three years at SNHU and at a prior school for a year.**

* 1. What have you learned while in the program? List three of the most important concepts or skills you have learned.

**I have learnt more about how to build and use an API to leverage more functionality for my app as well as postman.**

**Learning agile development and specifically the SCRUM model/system might be the most important thing I have learnt.**

**I have learnt more on object oriented programming specifically in the C# language as I was previously familiar with languages like Java.**

* 1. Discuss the specific skills you aim to demonstrate through your enhancements to reach each of the course outcomes.

**I hope to display an improvement in my coding skills to reach better standards but also the ability to make a change plan for this. My skills to come up with development plans, databases mergers, development improvements and**

* 1. How do the specific skills you will demonstrate align with your career plans related to your degree?

**I am currently employeed as a Web Developer and this program has helped me enhance my skills at my job especially with all of the API and coding work that I currently do.**

* 1. How does this contribute to the specialization you are targeting for your career?

**I would ideally like to work more with Azure and implementing that for We Apps. This does involve work with APIs and using objected oriented programming to work with it.**

1. **ePortfolio Set Up:**
   1. Submit a **screen capture** of your ePortfolio GitHub Pages home page that clearly shows your URL.
      1. You already have a repository in GitHub where you uploaded projects in previous courses. Your ePortfolio will reside in GitHub but can link to work at other sites, such as Bitbucket.
   2. Use the GitHub Pages link in the Resource section for directions on:
      1. How to create your GitHub website and publish code to GitHub Pages
      2. Issues, such as adding links to other sites
   3. Paste a screenshot of your GitHub Pages home page with your URL clearly showing in the space below.

**A screenshot of a computer

Description automatically generated**

1. **Enhancement Plan:** 
   1. **Category One:** Software Engineering and Design
      1. **Select an** **artifact** that is **aligned with** **the** software engineering and design **category** and explain its origin. Submit a file containing the code for the artifact you choose with your enhancement plan.

**I plan on using The Final Animal Shelter Project for the Course CS-340 and will make completely rewrite these files. These files will be submitted with the plan.**

Note: Your artifact may be work from the following courses:

* IT 145: Foundation in Application Development
* CS 250: Software Development Lifecycle
* CS 260: Data Structures and Algorithms
* IT 315: Object Oriented Analysis and Design
* CS 320: Software Testing, Automation, and Quality Assurance
* CS 330: Computational Graphics and Visualization
* CS 340: Advanced Programming Concepts
* CS 350: Emerging Systems Architectures and Technologies
* CS 360: Mobile Architecture and Programming
* IT 365: Operating Environments
* IT 380: Cybersecurity and Information Assurance
* CS 405: Secure Coding
* CS 410: Reverse Software engineering
* IT 340: Network and Telecommunication Management
* IT 380: Cybersecurity and Information Assurance
  + 1. **Describe** a practical, well-illustrated **plan** for enhancement in alignment with the category, including a pseudocode or flowchart that illustrates the planned enhancement.

**My plan for these files is to completely rewrite them into a different language. For this I will be using C# as the new language for these python files. This means that all of the CRUD functions will not be written in C# as well as the main files and method that they are used in. This will be essential for my planned changes for my later competencies. Since I plan on working with only this project I will illustrate all of the pseudocode in one area.**

For this category of enhancement, consider improving a piece of software, transferring a project into a different language, reverse engineering a piece of software for a different operating system, or expanding a project’s complexity. These are just recommendations. Consider being creative and proposing an alternative enhancement to your instructor.

Think about what additions to include to complete the enhancement criteria in this category. Since one example option is to port to a new language, that is the kind of scale that is expected. This does not mean you need to port to a new language but instead have an equivalent scale of enhancement. Underlying expectations of any enhancement include fixing errors, debugging, and cleaning up comments, but these are not enhancements themselves.

* + 1. Explain how the planned enhancement will **demonstrate** specific **skills** and align with course outcomes.
       1. Identify and describe the specific skills you will demonstrate that align with the course outcome.

**This will demonstrate my ability to design software in multiple code languages. As well as translating a old software to new up to date code.**

* + - 1. Select one or more of the course outcomes below that your enhancement will align with.

**This will align with my ability to design software in multiple languages**

Course Outcomes:

1. Employ strategies for building collaborative environments that enable diverse audiences to support organizational decision-making in the field of computer science.
2. Design, develop, and deliver professional-quality oral, written, and visual communications that are coherent, technically sound, and appropriately adapted to specific audiences and contexts.
3. Design and evaluate computing solutions that solve a given problem using algorithmic principles and computer science practices and standards appropriate to its solution while managing the trade-offs involved in design choices.
4. Demonstrate an ability to use well-founded and innovative techniques, skills, and tools in computing practices for the purpose of implementing computer solutions that deliver value and accomplish industry-specific goals.
5. Develop a security mindset that anticipates adversarial exploits in software architecture and designs to expose potential vulnerabilities, mitigate design flaws, and ensure privacy and enhanced security of data and resources.
   1. **Category Two:** Algorithms and Data Structures
6. **Select an artifact** that is **aligned with the** algorithms and data structures **category** and explain its origin. Submit a file containing the code for the artifact you choose with your enhancement plan. You may choose work from the courses listed under Category One.

**I plan on using The Final Animal Shelter Project for the Course CS-340 and will make completely rewrite these files. These files will be submitted with the plan.**

1. **Describe** a practical, well-illustrated **plan** for enhancement in alignment with the category, including a pseudocode or flowchart that illustrates the planned enhancement.

**Since data structures and alogrithms focuses on new ways to organize and efficiently use data I will be changing the functionality of these files. Currently all data was premade myself. I plan on now taking input from the user to create a new animal object that can later be read, updated or deleted. These functions will now have to take input from the user. I will also be modifying the animal class to allow for a string of additional notes that may not be covered by the current parameters. In order to make this data more efficient I plan on removing some of the values in creating the animal object that I deem unnecessary like the latitude and longitude.**

For this category of enhancement, consider improving the efficiency of a project or expanding the complexity of the use of data structures and algorithms for your artifact. These are just recommendations. Consider being creative and proposing an alternative enhancement to your instructor. Note: You only need to choose one type of enhancement per category.

Think about what additions to include to complete the enhancement criteria in this category. Since one example option is to port to a new language, that is the kind of scale that is expected. Perhaps you might increase the efficiency and time complexity of an algorithm in an application and detail the logic of the increased time complexity. Remember, you do not need to port to a new language but instead have an equivalent scale of enhancement. Underlying expectations of any enhancement include fixing errors, debugging, and cleaning up comments, but these are not enhancements themselves.

1. Explain how the planned enhancement will **demonstrate** specific **skills** and align with course outcomes.
   1. Identify and describe the specific skills you will demonstrate to align with the course outcome.

**This will demonstrate my skills to develop efficient data structures in my code that can be saved in a database.**

* 1. Select one or more of the course outcomes listed under Category One that your enhancement will align with.

**The outcome will be the new efficiency as well as porting into a new new language.**

* 1. **Category Three: Databases**
     1. **Select an artifact** that is **aligned with the** databases **category** and explain its origin. Submit a file containing the code for the artifact you choose with your enhancement plan. You may choose work from the courses listed under Category One.

**I plan on using The Final Animal Shelter Project for the Course CS-340 and will make completely rewrite these files. These files will be submitted with the plan.**

* + 1. **Describe** a practical, well-illustrated **plan** for enhancement in alignment with the category, including a pseudocode or flowchart that illustrates the planned enhancement.

**To enhance the process in which these are stored into the database. Since I am changing the data that would be stored the table would change and I would like to add in an active field so instead of hard delete we can archive animals and still keep their data for whatever it may be needed for. My enhancement here would be to add a new table that allows some user information to be stored with permissions. Instead of having the same user information passed in each time for a login I would like to store a username and password with certain permissions that are assigned for account creation. This can limit a person to only be able to read but they may not be able to delete animals as an example. Encypting the password in the Database will be best for security.**

**Below is the pseudocode for all of these changes**

**Main Psudocode:**

**First Login on initiliaization**

**Method to request a username and than password to be entered or create an account**

**If new account**

**request new username and password to be entered with no duplicate usernames**

**Then after assign permissions to Create & and update, then one for delete. Assign read no matter what**

**If the account is not new authenticate by making sure a username and password match.**

**Once authenticated prompt user to chose if they want to create, look up, update or delete an animal or end session**

**If create call create function in animal shelter class**

**If read call read function in animal shelter class**

**If delete call delete function in animal shelter class**

**If update call update function from animal shelter class**

**If session end close program**

**AnimalShelter. Psuedocode:**

**Create class**

**Promprt the user to enter in one value after another to create an animal object**

**After data collection is finished ask if data is correct**

**If yes save to database**

**Read:**

**Prompt user to enter a name of a pet or a pet type like cat or dog**

**Return list of all animals matching description**

**If none are found display an information message “no animals found”**

**Update**

**Prompt user to enter a name of a pet**

**return animal matching description**

**run through list of object parameters to update**

**Delete**

**Prompt user to enter a name of a pet**

**return animal matching description**

**confirm that this is the animal you want to delete**

**delete or archive animal from table**

For this category of enhancement, consider adding more advanced concepts of MySQL, incorporating data mining, creating a MongoDB interface with HTML/JavaScript, or building a full stack with a different programming language for your artifact. These are just recommendations; consider being creative and proposing an alternative enhancement to your instructor. Note: You only need to choose one type of enhancement per category.

Think about what additions to include to complete the enhancement criteria in this category. Since one example option is to port to a new language, that is the kind of scale that is expected. Perhaps you might increase the efficiency and time complexity of an algorithm in an application and detail the logic of the increased time complexity. Remember, you do not need to port to a new language but instead have an equivalent scale of enhancement. Underlying expectations of any enhancement include fixing errors, debugging, and cleaning up comments, but these are not enhancements themselves.

* + 1. Explain how the planned enhancement will **demonstrate** specific **skills** and align with course outcomes.
       1. Identify and describe the specific skills you will demonstrate that align with the course outcome.

**The addition of a new table as well as set up fields and potential stored procedures will show database knowledge.**

* + - 1. Select one or more of the course outcomes listed under Category One that your enhancement will align with.

**This outcome will demonstrate my ability to develop and run difference functions like updates, reads and inserts.**

1. **ePortfolio Overall Skill Set**
   1. Accurately describe the **skill set** to be illustrated by the **ePortfolio** **overall**.
      1. Skills and outcomes planned to be illustrated in the code review

**This will show my ability to translate to new code and develop code in new langauages . While also making it interactive and efficient with data that can be picked up later.**

* + 1. Skills and outcomes planned to be illustrated in the narratives

**The narrative will demonstrate my full range of skills, new development, changes for efficiency, changes to new languages, new database development and all. This will show my thoroughness and desire for fullstack level of development in a single project.**

* + 1. Skills and outcomes planned to be illustrated in the professional self-assessment

**The skills to reflect on myself and test my own work.**