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Assignment 2

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**Waterfall Model Diagram**

Requirements Analysis and Definition: The purpose of this step is to establish the services, goals and constraints of the project.

System Software and Design: The purpose of this step is to establish the overall system architecture and define the fundamental software abstractions and relationships.

Implementation and Unit Testing: The purpose of this step is to write the code and test the components.

Integration and System Testing: The purpose of this step is to integrate the components into a system and test the system.

Operation and Maintenance: The purpose of this step is to install and use the system, fix the bugs and/or update.

**Requirements Analysis and Definition:**

The LeopardWeb project has the goal of creating a scheduling system that will allow students, faculty, and admin to add courses, search for courses, print schedules and more.

• Database of users: the system should work for 100 students, 10 instructors, and 1 admin, however, we will test with fewer.

• Database of courses: this will contain information such as the CRN, course name, times, and instructor.

• Three types of users:

o student – can register, can see available courses and their own schedule.

o instructor – can see available courses and their own course roster.

o admin – can see everything, can edit courses/users/schedules.

• The system should include multiple semesters, print-out of schedule, scheduling preferences.

• The system as a whole and all components must be tested thoroughly.

The base class of the system is user with:

• Attributes: first name, last name, ID.

• Methods: set function for each attribute, and a function to print all info for the object.

**System Software and Design:**

There will be three derived classes:

• All derived classes must contain any additional attributes and appropriate set/get functions.

• student – the student class will have functions that allow them to search courses, add/drop courses, print their schedule.

• instructor – the instructor class will have functions that allow them to print their schedule, print their class list, and search for courses.

• admin – the admin class will have functions that allow them to add courses to the system, remove courses from

**Implementation and Unit Testing:**

This phase requires the creation and build of the code and databases. Three derived classes from user with unique functions would be created for each.

**Integration and System Testing:**

After initial completion of all components of the code, these components can be combined and tested. These components include specific user classes and functions.

**Operation and Maintenance:**

This stage involves the latest versions of the system to resolve any issues and bugs that would occur and finalize and update the system for final usage.