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**Course: ELEC3225 Applied Programming Concepts**

**Assignment #2**

**Integration and Configuration**

1. Component analysis
   1. Proposed timeline: 1 to 2 weeks
   2. Below are some existing codes/projects I already have to perform some of the main functions of this program:
      1. A program with two bases classes and a driver code. The first is base class called “Schedule” which includes a day, start time, and end time data member. A second base class called “Course” that includes a course name, instructor name, course number, lecture 1 time/day, lecture 2 time/day, and lab time/day. The lecture and lab time/day data members where of type “Schedule”. The “Schedule” class includes private functions that check if the end time is valid and convert the inputted military time to standard time. There is also a function in the driver code that accepts two objects of type “Course” and compares the lab start times of each. If they begin at the same time, the program alerts the user of a time conflict.
      2. Program of a Black Jack game that includes a text based user interface/menu for selecting functions based on the user input.
      3. Program that creates a team of soccer players and has a menu with various functions where the user can: add a player, remove a player, update a player’s rating, output any players above an inputted rating, output the whole roster, and quit the program. Once an option is selected and completed the menu is redisplayed and the user can reselect any option until they quit the program.
2. Requirement modifications
   1. Proposed timeline: 1 week
   2. System requirements would not change due to having some of the main components of the design, however, it would lead to faster development of integrating the various functions of the program. The functions for each class would still need to be designed and implemented, but with some already developed the process can be expediated. The data for the users and the courses would still need to be inputted, however, using the “Schedule” and “Course” classes already created would speed up the integration and testing of the functions related to courses and scheduling.
3. System design (with reuse)
   1. Proposed timeline: 3 to 5 weeks.
   2. The “Schedule” and “Course” programs may have to be modified slightly to meet system requirements or to be used by the base and derived classes already implemented in the program. The menu from the Black Jack game will have to be edited to display the information relating to the scheduling program and have additional lines added to allow the user to select any of the functions related to their class type. The functions from the soccer program can be repurposed to be used in several of the functions in each of the derived classes. Variables and information displayed will have to be modified to fit the program.
4. Development and integration
   1. Proposed timeline: 3 to 6 weeks.
   2. With the existing programs modified to meet the needs of the current system, the rest of the system will need to be developed. Each of the existing parts will be added and modified incrementally as the systems functions are developed. This will expedite various parts of the system as a whole. The “Schedule” and “Course” program will be implemented once the system is ready to begin inputting data for courses. The soccer team functions will be modified and added once the derived classes are ready to have their functions properly programmed. Finally, the user interface menu will be added incrementally to test the various functionalities of the project and will be refined and modified over the course of the project.