Capstone Assignment – See How Well OOP Works

You will combine course work on Person, Student, Course, Waitlist, GroceryList, GroceryStore, etc. by using separate student's work as starting point. Then you will expand the current and update both the design (UML) and code into a well-structured app and test it. The team will make a joint presentation of the work to class.

Feature Requirements and Extensions
Teams will make different extensions, but ALL teams must still have a working system created by combining the design and code from each member's past work. The base functionality must include:

1. Creating a new grocery list for any person using a GUI. Print out the contents and discounted price for the list when complete.
2. Allow a student (of any type) to attempt to register or drop a course and keep track of the roster for each course and the courses for each student.
3. Your team's assigned extension (see below)

Schedule
Week 12
Team formation; understand team's assignment; work agreement; UML Overview Completed (of course it may still change); List changes and updates needed to code for compatibility. Combine current code into single project. Team Meeting 1
Week 13
Expand test cases as necessary. Initial testing of code for compatibility, new functionality, match with UML diagrams. Assign work for UML diagram completion. Team Meeting 2

Week 14
Code Reviews and Checking of UML. Code updates as necessary. Agree on final drop of code date and how to complete testing. Divide work on presentation. Team Meeting 3
Week 15
Presentation and demonstration to class by all team members (see outline)

Extensions
(one of these extensions will be assigned to your team to be done in addition to the above two features)

Adding Semester
Add a semester concept so that courses happen in a semester (eg Spring 2024). Be sure Professor can be assigned to a course in a specific semester. Student enroll and unenroll takes semesters into account. Waitlist continues to work. Using GUI allow professors to be assigned to courses and be able to generate a list of all courses a named professor is assigned for a certain semester. Sort the list by course name and number.

Adding Children
Add a way to keep track of family relationships to for a person. Use a concept such as Marriage (rename if you feel that is too dated) so that a relationship between one male and one female can produce children (still a

biological necessity today.) Be sure that any person can have children with more than one partner. Using GUI allow any person input as a name to find all their children (with current and past partners) and to find their maternal and paternal family tree. Present the list of children sorted by current age.

Adding Grocery Processing
Add the generation of summary information for grocery purchases. A store should be able to keep track of and summarize everything that has been purchased and give a total quantity and total revenue generated. Sort the summary by grocery item name. Assume anything on a grocery list has been purchased. Use a GUI to specify a grocery store by name and be able to request total purchases on any one item and a summary of all items.

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