You will have a menu that does at least the following:1) Prints names of all the buildings2) Prints names of everybody at the university3) Choose a person to do work4) Exit the program

Note that option 3 will require you to print another menu that gives options for each person. You may create any other functions, methods, member variables, etc. to modularize your code and complete the lab. You may use vectors for this assignment if you so choose.

Add an option to save the information system to a file, and add an option to read a saved information system from a file so that you can close the program, but not lose information. This will also require you to be able to add people and/or buildings to the program during runtime. This is an all or nothing extra credit (you will not get partial points for partial completion).

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Lab 4 reflection and design

01/31/17

Problem:

Create a program that has a university class that contains buildings, students, and teachers. The students will have a name, age, and GPA (0.0-4.0). The teachers will have a name, age, and instructor rating (0.0-5.0). Each building will have a name, address, and square footage. Students and teachers will have a “Do\_Work” function that has them do x number of hours of work, depending on user input. “PERSON\_NAME did X hours of homework.” “Instructor PERSON\_NAME graded papers for X hours.” There will be functions in the university class to output all the buildings, and people. 1 student, 1 teacher, and 2 buildings will be initiated at the start of the program.

Design:

Classes:

University

University will contain a constructor that creates Oregon State University. It will have functions that add students, teachers, and buildings to vectors. It will also have a function that will display all the buildings, students, and teachers to the screen for the user to see. University will have a do work function that will ask for a string, it then finds the person with that name and puts that person variable in a pointer, it then calls the Do\_Work function of Teacher or Student respectively depending on polymorphism.

Building

Building will create building objects with the square footage, name, and address. It will have a function that prints the information to the display.

Person

Person will contain the age and name of each object. It will be the parent class of Teacher and Student. It will have a function to output the name and age for the call from University.

Teacher : public Person

Teacher will contain a constructor for teachers, which will set the age and name in Person. It will also take in a teacher rating. It will have a function that prints the rating to the console. There will be a function of do work that displays that the teacher did work for X hours.

Student: public Person

Teacher will contain a constructor for students, which will set the age and name in Person. It will also take in a GPA. It will have a function that prints the rating to the console. There will be a function of do work that displays that the student did work for X hours.

Main will contain a menu that drives the program. It will have options to add new buildings, players, and teachers to the classes. It will then pass those objects to the University class for the copy constructor to add them to the lists.