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Professor Carpenter

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Lab 7

This program is meant to show off the benefits of inheritance and polymorphism. There are three classes in this program. The base class being a person, the first derived class being a student, and the second derived class being an intern. An intern is derived from the student class which is derived from the person class.

In each class, the variables that would typically be private were protected so they could be inherited through multiple levels without ever becoming unavailable somewhere down the line of inherited objects. Each class also has a print function. The “virtual” keyword was utilized to ensure that when the print function was called for an object, the most appropriate print function would be executed. This allows the program to populate an array of six objects, all of which are based off the person base class. Iterating through the array and calling the print function would print all possible information for each object. So, for an intern object, the print function that would be called would be the print function that handles all variables for an intern object. This is possible through memory pointers and virtual functions.

The constructors in each class were created to allow for multiple cases of objects. Each class contains a constructor for an empty object, full object, and an object with a skill included. All information for an object can be added after the initialization of an object, but having multiple constructors allows for faster initialization as it will be done automatically if all parameters are met.

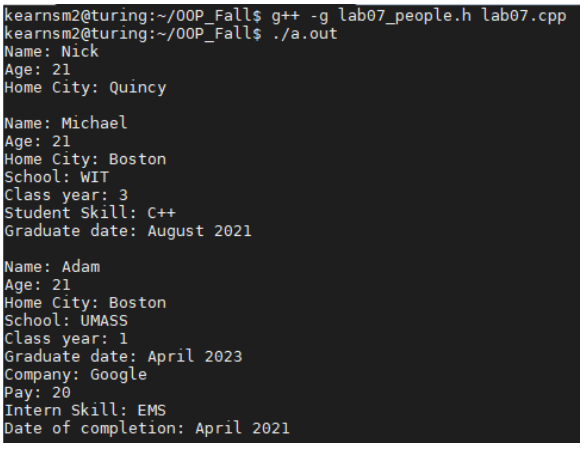


Figure 1. Creation of 3 objects and inclusion of skills

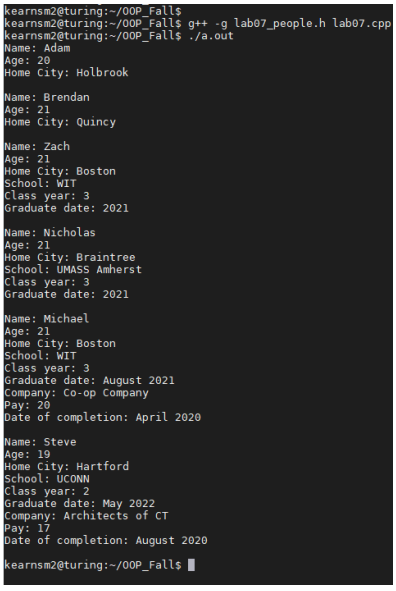


Figure 2. Creation of 6 objects and printed using array