CSCI 1300

Inheritance
July 21st, 2021

University of Colorado **Boulder**

Be Boulder.

Please use the github link for the programing examples and slides.
https://github.com/rahul-aedula95/CSCI-1300

Inheritance

- Classes operate under the idea of a blueprint (we have spoken about this multiple times).
- We separate the concept of classes as base classes and derived classes.
- Base classes:
    - The original class which isn't dependent on any other class.
    - Has its own set of member functions and data variables.
- Derived Classes:
    - Specialized classes which have some common attributes of the base class but also have some unique features.
    - Has access to the base class data members and methods if they are public.

Permissions & private inheritance

- Derived member functions work similar ro any other function that is that they can only access the public aspects of the base class and cannot access the private aspects.
- Private Inheritance is when you do not specify that the inheritance is public so you can only access member functions of base class through member functions of derived class.
  - Means that it is not possible to call the member functions of base class when using an object.

Overriding functions

- Most times you might need to use the same function name but different functionality for the class.
- Even though the derived class uses a part of the function of the base class with the same name it might have more additional tasks.
- In this scenario you would override (give different functionality to the same function name in this derived class) so that it performs as expected.

Tasks for today

1. Continue with our previous problem of word count using maps. Make sure to show me the result in today's class if possible. You need not implement the top n frequent words but I want to see result of just word counts.
2. Write a program with the following specifications:
   a. Create a class called car
   b. Data members include number of amount of paint in gallons, number of tyres replaced, cost of replacing each tyre, cleaning cost (fixed at 200 dollars)
   c. Needs a default constructor
   d. Parameterized constructor
   e. member function called (findTotal) which calculates the total cost of the trip to the shop.