Package delivery services such as FedEx®, DHL®, and UPS®, offer a number of different shipping options, each with specific costs associated. Create an inheritance hierarchy to represent various types of packages.

Use Package as the base class, and then TwoDayPackage and OvernightPackage derive from Package. The class Person contains strings for name, address, city, state, and zipcode. Person should have two constructors, one with five string parameters that initializes the five strings in the class and one with no parameters that initializes everything to empty.

Package uses Person. Package contains informations about the sender and recipient as the base class of the hierarch, and then include classes TwoDayPackage and OvernightPackage that derive from Package. The base class Package should include data members representing the name, address, city, state, and ZIP code for both the sender and the recipient of the package, in addition to data members that store the weight (in ounces) and cost per ounce to ship the package. Package’s constructor should initialize the data members. Ensure that the weight and cost per ounce contain positive values. Package should provide a public member function calculateCost that returns a double indicating the cost associated with shipping the package. Package’s calculateCost function should determine the cost by multiplying the weight by the cost per ounce. Derived class TwoDayPackage should inherit the functionality of the base class Package, but also include a data member that represents a flat fee that the shipping company charges for two-day-delivery service. TwoDayPackage’s constructor should receive a value to initialize this data member. TwoDayPackage should redefine the member function calculateCost so that it computes the shipping cost by adding the flat fee to the weight-based cost calculated by the base class Package’s calculateCost function. Class OvernightPackage should inherit directly from class Package and contain an additional data member representing an additional fee per ounce charged for overnight-delivery service. OvernightPackage should redefine the member function calculateCost so that it adds the additional fee per ounce to the standard cost per ounce before calculating the shipping cost.

Write a test program that creates objects of each type of Package and tests member function calculateCost.

Notes:

- If you want, you can have partner on this program.
- If you have a partner, include the names of both people in the programming pair in the heading
• Follow the style guidelines
• When complete submit a .zip file containing your solution.