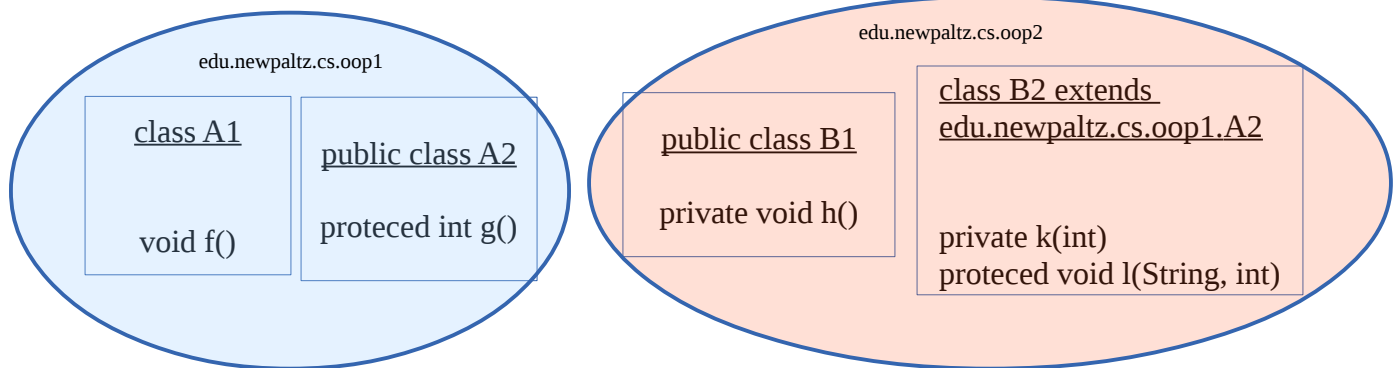


## OOP - Test 1 - Feb 16, 2015

Your Name: \_\_\_\_\_

1. Suppose you have two java packages, edu.newpaltz.cs.oop1 and edu.newpaltz.cs.oop2.

The first has two classes A1, A2, and the second has two classes B1, B2. Suppose B2 extends A2, and that the classes have methods as shown in the figure:



(a) List all classes whose instances have access to the method f

Answer: A1, A2

(b) List all classes whose instances have access to the method g

Answer: A1, A2, B2

(c) List all classes whose instances have access to the method h

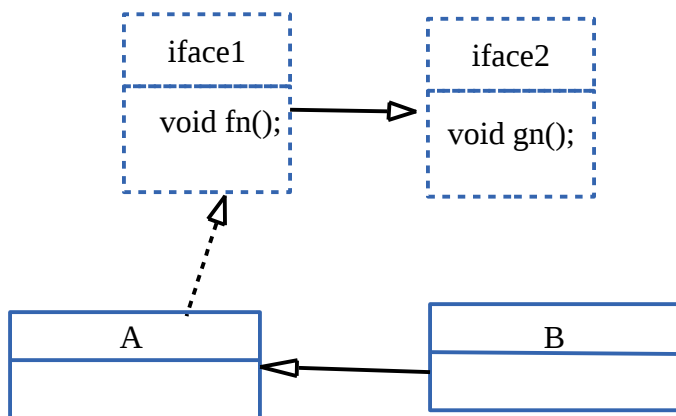
Answer: B1

(d) List all classes whose instances have access to the method l

Answer: B1, B2

40 points total

2. Consider the following inheritance hierarchy:



40 points

a) What must A do, as a contract to the interface it implements?

A MUST implement **fn()** and **gn()**

b) What must B do as a contract to the class it inherits from?

Nothing is required of B if A is a regular class. If A is abstract and doesn't implement fn() and gn(), then B must provide those implementations

c) Suppose you have the following overriding implementation

void fn(){System.out.println("fn() in B);}

in B. (B is overriding fn(), with its own implementation and package access). Is this OK? Explain.

NOT OK. fn() and gn() are public by default (even if they are not explicitly declared as public). B can not override fn() with less privilege than what it inherits. So B must also have fn() declared public.

d) Wherever an iface2 is expected as argument to a method, you can pass a B object - True or False? Why?

True - because a B object is an iface2 object.

3. Consider the following scenario: A customer goes to a restaurant, orders food from the menu, the waitress takes the order and passes it on to the kitchen. The waitress serves wine, and eventually the waitress delivers food to the customer.

(a) What classes would you use to model the essential aspects of this scenario? (10 points)

(b) Draw a sequence diagram showing the interactions between the classes you describe in (a) (10 points)

Customer

Waiter

Kitchen