

**Mechanical Pencil Example**  
**CPS109, A Ferworn, Fall 15**

```
public class Lead
{
    public int amount_left;
    //Constructor method
    public Lead()
    {
        amount_left = 10;
    }

    // Use the Lead
    public void use()
    {
        amount_left = amount_left - 1;
    }

    // How much lead is left?
    public int how_much()
    {
        return amount_left;
    }
}
```



```
public class Pencil
{
    public boolean empty;
    public Lead loadedPencil;

    //Constructor method
    public Pencil()
    {
        empty = true;
    }
    // Load the Pencil
    public void load(Lead stick)
    {
        loadedPencil = stick;
        empty = false;
    }

    // Unload the Pencil
    public Lead unload()
    {
        empty = true;
        return loadedPencil;
    }
    // How much Lead is left?
    public int how_much()
    {
        return loadedPencil.how_much();
    }
    // Use the Pencil with Lead
    public void use()
    {
        loadedPencil.use();
    }
}
```



```
public class PencilDriver
{
    public static void main(String[] args)
    {
        Lead HB = new Lead();

        System.out.println("HB new: " +
            HB.how_much());

        HB.use();
        System.out.println("After HB used: " + HB.how_much());

        Pencil blackpencil = new Pencil();
        blackpencil.load(HB);
        System.out.println("I put the HB lead in the black pencil");

        blackpencil.use();
        System.out.println("I use the HB lead in the black pencil");

        /* this can't happen in real life. What do I mean by that?*/
        System.out.println
            ("This is how much HB lead is left in the black pencil: " +
                blackpencil.how_much());

        blackpencil.unload();
        System.out.println("I take the HB lead out of the black pencil");

        System.out.println("After HB used: "
            + HB.how_much());
    }
}
```



### Program output

```
HB new: 10
After HB used: 9
I put the HB lead in the black pencil
I use the HB lead in the black pencil
This is how much HB lead is left in the black pencil: 8
I take the HB lead out of the black pencil
After HB used: 8
```