

CS 100 Exercise 6: Constructors
Summer 2001
Due in lecture, Thursday July 12

Name: _____ **CUID:** _____

1. Constructors

The BunchOfGrapes example is revisited here, with the original variable declarations and constructor listed, in addition to two new constructors. Study the code to see the changes.

```
public class BunchOfGrapes
{
    public int numGrapes;
    public boolean isWashed;

    // The default constructor, known as the "empty" constructor.
    //Note specifically that it takes no parameters and
    //sets the fields to default values, selected by the programmer
    public BunchOfGrapes()
    {
        numGrapes = 20;    //Wegman's bunches usually have 20 grapes
        isWashed = false; //Wegman's bunches usually are not washed
    }

    // The simple constructor from class
    // Allows the number of grapes to be set, but the bunch is always dirty
    public BunchOfGrapes(int grapes)
    {
        numGrapes = grapes; //user specifies the number of grapes
        isWashed = false;   //but the bunch is not washed
    }

    // This constructor takes both a number of grapes and a washed condition
    //By doing so, the user is able to specify both the number of grapes and
    //if the bunch has already been washed
    public BunchOfGrapes(int grapes, boolean washed)
    {
        numGrapes = grapes; //user specifies the number of grapes
        isWashed = washed;  //and whether they are washed
    }

    //... rest of class BunchOfGrapes
}
```

(over)

2. Object Creation

This program tests out the new constructors as well as the old one for the class `BunchOfGrapes`. If a call to the constructor is successful, then in the line below the constructor call, write the **values of the variables** for the object that has been created. If the constructor call fails, **cross out the line** that would not compile.

```
public class NewGrapeTester
{
    public static void main(String[] args)
    {

        BunchOfGrapes bunch1 = new BunchOfGrapes(25);
        // bunch1:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch2 = new BunchOfGrapes();
        // bunch2:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch3 = new BunchOfGrapes(true);
        // bunch3:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch4 = new BunchOfGrapes(42, true);
        // bunch4:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch5 = new BunchOfGrapes(-10);
        // bunch5:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch6 = new BunchOfGrapes(true, 24);
        // bunch6:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch7 = new BunchOfGrapes(16, false);
        // bunch7:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch8 = new BunchOfGrapes(false);
        // bunch8:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch9, bunch10;

        bunch9 = new BunchOfGrapes(14);
        // bunch9:  numGrapes = _____ isWashed = _____

        BunchOfGrapes bunch10 = new BunchOfGrapes(21, false);
        // bunch10: numGrapes = _____ isWashed = _____

    } //end main
} //end class NewGrapeTester
```