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//
//  Example illustrating shallow copy v.s. deep copy
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// - - - - - - - - - - - - - - - - - - - - - - - - - - -
class thing
{
    int a ;

    thing deep_copy()
    {
        thing t = new thing() ;
        t.a = a               ;
        return t              ;
    }

    void set(int b)
    {
       a = b ;
    }

    int get()
    {
        return a ;
    }
} ;

// - - - - - - - - - - - - - - - - - - - - - - - - - - -
class ex0
{
    public static void main( String [] args )
    {
        thing x ;
        thing y ;
        thing z ;

        x = new thing() ;
        x.set( 7 )    ;
        System.out.println( "Initially x = " + x.get() )   ;

        y = x             ;  // Shallow copy from x to y.
        System.out.println( "Initially y = " + y.get() )   ;
        z = x.deep_copy() ;  // Deep copy from x to z.
        System.out.println( "Initially z = " + z.get() )   ;

        System.out.println( )   ;
        System.out.println( "Changing x to 11" )   ;
        x.set( 11 ) ;

        System.out.println( "x = " + x.get() )   ;
        System.out.println( "y = " + y.get() )   ;
        System.out.println( "z = " + z.get() )   ;
    }
}

======================  Sample Session ======================
pukana% javac ex0.java
pukana% java ex0
Initially x = 7
Initially y = 7
Initially z = 7

Changing x to 11
x = 11
y = 11
z = 7
```