# CMPE 202 Lab Hints

**Gumball Machines** 

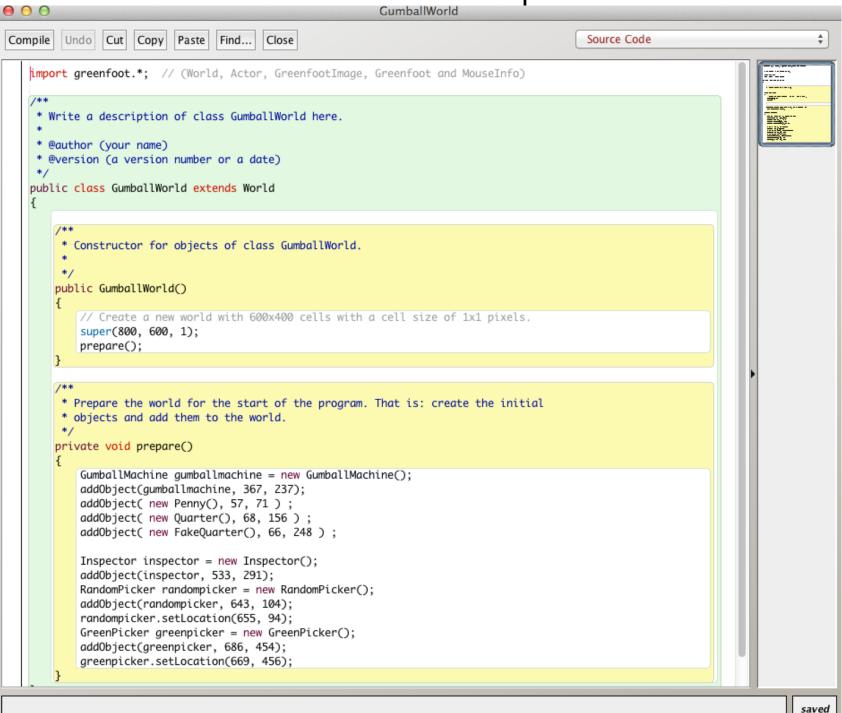
#### Moving Objects

```
\Theta \Theta \Theta
                                                              Coin
         Undo Cut Copy Paste Find...
                                          Close
                                                                                          Source Code
Compile
    import greenfoot.*; // (World, Actor, GreenfootImage, Greenfoot and MouseInfo)
                                                                                                                      確:
     * Write a description of class Coin here.
     * @author (your name)
     * @version (a version number or a date)
    public class Coin extends Actor
        public void act()
            int mouseX, mouseY;
            if(Greenfoot.mouseDragged(this)) {
                MouseInfo mouse = Greenfoot.getMouseInfo();
                mouseX=mouse.getX();
                mouseY=mouse.getY();
                setLocation(mouseX, mouseY);
                                                                                                                           saved
```

### Sizing Image for Objects

```
\Theta \Theta \Theta
                                                             Quarter
         Undo Cut Copy Paste Find...
                                                                                          Source Code
Compile
                                          Close
    import greenfoot.*; // (World, Actor, GreenfootImage, Greenfoot and MouseInfo)
     * Write a description of class Quarter here.
     * @author (your name)
     * @version (a version number or a date)
    public class Quarter extends Coin
        public Quarter()
            GreenfootImage image = getImage() ;
            image.scale( 80, 80 );
                                                                                                                            saved
```

#### World Setup



## Displaying Text & Removing Objects

```
0 0
                                                                      GumballMachine
         Undo Cut Copy Paste Find...
                                         Close
                                                                                                            Source Code
    import greenfoot.*; // (World, Actor, GreenfootImage, Greenfoot and MouseInfo)
     * Write a description of class GumballMachine here.
     * @author (your name)
     * @version (a version number or a date)
    public class GumballMachine extends Actor
        public GumballMachine()
            GreenfootImage image = getImage();
            image.scale( 350, 400 );
        public void act()
            int mouseX, mouseY;
            if(Greenfoot.mousePressed(this)) {
                MouseInfo mouse = Greenfoot.getMouseInfo();
                mouseX=mouse.getX();
                mouseY=mouse.getY();
                System.out.println( "Clicked!" );
                GreenfootImage gi;
                gi = new GreenfootImage(100,100);
                gi.setColor( java.awt.Color.YELLOW ) ;
                gi.fill();
                gi.setColor( java.awt.Color.BLACK ) ;
                gi.drawString( "Crank Turned!", 0, 50 );
                Message m = new Message();
                m.setImage(gi);
                World world = getWorld();
                world.addObject( m, mouseX, mouseY );
            Actor coin;
            coin = getOneIntersectingObject( Coin.class );
            if ( coin != null )
                System.out.println( coin.toString() );
                World world = getWorld();
                world.removeObject( coin );
                                                                                                                                                      saved
```

#### Message Object

```
0 0
                                                           Message
         Undo Cut Copy Paste
                                  Find...
                                         Close
Compile
                                                                                         Source Code
    import greenfoot.*; // (World, Actor, GreenfootImage, Greenfoot and MouseInfo)
     * Write a description of class Message here.
                                                                                                                   TEXES.
     * @author (your name)
     * @version (a version number or a date)
    public class Message extends Actor
        GreenfootImage gi;
        public Message()
            gi = new GreenfootImage( 100, 50);
            setImage(gi);
        public void setText( String msg )
            gi.clear();
            gi.setColor( java.awt.Color.YELLOW ) ;
            gi.fill();
            gi.setColor( java.awt.Color.BLACK ) ;
            gi.drawString( msg, 0, 25 );
        public void act()
            if(Greenfoot.mousePressed(this)) {
                World world = getWorld();
                world.removeObject( this ) ;
                                                                                                                         saved
```

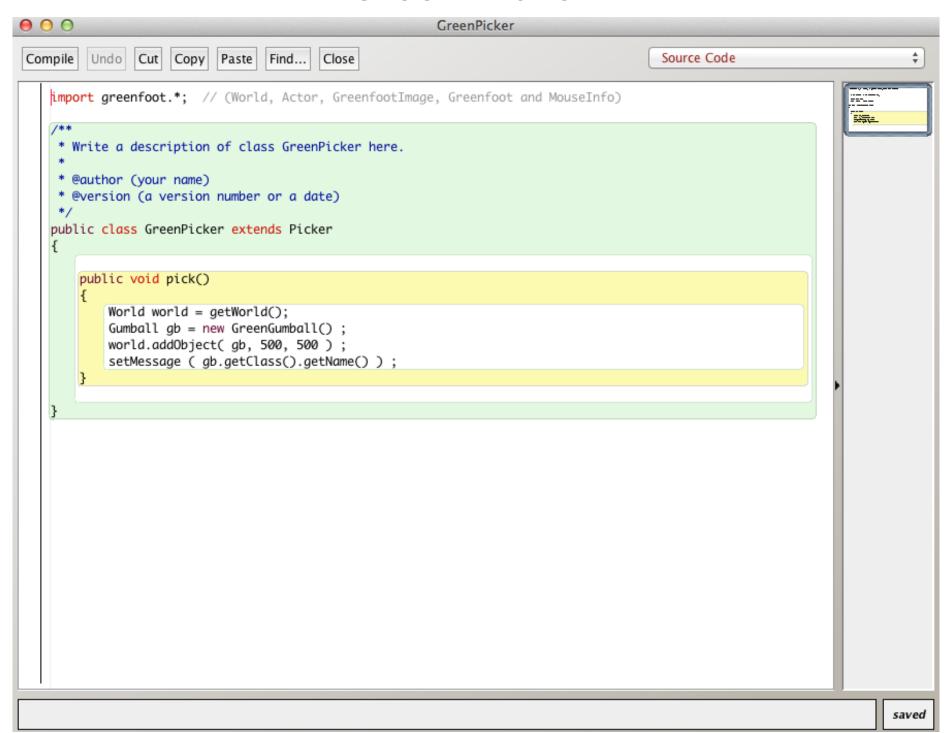
### Reusable Message Object

```
\Theta \Theta \Theta
                                                                 GumballMachine
Compile Undo Cut Copy Paste Find...
                                         Close
                                                                                                     Source Code
        Message m = new Message();
        Actor haveCoin ;
        public GumballMachine()
            GreenfootImage image = getImage();
            image.scale( 350, 400 );
        private void setMessage( String msg )
            int mouseX, mouseY ;
            MouseInfo mouse = Greenfoot.getMouseInfo();
            mouseX=mouse.getX();
            mouseY=mouse.getY();
            World world = getWorld();
            if ( m.getWorld() != null )
                world.removeObject( m );
            world.addObject( m, mouseX, mouseY );
            m.setText( msg ) ;
        public void act()
            if(Greenfoot.mousePressed(this)) {
                if ( haveCoin == null )
                   setMessage( "No Coin in Slot!" );
                else
                   setMessage( "Crank Turned!" ) ;
            Actor coin = getOneObjectAtOffset( +10, +10, Coin.class );
            if ( coin != null )
                if ( haveCoin != null )
                   coin.move( -300 );
                else
                    haveCoin = coin ;
                    setMessage( "Have Coin!" );
                    ((Coin)coin).inSlot();
```

#### Inspector

```
\Theta \Theta \Theta
                                                           Inspector
         Undo Cut Copy Paste Find...
                                                                                          Source Code
                                         Close
Compile
    import greenfoot.*; // (World, Actor, GreenfootImage, Greenfoot and MouseInfo)
    import java.util.ArrayList;
     * Write a description of class Inspector here.
     * @author (your name)
     * @version (a version number or a date)
    public class Inspector extends Alien
        private ArrayList<Picker> pickers = new ArrayList<Picker>() ;
        public void addPicker(Picker obj) {
            pickers.add(obj);
        public void removePicker(Picker obj) {
            pickers.remove(obj);
        public void inspect( Coin coin )
           System.out.println( "Coin: " + coin.getClass() );
           setMessage( coin.getClass().getName() );
           int whichPicker = Greenfoot.getRandomNumber( pickers.size() );
           Picker pickerChosen = pickers.get( whichPicker );
           System.out.println( "Picker: " + pickerChosen.getClass() );
           if ( coin.getClass() == Quarter.class )
               pickerChosen.pick():
                                                                                                                          saved
```

#### Green Picker



#### Random Picker

