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/**
 * File:  Ball.java
 *
 * @author Robb Cutler
 * @version December, 2007
 *
 * The class that implements a bouncing ball.
 */

import acm.graphics.*;
import java.awt.*;

public class Ball extends GOval
{
    private double xSpeed;
    private double ySpeed;

    public Ball(double left, double top, double width, double height, Color c, double dx, double dy)
    {
        super(left, top, width, height);
        this.setColor(c);
        this.setFilled(true);

        this.xSpeed = dx;
        this.ySpeed = dy;
    }

    public void move(Arena arena, Paddle paddle, Score score)
    {
        if (this.isVisible())
        {
            super.move(this.xSpeed, this.ySpeed);

            if (this.getX() <= arena.getX())
                this.reverseXSpeed();

            if (this.getX() >= arena.getX() + arena.getWidth() - this.getWidth())
                this.reverseXSpeed();

            if (this.getY() <= arena.getY())
                this.reverseYSpeed();

            if (this.getY() >= arena.getY() + arena.getHeight() - this.getHeight())
                this.reverseYSpeed();

            if (this.getY() + this.getHeight() >= paddle.getY())
            {
                if ((this.getX() >= paddle.getX()) &&
                    (this.getX() <= paddle.getX() + paddle.getWidth() - this.getWidth()))
                {
                    this.reverseYSpeed();
                    score.increase(1);
                }
                else
                    this.setVisible(false);
            }
        }
    }
}
```

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        }  
    }  
}  
  
public void reverseXSpeed()  
{  
    this.xSpeed = -this.xSpeed;  
}  
  
public void reverseYSpeed()  
{  
    this.ySpeed = -this.ySpeed;  
}  
}
```