# **Bouncing Balls**

## **UML Class Diagrams**

## **STEP 1:** To draw 3 balls on the Form.

# Form1 - graphics: Graphics - world: World + Form1() + timer1\_Tick()

World
112112
- balls: List <ball></ball>
+ World(Graphics graphics)
+ Run()

## Ball

- SIZE: int =10position: Pointbrush: Brushgraphics: Graphics
- + Ball(Point position, Color colour, Graphics graphics)
- + Draw()

## STEP 2: Move the balls

orm1
graphics: Graphics
world: World
Form1()
timer1_Tick()

st <ball></ball>		
Graphics grap	hics)	
	ist <ball> Graphics grap</ball>	ist <ball> Graphics graphics)</ball>

Ball	
- SIZE: int =10 - position: Point - velocity: point - brush: Brush - graphics: Graphics	
+ Ball(Point position, Point velocity, Color colour, Graphics graphics) + Draw() + Move()	

STEP 3: Bounce the balls off the sides of Form1

### Form1 World Ball graphics: Graphicsworld: World - SIZE: int =10 - balls: List<Ball> - position: Point - velocity: point - brush: Brush - graphics: Graphics + Form1() + World(Graphics graphics, Size boundaries) + Ball(Point position, Point velocity, Color colour, Graphics graphics, Size boundaries) + timer1 Tick() + Run() + Draw() + Move() + Bounce()

STEP 4: Add double buffering.

See class handout.

**STEP 5**: Use trackbars to control speed of individual balls