```
import pm.gamewindow.*;

class Sprite
{
   double x, y;
   double richtung;
   double speed;
   GameImage image;

   ...

   double getX()
   {
      return x;
   }

   double getY()
   {
      return y;
   }

   int getWidth()
   {
      return image.getWidth();
   }

   int getHeight()
   {
      return image.getHeight();
   }
   ...
```

```
void aufgabe1()
{
   sp1.setPosition(
      window.getWidth( ) / 2 -
         sp1.getWidth()  / 2,
      window.getHeight() / 2 -
         sp1.getHeight() / 2);
   sp1.setSpeed(10);

   while (true)
   {
      if (window.isKeyDown(
            KeyEvent.VK_RIGHT))
      {
         sp1.setRichtung(0);
         sp1.bewege();
      }

      // ... und entsprechend für
      // LEFT, UP und DOWN ...

      if (sp1.getX() < 0)
      {
         sp1.setX(0);
      }
      if (sp1.getX() >
            window.getWidth() -
               sp1.getWidth())
      {
         sp1.setX(window.getWidth() -
                  sp1.getWidth());
      }
      if (sp1.getY() < 0)
      {
         sp1.setY(0);
      }
      if (sp1.getY() >
            window.getHeight() -
               sp1.getHeight())
      {
         sp1.setY(window.getHeight() -
                  sp1.getHeight());
      }

      window.clear();
      sp1.draw(window);
      window.paintFrame();
   }
}
```

```
void aufgabe2()
{
   sp1.setPosition(100, 100);
   sp2.setPosition(
      window.getWidth() -
      sp2.getWidth() - 100, 100);
   sp3.setPosition(
      window.getWidth() -
      sp3.getWidth() - 100,
      window.getHeight() -
      sp3.getHeight() - 100);
   sp4.setPosition(100,
      window.getHeight() -
      sp4.getHeight() - 100);

   sp1.setSpeed(10);
   sp2.setSpeed(10);
   sp3.setSpeed(10);
   sp4.setSpeed(10);

   sp1.setRichtung(0);
   sp2.setRichtung(90);
   sp3.setRichtung(180);
   sp4.setRichtung(270);

   while (true)
   {
      sp1.bewege();
      sp2.bewege();
      sp3.bewege();
      sp4.bewege();

      if (sp1.getX() < 0)
      {
         sp1.setRichtung(0);
      }
      if (sp1.getX() >
            window.getWidth() -
               sp1.getWidth())
      {
         sp1.setRichtung(180);
      }

      if (sp3.getX() < 0)
      {
         sp3.setRichtung(0);
      }
      if (sp3.getX() >
            window.getWidth() -
               sp3.getWidth())
      {
         sp3.setRichtung(180);
      }

      if (sp2.getY() < 0)
      {
         sp2.setRichtung(90);
      }
      if (sp2.getY() >
            window.getHeight() -
               sp2.getHeight() )
      {
         sp2.setRichtung(270);
      }

      if (sp4.getY() < 0)
      {
         sp4.setRichtung(90);
      }
      if (sp4.getY() >
            window.getHeight() -
               sp4.getHeight())
      {
         sp4.setRichtung(270);
      }

      window.clear();
      sp1.draw(window);
      sp2.draw(window);
      sp3.draw(window);
      sp4.draw(window);
      window.paintFrame();
   }
}
```

```
void aufgabe3()
{
   sp1.setPosition(
      window.getWidth()  / 2 - sp1.getWidth()  / 2,
      window.getHeight() / 2 - sp1.getHeight() / 2);

   // ebenso für die anderen Sprites

   sp1.setSpeed(10);
   sp2.setSpeed(8);
   sp3.setSpeed(6);
   sp4.setSpeed(4);

   while (true)
   {
      sp1.dreheZu(window.getMouseX(), window.getMouseY());
      sp2.dreheZu(sp1.getX(), sp1.getY());
      sp3.dreheZu(sp2.getX(), sp2.getY());
      sp4.dreheZu(sp3.getX(), sp3.getY());

      sp1.bewege();
      sp2.bewege();
      sp3.bewege();
      sp4.bewege();

      window.clear();
      sp1.draw(window);
      sp2.draw(window);
      sp3.draw(window);
      sp4.draw(window);
      window.paintFrame();
   }
}
```

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