**Flyweight Pattern Example: Shape**

**Class: Shape**

**package** shape;

**public** **interface** Shape {

**public** **void** draw();

}

**Class: Circle**

**package** shape;

**public** **class** Circle **implements** Shape{

**private** String color;

**private** **final** **int** x = 10;

**private** **final** **int** y = 20;

**private** **final** **int** radius = 30;

**public** Circle() {

}

**public** Circle( String color ) {

**this**.color = color;

}

**public** String getColor() {

**return** color;

}

**public** **void** setColor( String color ) {

**this**.color = color;

}

@Override

**public** **void** draw() {

System.***out***.println(**this**+" : Circle: Draw() [Color : " + color + ", x : " + x + ", y :" + y + ", radius :" + radius);

}

}

**Class: ShapeFactory**

**package** shape;

**import** java.util.\*;

**public** **class** ShapeFactory {

**private** **static** **final** HashMap<String, Shape> ***shapeMap*** = **new** HashMap<String, Shape>();

**public** **static** Shape getShape( String shapeType ) {

Shape shape=**null**;

**if**( shapeType.equalsIgnoreCase("circle") ) {

shape = (Circle) ***shapeMap***.get("circle");

**if**( shape == **null** )

{

shape = **new** Circle();

***shapeMap***.put("circle", shape);

System.***out***.println("Creating circle object without any color in shapefactory : " + shape + "\n");

}

}

**return** shape;

}

}

**Class: FlyweightPatternDemo**

**package** shape;

**public** **class** FlyweightPatternDemo {

**private** **static** **final** String ***colors***[] = { "Red", "Green", "Blue", "Orange", "Black" };

**public** **static** **void** main( String[] args ) {

System.***out***.println("\n################ Red color Circles ####################");

**for**( **int** i = 0; i < 10; ++i ) {

Circle circle = (Circle) ShapeFactory.*getShape*("circle");

circle.setColor(***colors***[0]);

circle.draw();

}

System.***out***.println("\n############### Green color Circles ####################");

**for**( **int** i = 0; i < 10; ++i ) {

Circle circle = (Circle) ShapeFactory.*getShape*("circle");

circle.setColor(***colors***[1]);

circle.draw();

}

System.***out***.println("\n################ Blue color Circles ####################");

**for**( **int** i = 0; i < 10; ++i ) {

Circle circle = (Circle) ShapeFactory.*getShape*("circle");

circle.setColor(***colors***[2]);

circle.draw();

}

System.***out***.println("\n################ Orange color Circles ####################");

**for**( **int** i = 0; i < 10; ++i ) {

Circle circle = (Circle) ShapeFactory.*getShape*("circle");

circle.setColor(***colors***[3]);

circle.draw();

}

System.***out***.println("\n################ Black color Circles ####################");

**for**( **int** i = 0; i < 10; ++i ) {

Circle circle = (Circle) ShapeFactory.*getShape*("circle");

circle.setColor(***colors***[4]);

circle.draw();

}

}

}

Result:

################ Red color Circles ####################

Creating circle object without any color in shapefactory : shape.Circle@15db9742

shape.Circle@15db9742 : Circle: Draw() [Color : Red, x : 10, y :20, radius :30

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############### Green color Circles ####################

shape.Circle@15db9742 : Circle: Draw() [Color : Green, x : 10, y :20, radius :30

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shape.Circle@15db9742 : Circle: Draw() [Color : Green, x : 10, y :20, radius :30

################ Blue color Circles ####################

shape.Circle@15db9742 : Circle: Draw() [Color : Blue, x : 10, y :20, radius :30

shape.Circle@15db9742 : Circle: Draw() [Color : Blue, x : 10, y :20, radius :30

shape.Circle@15db9742 : Circle: Draw() [Color : Blue, x : 10, y :20, radius :30

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################ Orange color Circles ####################

shape.Circle@15db9742 : Circle: Draw() [Color : Orange, x : 10, y :20, radius :30

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shape.Circle@15db9742 : Circle: Draw() [Color : Orange, x : 10, y :20, radius :30

################ Black color Circles ####################

shape.Circle@15db9742 : Circle: Draw() [Color : Black, x : 10, y :20, radius :30

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