**Factory**

// Interface da fábrica abstrata

interface GUIFactory {

Button createButton();

Checkbox createCheckbox();

}

// Fábrica concreta para Windows

class WinFactory implements GUIFactory {

@Override

public Button createButton() {

return new WinButton();

}

@Override

public Checkbox createCheckbox() {

return new WinCheckbox();

}

}

// Fábrica concreta para Mac

class MacFactory implements GUIFactory {

@Override

public Button createButton() {

return new MacButton();

}

@Override

public Checkbox createCheckbox() {

return new MacCheckbox();

}

}

// Interface de produto Button

interface Button {

void paint();

}

// Botão estilo Windows

class WinButton implements Button {

@Override

public void paint() {

System.out.println("Renderizando botão estilo Windows");

}

}

// Botão estilo Mac

class MacButton implements Button {

@Override

public void paint() {

System.out.println("Renderizando botão estilo MacOS");

}

}

// Interface de produto Checkbox

interface Checkbox {

void paint();

}

// Checkbox estilo Windows

class WinCheckbox implements Checkbox {

@Override

public void paint() {

System.out.println("Renderizando checkbox estilo Windows");

}

}

// Checkbox estilo Mac

class MacCheckbox implements Checkbox {

@Override

public void paint() {

System.out.println("Renderizando checkbox estilo MacOS");

}

}

// Aplicação que usa a fábrica

class Application {

private GUIFactory factory;

private Button button;

private Checkbox checkbox;

public Application(GUIFactory factory) {

this.factory = factory;

}

public void createUI() {

this.button = factory.createButton();

this.checkbox = factory.createCheckbox();

}

public void paint() {

button.paint();

checkbox.paint();

}

}

// Classe configuradora

public class ApplicationConfigurator {

public static void main(String[] args) {

String osName = System.getProperty("os.name").toLowerCase();

GUIFactory factory;

if (osName.contains("win")) {

factory = new WinFactory();

} else if (osName.contains("mac")) {

factory = new MacFactory();

} else {

throw new RuntimeException("Erro! Sistema operacional desconhecido.");

}

Application app = new Application(factory);

app.createUI();

app.paint();

}

}