**EXERCISE 2:**

**FACTORY METHOD PATTERN EXAMPLE**

// Document.java  
interface Document {  
 void open();  
 void close();  
 void save();  
}  
// WordDocument.java  
class WordDocument implements Document {  
 @Override  
 public void open() {  
 System.*out*.println("Opening Word document...");  
 }  
  
 @Override  
 public void close() {  
 System.*out*.println("Closing Word document...");  
 }  
  
 @Override  
 public void save() {  
 System.*out*.println("Saving Word document...");  
 }  
}  
  
// PdfDocument.java  
class PdfDocument implements Document {  
 @Override  
 public void open() {  
 System.*out*.println("Opening PDF document...");  
 }  
  
 @Override  
 public void close() {  
 System.*out*.println("Closing PDF document...");  
 }  
  
 @Override  
 public void save() {  
 System.*out*.println("Saving PDF document...");  
 }  
}  
  
// ExcelDocument.java  
class ExcelDocument implements Document {  
 @Override  
 public void open() {  
 System.*out*.println("Opening Excel document...");  
 }  
  
 @Override  
 public void close() {  
 System.*out*.println("Closing Excel document...");  
 }  
  
 @Override  
 public void save() {  
 System.*out*.println("Saving Excel document...");  
 }  
}  
// DocumentFactory.java  
abstract class DocumentFactory {  
 public abstract Document createDocument();  
}  
  
// WordDocumentFactory.java  
class WordDocumentFactory extends DocumentFactory {  
 @Override  
 public Document createDocument() {  
 return new WordDocument();  
 }  
}  
  
// PdfDocumentFactory.java  
class PdfDocumentFactory extends DocumentFactory {  
 @Override  
 public Document createDocument() {  
 return new PdfDocument();  
 }  
}  
  
// ExcelDocumentFactory.java  
class ExcelDocumentFactory extends DocumentFactory {  
 @Override  
 public Document createDocument() {  
 return new ExcelDocument();  
 }  
}  
  
  
public class FactoryMethodPatternExample {  
 public static void main(String[] args) {  
 DocumentFactory wordFactory = new WordDocumentFactory();  
 Document wordDocument = wordFactory.createDocument();  
 wordDocument.open();  
 wordDocument.save();  
 wordDocument.close();  
  
 // Create a PDF document  
 DocumentFactory pdfFactory = new PdfDocumentFactory();  
 Document pdfDocument = pdfFactory.createDocument();  
 pdfDocument.open();  
 pdfDocument.save();  
 pdfDocument.close();  
  
 // Create an Excel document  
 DocumentFactory excelFactory = new ExcelDocumentFactory();  
 Document excelDocument = excelFactory.createDocument();  
 excelDocument.open();  
 excelDocument.save();  
 excelDocument.close();  
 }  
}