Project Document

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<u>Objective:</u> Purpose of this document is to give the details of the design patterns used in the project

<u>Project Overview:</u> This is Project where we will be building an "MS Paint"-like application in Java called JPaint

Features to be Created

Pick a shape

- o Ellipse
- o Triangle
- o Rectangle
- Pick a primary colour
- Pick a secondary colour
- Select shading type (outline only, filled-in, outline and filled-in)
- Click and drag to draw a shape
- Click and drag to select shapes
- Click and drag to move selected shapes
- Copy selected shapes
- Paste copied shapes
- Delete selected shapes
- Undo last action
- Redo last action
- Group selected shapes
- Ungroup selected shapes
- Selected shapes have dashed outline

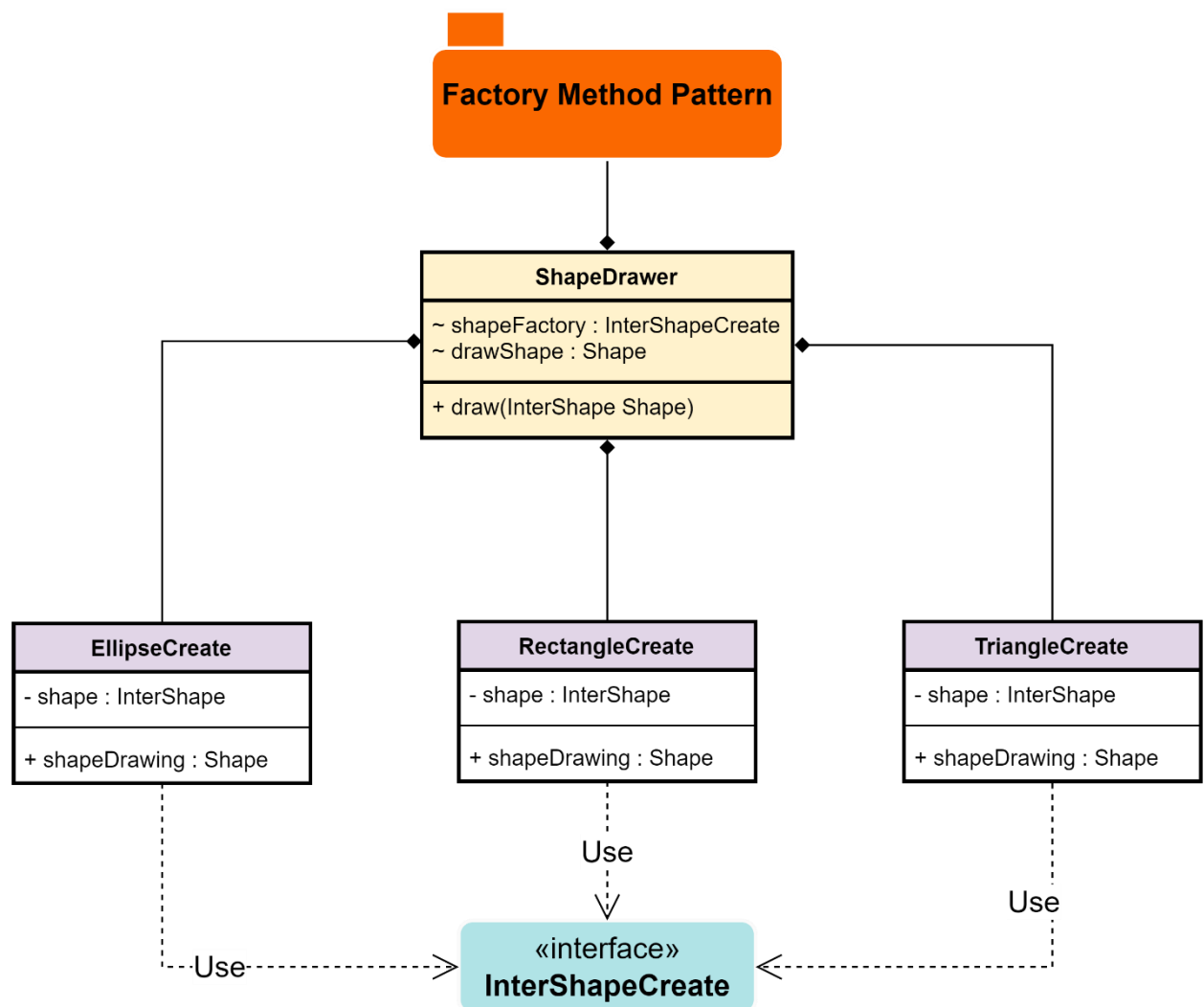Below are the design patterns implemented in the project so far

1. Factory Method Pattern

2. Command Pattern

4. Strategy Pattern

Factory Method

InterShapeCreate, RectangleCreate, EllipseCreate, TriangleCreate, and ShapeDrawer are the classes
I used in the factory method pattern.

2. Command Pattern

Implemented classes "Command History", "ShapeCreate", "MoveShape", "SelectShape", "MouseTracking", "Undo", "Redo", "JPaintController", "Shape", "AllShape", "ShapeDesign" and interfaces "IEventCallBack" and "IUndoable" in command pattern
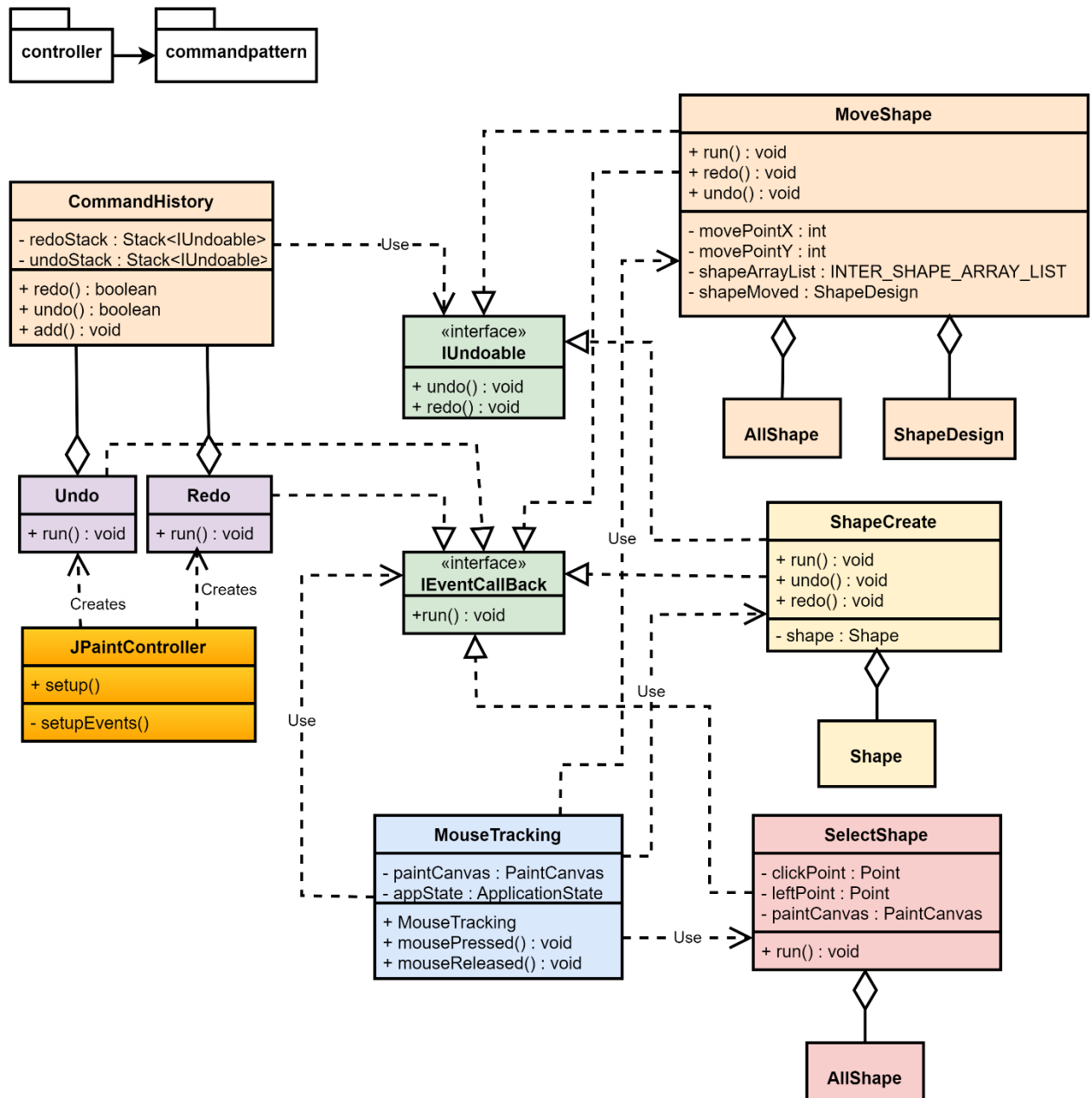
3. Strategy Pattern

Implemented "SolidColor", "Outline" and "OutlineAndSolidFill", "Coloring" classes and Interface "InterColoring" in Strategy Pattern

Coloring

- interColoring : InterColoring

+ shadingColoring(): void
+ implementShading(): void

ShapeDrawer

~ shapeFactory : InterShapeCreate
~ drawShape : Shape

+ draw(InterShape Shape)

«interface»
InterColoring

SolidColor

- shape : InterShape
- shapeCreated : Shape
- g2D : Graphics

+ shadeDrawing : void

Outline

- shape : InterShape
- shapeCreated : Shape
- g2D : Graphics

+ shadeDrawing : void

OutlineAndSolidFill

- shape : InterShape
- shapeCreated : Shape
- g2D : Graphics

+ shadeDrawing : void