Indian Institute of Information Technology, Allahabad
Object Oriented Methodology

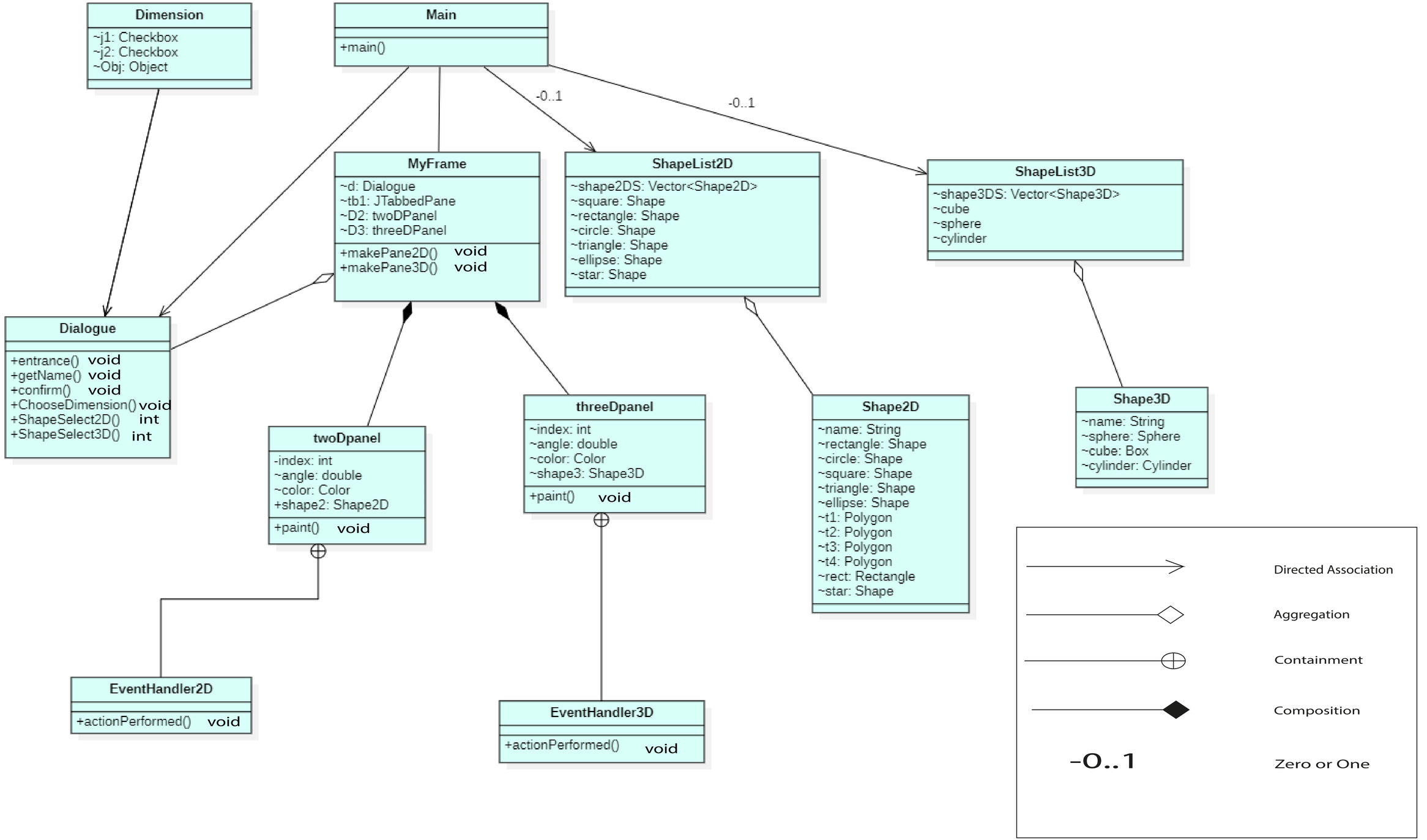
Course Instructors: Prof. O.P. Vyas, Dr. Sonali Agarwal, Dr. Rahul Kala

---

SOFTWARE DRAWING 2D SHAPES & 3D GRAPHICS

GROUP MEMBERS –

- *ISHAAN OBEROI (IIT2021155)*
- *JAI MORYANI (IIT2021122)*
- *ROHAN KUMAR BEHERA (IIT2021145)*


Dimension
~j1: Checkbox
~j2: Checkbox
~Obj: Object
Main
+main()
-0..1
-0..1
MyFrame
~d: Dialogue
~tb1: JTabbedPane
~D2: twoDPanel
~D3: threeDPanel
+makePane2D() void
+makePane3D() void
ShapeList2D
~shape2DS: Vector<Shape2D>
~square: Shape
~rectangle: Shape
~circle: Shape
~triangle: Shape
~ellipse: Shape
~star: Shape
ShapeList3D
~shape3DS: Vector<Shape3D>
~cube
~sphere
~cylinder
Dialogue
+entrance() void
+getName() void
+confirm() void
+ChooseDimension() void
+ShapeSelect2D() int
+ShapeSelect3D() int
twoDpanel
-index: int
~angle: double
~color: Color
+shape2: Shape2D
+paint() void
threeDpanel
~index: int
~angle: double
~color: Color
~shape3: Shape3D
+paint() void
Shape2D
~name: String
~rectangle: Shape
~circle: Shape
~square: Shape
~triangle: Shape
~ellipse: Shape
~t1: Polygon
~t2: Polygon
~t3: Polygon
~t4: Polygon
~rect: Rectangle
~star: Shape
Shape3D
~name: String
~sphere: Sphere
~cube: Box
~cylinder: Cylinder
EventHandler2D
+actionPerformed() void
EventHandler3D
+actionPerformed() void
Directed Association
Aggregation
Containment
Composition
-O..1
Zero or One

CLASS DESCRIPTIONS

1.Main:

a) Description: contains the main executing code for the application. Starts the thread for FX and initialises the Swing components.
b) Inner Classes Used: MyFrame inherited from JFrame.

2.Shape2D:

a) Description: It contains all the 2D shapes present in the given project such as circle, square, rectangle, ellipse, star. This class uses the shape already available in awt.

3.Shape3D:

a) Description: It contains all the 3D shapes used in the project such as sphere, cube and cylinder. Uses classes already available in FX.

4.ShapeList2D:

a) Description: It contains the list of all the 2D shapes present in the given project. Used for selecting which shape to show.

5.ShapeList3D:

b) Description:It contains the list of all the 3D shapes present in the given project. Used for selecting which shape to show.

6.threeDPanel:

a) Description: It contains all the 3D components in the project. This is the canvas for our 2D shapes.
b) Parent Class: JFXPanel
c) Inner Classes Used: EventHandler

7.twoDPanel:

a) Description: contains all the 2D components in the project. This is the component for our 3D shapes.
b) Parent Class: JPanel
c) Inner Classes Used: EventHandler2D

8.Dialogue:

a) Description: Prompts the users for input of name, choice of shapes.

9.Dimension:

a) Description: Contains 2 checkboxes to denote our choice of which type of shapes to rotate.

OBJECT-ORIENTED CLASS RELATIONSHIPS –

Directed Association – This is a one-directional relationship in a class diagram that ensures the flow of control from one to another classifier. The navigability is specified by one of the association ends.

Aggregation – Aggregation implies a relationship where the child can exist independently of the parent.

Composition – Composition implies a relationship where the child cannot exist independent of the parent.

Containment – Uses the class as a data member in the class.

O…1 Relationship – Zero or one objects of this class is takes place in the relationship.