AUTODESK® INVENTOR® 2022 API Object Model

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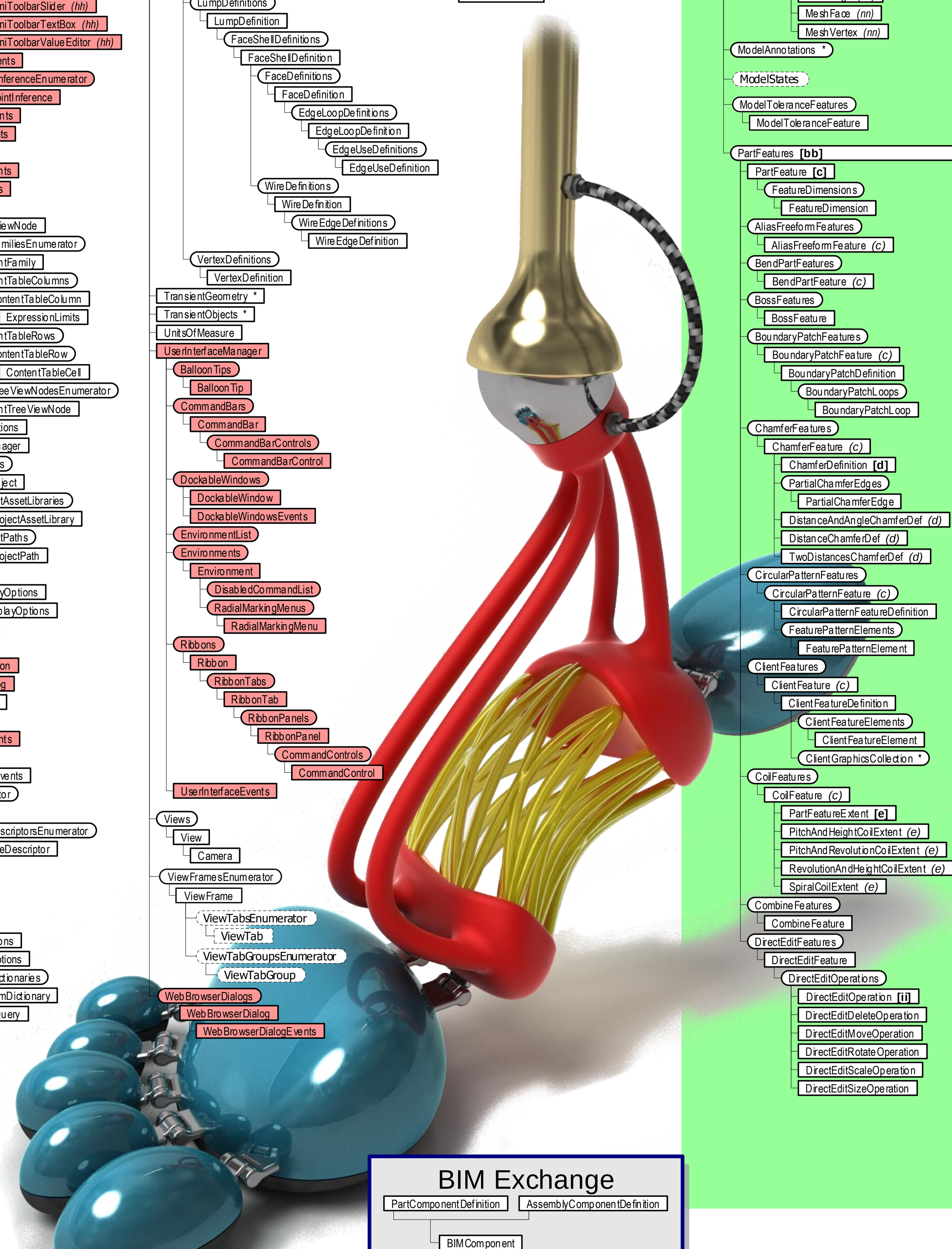
    - TitleBlockDefinition
  - Sheets
    - Sheet
      - AutoCADBlocks
        - AutoCADBlock
      - Balloons
        - Balloon
          - BalloonValueSets
            - BalloonValueSet
          - Leader *
      - Border
      - Centerlines
        - Centerline
      - Centermarks
        - Centermark
      - CustomTables
        - CustomTable
          - Columns
            - Column
          - Rows
            - Row
              - Cell
          - TableFormat
      - DataIO
      - DrawingDimensions
        - DrawingDimension [ff]
          - DimensionText
        - BaselineDimensionSets
          - BaselineDimensionSet
        - GeneralDimensions
          - GeneralDimension (ff)[u]
            - DimensionText
          - AngularGeneralDimension (u)
          - DiameterGeneralDimension (u)
          - LinearGeneralDimension (u)
          - RadiusGeneralDimension (u)
        - OrdinateDimensions
          - OrdinateDimension (ff)
        - OrdinateDimensionSets
          - OrdinateDimensionSet
            - OrdinateDimensionsEnumerator
        - ChainDimensionSets
          - ChainDimensionSet
      - DrawingNotes
        - DrawingNote [aa]
        - BendNotes
          - BendNote (jj)
        - ChamferNotes
          - ChamferNote (jj)
        - GeneralNotes
          - GeneralNote (aa)
            - UnitAttributes
        - HoleThreadNotes
          - HoleThreadNote (jj)
        - LeaderNotes
          - LeaderNote (aa) [jj]
            - Leader *
            - UnitAttributes
        - PunchNotes
          - PunchNote (jj)
      - DrawingSketches
        - DrawingSketch (p) *
          - SketchFillRegions
            - SketchFillRegion
          - SketchHatchRegions
            - SketchHatchRegion
      - DrawingViews
        - DrawingView [v]
          - AutomatedCenterlineSettings
          - BreakOperations
            - BreakOperation
          - BreakOutOperations
            - BreakOutOperation
          - ClientGraphicsCollection *
          - DataIO
          - DrawingCurvesEnumerator
            - DrawingCurve
              - DrawingCurveSegments
                - DrawingCurveSegment
          - DrawingSketches
          - DrawingViewEvents
          - DrawingViewHatchRegions
            - DrawingViewHatchRegion
              - DrawingViewHatchAreas
                - DrawingViewHatchArea
          - DrawingViewLabel
          - GraphicsDataSetsCollection
          - OriginIndicator
        - DetailDrawingView (v)
        - SectionDrawingView (v)
      - FeatureControlFrames
        - FeatureControlFrame
          - FeatureControlFrameRows
            - FeatureControlFrameRow
          - Leader *
      - GeometryIntent
      - HoleTables
        - HoleTable
          - HoleTableColumns
            - HoleTableColumn
              - UnitsFormatting
          - HoleTableRows
            - HoleTableRow
              - HoleTableCell
            - HoleTag
      - PartsLists
        - PartsList
          - PartsListColumns
            - PartsListColumn
          - PartsListRows
            - PartsListRow
              - PartsListCell
      - RevisionTables
        - RevisionTable
          - RevisionTableColumns
            - RevisionTableColumn
          - RevisionTableRows
            - RevisionTableRow
              - RevisionTableCell
      - SketchedSymbols
        - SketchedSymbol
          - Leader *
      - SurfaceTextureSymbols
        - SurfaceTextureSymbol
          - Leader *
          - SurfaceTextureSymbolDefinition [ii]
          - SurfaceTextureANSIDefinition (ii)
          - SurfaceTextureBSIDefinition (ii)
          - SurfaceTextureDINDefinition (ii)
          - SurfaceTextureGBDefinition (ii)
          - SurfaceTextureGOSTDefinition (ii)
          - SurfaceTextureISODefinition (ii)
          - SurfaceTextureJISDefinition (ii)
      - TitleBlock

PresentationDocument (a)

- PresentationDocument (a)
  - DisplaySettings
  - PresentationScenes
    - PresentationScene
      - PresentationComponent
        - PresentationBodiesEnumerator
          - PresentationBody
            - PresentationFacesEnumerator
              - PresentationFace
                - PresentationEdgesEnumerator
                  - PresentationEdge
                    - PresentationVerticesEnumerator
                      - PresentationVertex
        - PresentationComponentsEnumerator
        - PresentationMeshFeatureSetsEnumerator
          - PresentationMeshFeatureSet
            - PresentationMeshFeature
              - PresentationMeshFeatureEntitiesEnumerator
                - PresentationMeshFeatureEntity
      - PresentationSnapshotViews
        - PresentationSnapshotView
          - PresentationTrails
            - PresentationTrail
              - PresentationTrailSegments
                - PresentationTrailSegment



Leaders

- Leader
  - LeaderNode
  - LeaderNodesEnumerator
    - LeaderNode

Attributes

- *Inventor Entity*
  - AttributeSets
    - AttributeSet
      - Attribute

Point Clouds

- PointClouds
  - PointCloud
    - PointCloudCrops
      - PointCloudCrop
    - PointCloudRegions
      - PointCloudRegion
    - PointCloudScans
      - PointCloudScan

Model Annotations

- ModelAnnotations
  - ModelAnnotation [ii]
  - ModelCompositeAnnotations
    - ModelCompositeAnnotation (ii)
      - ModelCompositeAnnotationDefinition
  - ModelDatumIdentifiers
    - ModelDatumIdentifier (ii)
      - ModelDatumIdentifierDefinition
  - ModelDimensions
    - ModelDimension (ii) [jj]
      - ModelDimensionDefinition [kk]
        - AnnotationPlane
        - ModelAnnotationText
        - Tolerance
    - AngularModelDimensions
      - AngularModelDimension (jj)
        - AngularModelDimensionDefinition (kk)
    - DiameterModelDimensions
      - DiameterModelDimension (jj)
        - DiameterModelDimensionDefinition (kk)
    - LinearModelDimensions
      - LinearModelDimension (jj)
        - LinearModelDimensionDefinition (kk)
    - RadiusModelDimensions
      - RadiusModelDimension (jj)
        - RadiusModelDimensionDefinition (kk)
  - ModelFeatureControlFrames
    - ModelFeatureControlFrame (ii)
      - ModelFeatureControlFrameDefinition
        - ModelFeatureControlFrameRows
          - ModelFeatureControlFrameRow
  - ModelGeneralNotes
    - ModelGeneralNote (ii)
      - ModelGeneralNoteDefinition
        - GeneralNoteSymbolDefinitions
          - GeneralNoteSymbolDefinition
  - ModelHoleThreadNotes
    - ModelHoleThreadNote (jj)
      - ModelHoleThreadNoteDefinition (kk)
  - ModelLeaderNotes
    - ModelLeaderNote (ii)
      - ModelLeaderNoteDefinition
        - AnnotationPlane
        - ModelLeader
          - ModelLeaderNodesEnumerator
            - ModelLeaderNode
  - ModelSurfaceTextureSymbols
    - ModelSurfaceTextureSymbol (ii)
      - ModelSurfaceTextureSymbolDefinition

Parameters

- Parameters
  - Parameter [i]
    - CustomPropertyFormat
    - ExpressionList
    - Tolerance
  - CustomParameterGroups
    - CustomParameterGroup
  - DerivedParameterTables
    - DerivedParameterTable
      - DerivedParameters
        - DerivedParameter
  - ModelParameters
    - ModelParameter (i)
  - ParameterTables
    - ParameterTable
      - TableParameters
        - TableParameter (i)
  - ReferenceParameters
    - ReferenceParameter (i)
  - UserParameters
    - UserParameter (i)

Apprentice

- ApprenticeServerComponent
  - ApprenticeServerDocument
    - ApprenticePrintManager
    - ClientViews
      - ClientView
  - ApprenticeServerDrawingDocument
    - ApprenticeDrawingPrintManager
  - DesignProjectManager
    - DesignProjects
      - ProjectPaths
        - ProjectPath
  - FileManager
    - FilesEnumerator
      - File
        - FileDescriptorsEnumerator
          - FileDescriptor
  - FileOptions
  - FileSaveAs
  - SoftwareVersion
  - TransientGeometry *
  - TransientObjects *

2D Sketch

- Sketch [p]
  - DataIO
  - DimensionConstraints
    - DimensionConstraint [s]
    - ArcLengthDimConstraint (s)
    - DiameterDimConstraint (s)
    - EllipseRadiusDimConstraint (s)
    - OffsetDimConstraint (s)
    - RadiusDimConstraint (s)
    - TangentDistanceDimConstraint (s)
    - ThreePointAngleDimConstraint (s)
    - TwoLineAngleDimConstraint (s)
    - TwoPointDistanceDimConstraint (s)
  - GeometricConstraints
    - GeometricConstraint [q]
    - CoincidentConstraint (q)
    - CollinearConstraint (q)
    - ConcentricConstraint (q)
    - EqualLengthConstraint (q)
    - EqualRadiusConstraint (q)
    - GroundConstraint (q)
    - HorizontalAlignConstraint (q)
    - HorizontalConstraint (q)
    - MidpointConstraint (q)
    - OffsetConstraint (q)
    - ParallelConstraint (q)
    - PatternConstraint (q)
    - PerpendicularConstraint (q)
    - SmoothConstraint (q)
    - SplineFitPointConstraint (q)
    - SymmetryConstraint (q)
    - TangentSketchConstraint (q)
    - VerticalAlignConstraint (q)
    - VerticalConstraint (q)
  - Profiles
    - Profile
      - ProfilePath
        - ProfileEntity
        - TextBox
      - RegionProperties
      - Wires
        - Wire
  - SketchEntitiesEnumerator
    - SketchEntity [r]
  - SketchArcs
    - SketchArc (r)
  - SketchCircles
    - SketchCircle (r)
  - SketchControlPointSplines
    - SketchControlPointSpline (r)
  - SketchEllipses
    - SketchEllipse (r)
  - SketchEllipticalArcs
    - SketchEllipticalArc (r)
  - SketchEquationCurves
    - SketchEquationCurve (r)
  - SketchFixedSplines
    - SketchFixedSpline (r)
  - SketchImages
    - SketchImage
  - SketchLines
    - SketchLine (r)
  - SketchOffsetSplines
    - SketchOffsetSpline (r)
  - SketchPoints
    - SketchPoint (r)
  - SketchSplines
    - SketchSpline (r)
      - SketchSplineHandle
  - TextBoxes
    - TextBox

3D Sketch

- Sketch3D
  - Profiles3D
    - Profile3D
      - ProfilePath3D
        - ProfileEntity3D
      - Wires
        - Wire
  - DimensionConstraints3D
    - DimensionConstraint3D [y]
    - LineLengthDimConstraint3D (y)
    - PointAndPlaneDistanceDimConstraint3D (y)
    - RadiusDimConstraint3D (y)
    - SplineLengthDimConstraint3D (y)
    - TwoLineAngleDimConstraint3D (y)
    - TwoPointDistanceDimConstraint3D (y)
  - GeometricConstraints3D
    - GeometricConstraint3D [h]
    - BendConstraint (h)
    - CoincidentConstraint3D (h)
    - CollinearConstraint3D (h)
    - CustomConstraint3D (h)
    - EqualConstraint3D (h)
    - GroundConstraint3D (h)
    - HelicalConstraint3D (h)
    - OnFaceConstraint3D (h)
    - ParallelConstraint3D (h)
    - ParallelToXAxisConstraint3D (h)
    - ParallelToXYPlaneConstraint3D (h)
    - ParallelToXZPlaneConstraint3D (h)
    - ParallelToYAxisConstraint3D (h)
    - ParallelToYZPlaneConstraint3D (h)
    - ParallelToZAxisConstraint3D (h)
    - PerpendicularConstraint3D (h)
    - SmoothConstraint3D (h)
    - SplineFitPointsConstraint3D (h)
    - TangentConstraint3D (h)
  - HelicalCurves
    - HelicalCurve
      - HelicalCurveDefinition [oo]
        - HelicalCurveShapeDefinitionRows
          - HelicalCurveShapeDefinitionRow
      - HelicalCurveConstantShapeDefinition (oo)
      - HelicalCurveVariableShapeDefinition (oo)
  - IntersectionCurves
    - IntersectionCurve
  - OnFaceCurves
    - OnFaceCurve (j)
  - ProjectToSurfaceCurves
    - ProjectToSurfaceCurve
  - SilhouetteCurves
    - SilhouetteCurve
  - SketchControlPointSplines3D
    - SketchControlPointSpline3D (j)
  - SketchEntities3DEnumerator
    - SketchEntity3D [j]
  - SketchArcs3D
    - SketchArc3D (j)
  - SketchCircles3D
    - SketchCircle3D (j)
  - SketchEllipses3D
    - SketchEllipse3D (j)
  - SketchEllipticalArcs3D
    - SketchEllipticalArc3D (j)
  - SketchEquationCurves3D
    - SketchEquationCurve3D (j)
  - SketchFixedSplines3D
    - SketchFixedSpline3D (j)
  - SketchLines3D
    - SketchLine3D (j)
  - SketchPoints3D
    - SketchPoint3D (j)
  - SketchSplines3D
    - SketchSpline3D (j)
      - SketchSplineHandle3D

BIM Exchange

- PartComponentDefinition
- AssemblyComponentDefinition
  - BIMComponent
    - BIMComponentDescription
      - BIMCompoonentPropertySets
        - BIMCompoonentPropertySet
          - BIMComponentProperty
    - BIMConnectorLinks
      - BIMConnectorLink
    - BIMConnectors
      - BIMConnector
        - BIMConnectorDefinition
      - BIMCableTrayConnector
        - BIMCableTrayConnectorDefinition
      - BIMConduitConnector
        - BIMConduitConnectorDefinition
      - BIMDuctConnector
        - BIMDuctConnectorDefinition
      - BIMElectricalConnector
        - BIMElectricalConnectorDefinition
      - BIMPipeConnector
        - BIMPipeConnectorDefinition

Dynamic Simulation

- SimulationManager
  - DynamicSimulations
    - DynamicSimulation
      - DSJoints
        - DSJoint
          - DSJointDefinition
            - DSDegreesOfFreedom
              - DSDegreeOfFreedom
                - DSResults
                  - DSResult
                - DSValue
                  - DSValueGraph
      - DSLoads
        - DSLoad
          - DSLoadDefinition
            - DSValue
              - DSValueGraph
      - DSSettings

Assets

(Materials and Appearances)

- Asset
  - AssetValue [mm]
  - BooleanAssetValue (mm)
  - ChoiceAssetValue (mm)
  - ColorAssetValue (mm)
  - FilenameAssetValue (mm)
  - FloatAssetValue (mm)
  - IntegerAssetValue (mm)
  - ReferenceAssetValue (mm)
  - StringAssetValue (mm)
  - TextureAssetValue (mm)
    - AssetTexture

B-Rep

- SurfaceBodies
  - SurfaceBody
    - DataIO
    - FaceShells
      - FaceShell
        - Faces
          - Face
            - EdgeLoops
              - EdgeLoop
                - Edges
                  - Edge
                    - CurveEvaluator
                    - Vertices
                      - Vertex
                    - Wire
            - EdgeUses
              - Curve2dEvaluator
              - EdgeUse
                - Wire
            - SurfaceEvaluator
    - Wires
      - Wire

Client Graphics

- DrawingView / ComponentDefinition / Sheet
  - ClientGraphicsCollection
  - InteractionGraphics
    - ClientGraphics
      - GraphicsNode
        - GraphicsPrimitive [gg]
        - CurveGraphics (gg)
        - LineGraphics (gg)
        - LineStripGraphics (gg)
        - PointGraphics (gg)
        - ComponentGraphics
        - SurfaceGraphics
          - SurfaceGraphicsEdgeList
            - SurfaceGraphicsEdge
          - SurfaceGraphicsFaceList
            - SurfaceGraphicsFace
          - SurfaceGraphicsVertexList
            - SurfaceGraphicsVertex
        - TextGraphics
        - TriangleFanGraphics
          - GraphicsColorMapper
          - GraphicsTextureCoordinateSet
        - TriangleGraphics
          - GraphicsColorMapper
          - GraphicsTextureCoordinateSet
        - TriangleStripGraphics
          - GraphicsColorMapper
          - GraphicsTextureCoordinateSet
        - ViewList
- Document / DrawingView / Sheet
  - GraphicsDataSetsCollection
  - InteractionGraphics
    - GraphicsDataSets
      - GraphicsDataSet [dd]
      - GraphicsColorMapper
      - GraphicsColorSet (dd)
      - GraphicsCoordinateSet (dd)
      - GraphicsImageSet (dd)
      - GraphicsIndexSet (dd)
      - GraphicsNormalSet (dd)
      - GraphicsTextureCoordinateSet (dd)

Transient Geometry & Objects

Geometry

- Arc2d
- BSplineCurve2d
- BSplineCurve2dDefinition
- Circle2d
- EllipseFull2d
- EllipticalArc2d
- Line2d
- LineSegment2d
- Point2d
- Polyline2d
- Arc3d
- BSplineCurve
- BSplineCurveDefinition
- Circle
- EllipseFull
- EllipticalArc
- Line
- LineSegment
- Point
- Polyline3d
- BSplineSurface
- Cone
- Cylinder
- EllipticalCone
- EllipticalCylinder
- Plane
- Sphere
- Torus

Math Objects

- Box
- Box2d
- Matrix
- Matrix2d
- OrientedBox
- UnitVector
- UnitVector2d
- Vector
- Vector2d

Utility Objects

- Camera
- Color
- DataMedium
- EdgeCollection
- FaceCollection
- FileMetadata
- NameValueMap
- ObjectCollection
- ObjectCollectionByVariant
- ObjectsEnumeratorByVariant
- TranslationContext

Legend

- Collection Objects: (Objects)
- Standard Objects: [Object]
- New Objects in this release: (dashed) Object
- User Interface Related Objects: (red)
- Part Document Related Objects: (green)
- Assembly Document Related Objects: (blue)
- Drawing Document Related Objects: (yellow)
- Presentation Document Related Objects: (orange)
- Base Class Objects: [x]
- Derived Objects: (x)

See related object model diagram for this object at the bottom of the poster: *