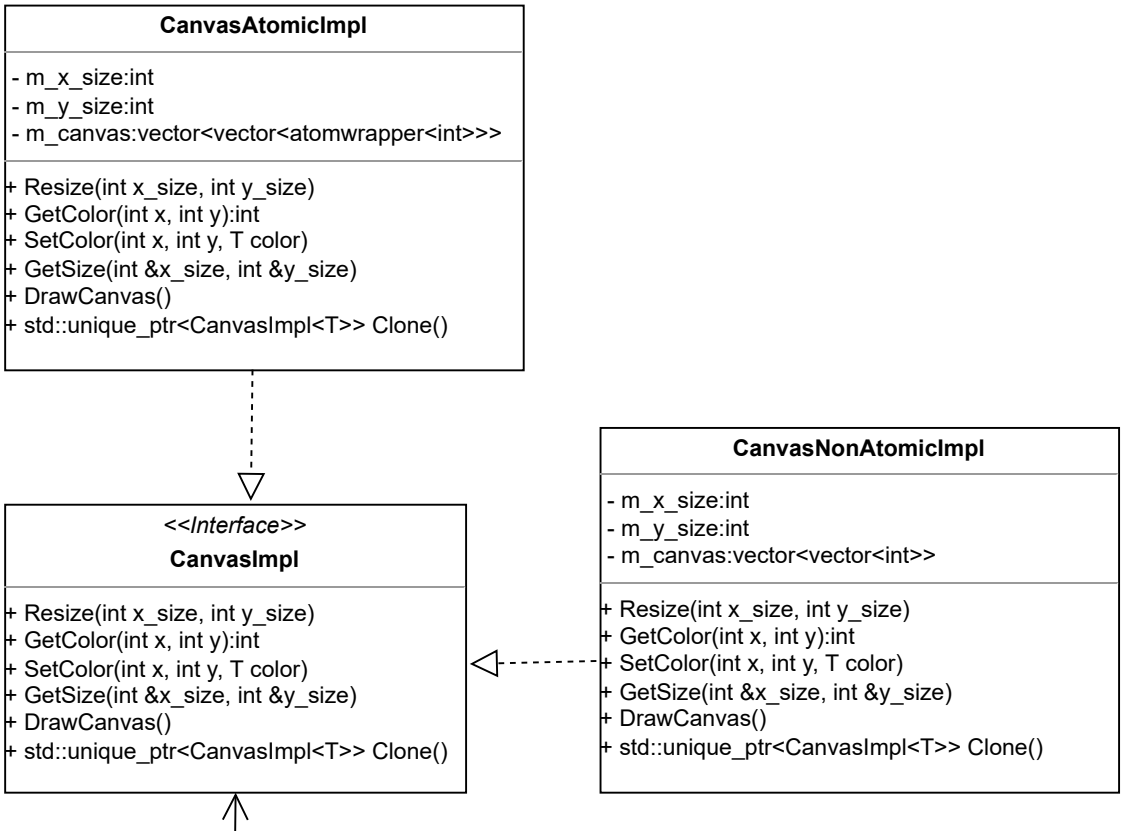
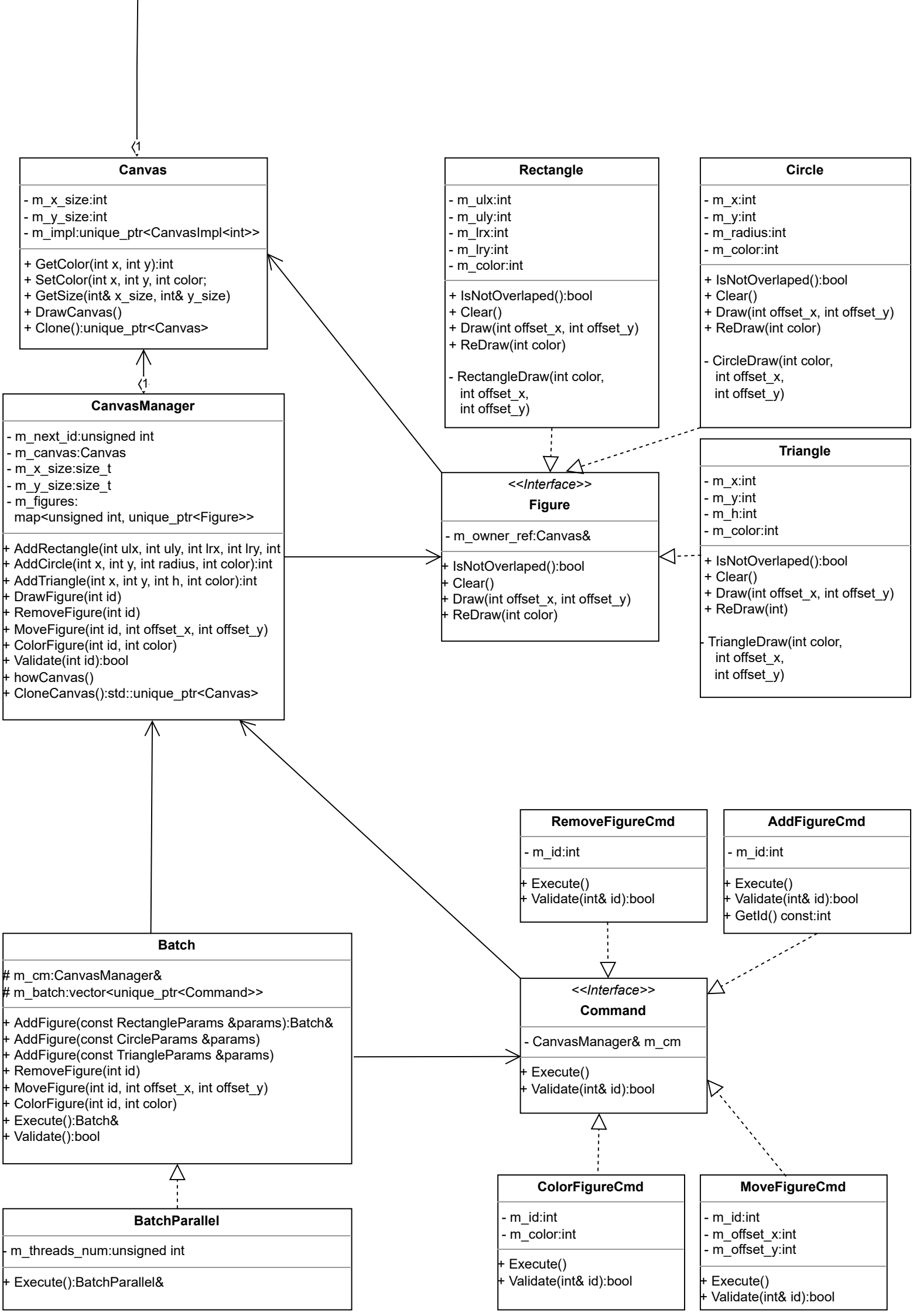
Figures Multithread
This is a simple package for creating and manipulating geometric figures. The user can add his own figures in accordance with the "Figure" interface. Figure manipulation is done in batch form using the "Batch" class. Batch runs commands that implement the "Command" interface. Batch can use sequential or multithread policy. The user can add his own command in accordance with the "Command" interface. Batch implements the "Execute" and "Validate" methods for executing commands and checking for overlapping figures after manipulations.




Canvas
- m_x_size:int
- m_y_size:int
- m_impl:unique_ptr<CanvasImpl<int>>
+ GetColor(int x, int y):int
+ SetColor(int x, int y, int color;
+ GetSize(int& x_size, int& y_size)
+ DrawCanvas()
+ Clone():unique_ptr<Canvas>
Rectangle
- m_ulx:int
- m_uly:int
- m_lrx:int
- m_lry:int
- m_color:int
+ IsNotOverlaped():bool
+ Clear()
+ Draw(int offset_x, int offset_y)
+ ReDraw(int color)
- RectangleDraw(int color,
int offset_x,
int offset_y)
Circle
- m_x:int
- m_y:int
- m_radius:int
- m_color:int
+ IsNotOverlaped():bool
+ Clear()
+ Draw(int offset_x, int offset_y)
+ ReDraw(int color)
- CircleDraw(int color,
int offset_x,
int offset_y)
CanvasManager
- m_next_id:unsigned int
- m_canvas:Canvas
- m_x_size:size_t
- m_y_size:size_t
- m_figures:
map<unsigned int, unique_ptr<Figure>>
+ AddRectangle(int ulx, int uly, int lrx, int lry, int
+ AddCircle(int x, int y, int radius, int color):int
+ AddTriangle(int x, int y, int h, int color):int
+ DrawFigure(int id)
+ RemoveFigure(int id)
+ MoveFigure(int id, int offset_x, int offset_y)
+ ColorFigure(int id, int color)
+ Validate(int id):bool
+ howCanvas()
+ CloneCanvas():std::unique_ptr<Canvas>
<<Interface>>
Figure
- m_owner_ref:Canvas&
+ IsNotOverlaped():bool
+ Clear()
+ Draw(int offset_x, int offset_y)
+ ReDraw(int color)
Triangle
- m_x:int
- m_y:int
- m_h:int
- m_color:int
+ IsNotOverlaped():bool
+ Clear()
+ Draw(int offset_x, int offset_y)
+ ReDraw(int)
- TriangleDraw(int color,
int offset_x,
int offset_y)
RemoveFigureCmd
- m_id:int
+ Execute()
+ Validate(int& id):bool
AddFigureCmd
- m_id:int
+ Execute()
+ Validate(int& id):bool
+ GetId() const:int
Batch
m_cm:CanvasManager&
m_batch:vector<unique_ptr<Command>>
+ AddFigure(const RectangleParams &params):Batch&
+ AddFigure(const CircleParams &params)
+ AddFigure(const TriangleParams &params)
+ RemoveFigure(int id)
+ MoveFigure(int id, int offset_x, int offset_y)
+ ColorFigure(int id, int color)
+ Execute():Batch&
+ Validate():bool
<<Interface>>
Command
- CanvasManager& m_cm
+ Execute()
+ Validate(int& id):bool
BatchParallel
- m_threads_num:unsigned int
+ Execute():BatchParallel&
ColorFigureCmd
- m_id:int
- m_color:int
+ Execute()
+ Validate(int& id):bool
MoveFigureCmd
- m_id:int
- m_offset_x:int
- m_offset_y:int
+ Execute()
+ Validate(int& id):bool