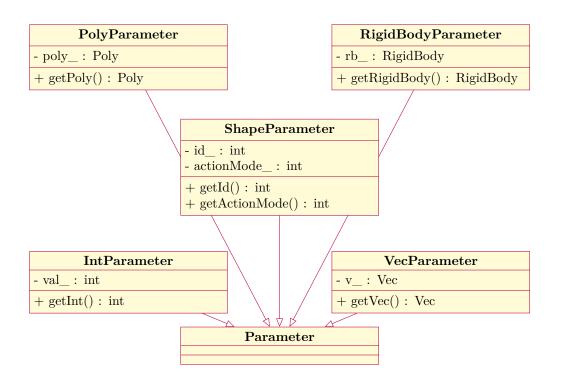
1 Common Layer

RigidBody - m_Shape : Poly - m_Force : Vec - m_Veolocity : Vec - m_Mass : double - m_InertiaConstant : double - m_AngularVelocity : double - m_Id : int - m_CoolDown : int - applyForce() : void - move(dt:double) : void - accelerate(dt:double) : void - rotate(dt:double) : void - collide(Tag:RigidBody) : bool

m_Shape

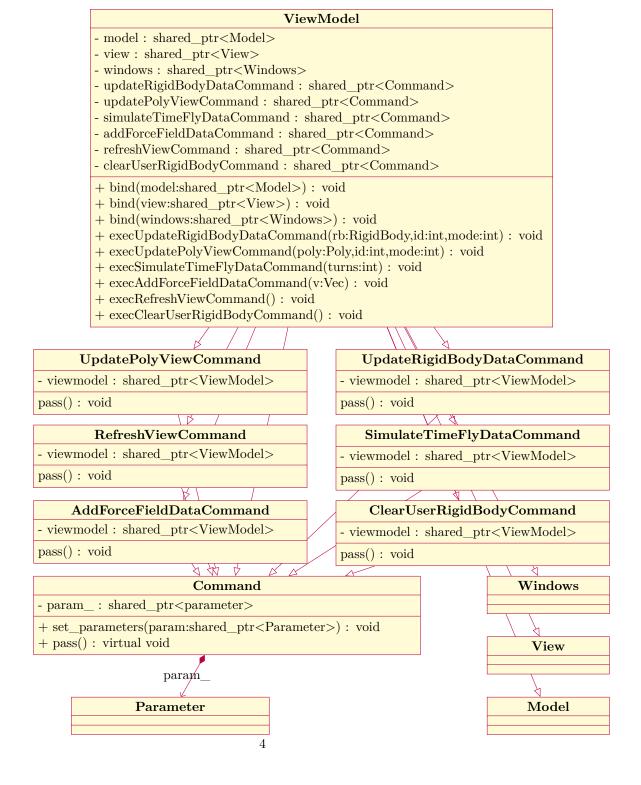
Poly Segment - m_CenterPoint: Vec - m Vertex1 : Vec - m_{point} : vector < Vec >- m_Vertex2 : Vec - m PointNum: int + getV1() : Vec- m area: double + getV2() : Vec+ calcCenterPointAndArea(): void + setV1(v:Vec) : bool+ setPoly(center:Vec,pol:vector<Vec>): bool + setV2(v:Vec) : bool $+ inPoly_Vec(v:Vec) : bool$ + getNearestPoint(v:Vec) : Vec + getInterSegment(p:Poly) : Segment + rotate(center:Vec,angle:double): bool + move(v:Vec) : bool m_vertex1 m CenterPoint m vertex2 m_Point \mathbf{Vec} - $m_X : double$ - m Y: double + setX(x:double) : bool+ setY(y:double) : bool+ getX() : double+ getY() : double+ getAngle(): double + getMagnitude() : double + rotate(center:Vec,angle:double): void



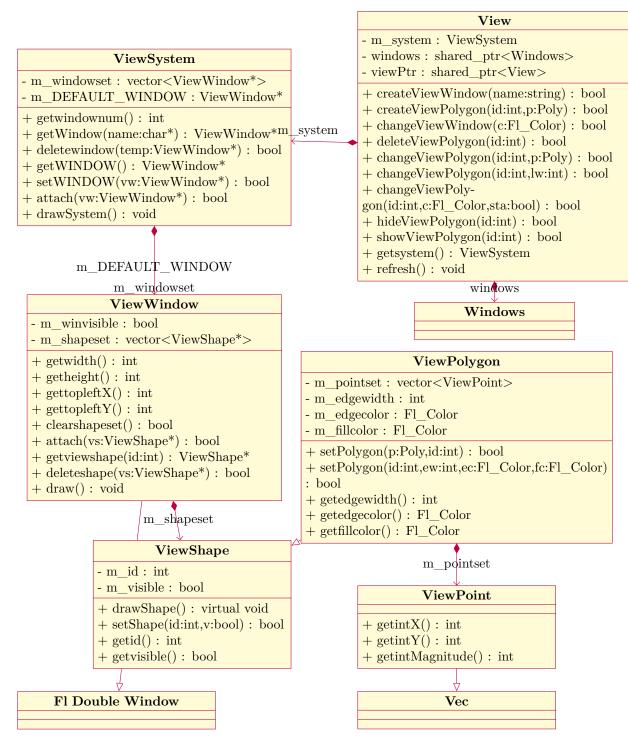
2 Model Layer

Model - physicsSpace : PhysicsSpace - updatePolyViewCommand : shared ptr<Command> - refreshViewCommand : shared_ptr<Command> + createRigidBodyData(rb:RigidBody): void + adjustRigidBodyData(rb:RigidBody,id:int): void + deleteRigidBodyData(id:int) : void + simulateTimeFlyData(turns:int) : void + addForceFieldData(v:Vec) : void + clearUserRigidBody(): void + onCreatePolyView(poly:Poly,id:int) : void + onAdjustPolyView(poly:Poly,id:int): void + onDeletePolyView(id:int): void + onCreateInvisiblePolyView(poly:Poly,id:int) : void + onRefreshView(): void physicsSpace **PhysicsSpace** - m_RigidBodySet : vector<RigidBody> - m_Force : Vec - m Stepsize : double + addRigid-Body(InputRigidBody:RigidBody): + deleteRigidBody(InputId:int) : void + setStepSize(dt:double) : void + goStep(n:int) : void+ addFprceField(InputForce:Vec): void + setForceField(InputForce:Vec): void + clearNonINFRigidBody(): void m_RigidBodySet RigidBody

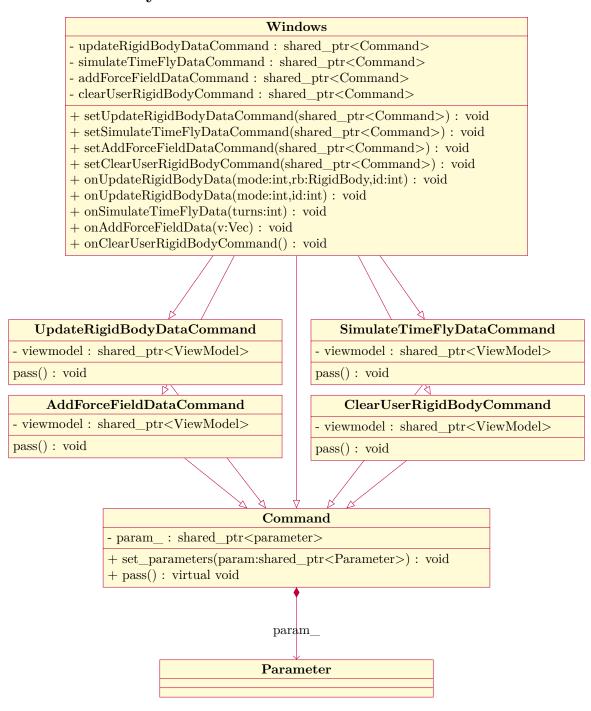
3 ViewModel Layer



4 View Layer



5 Window Layer



6 App Layer

