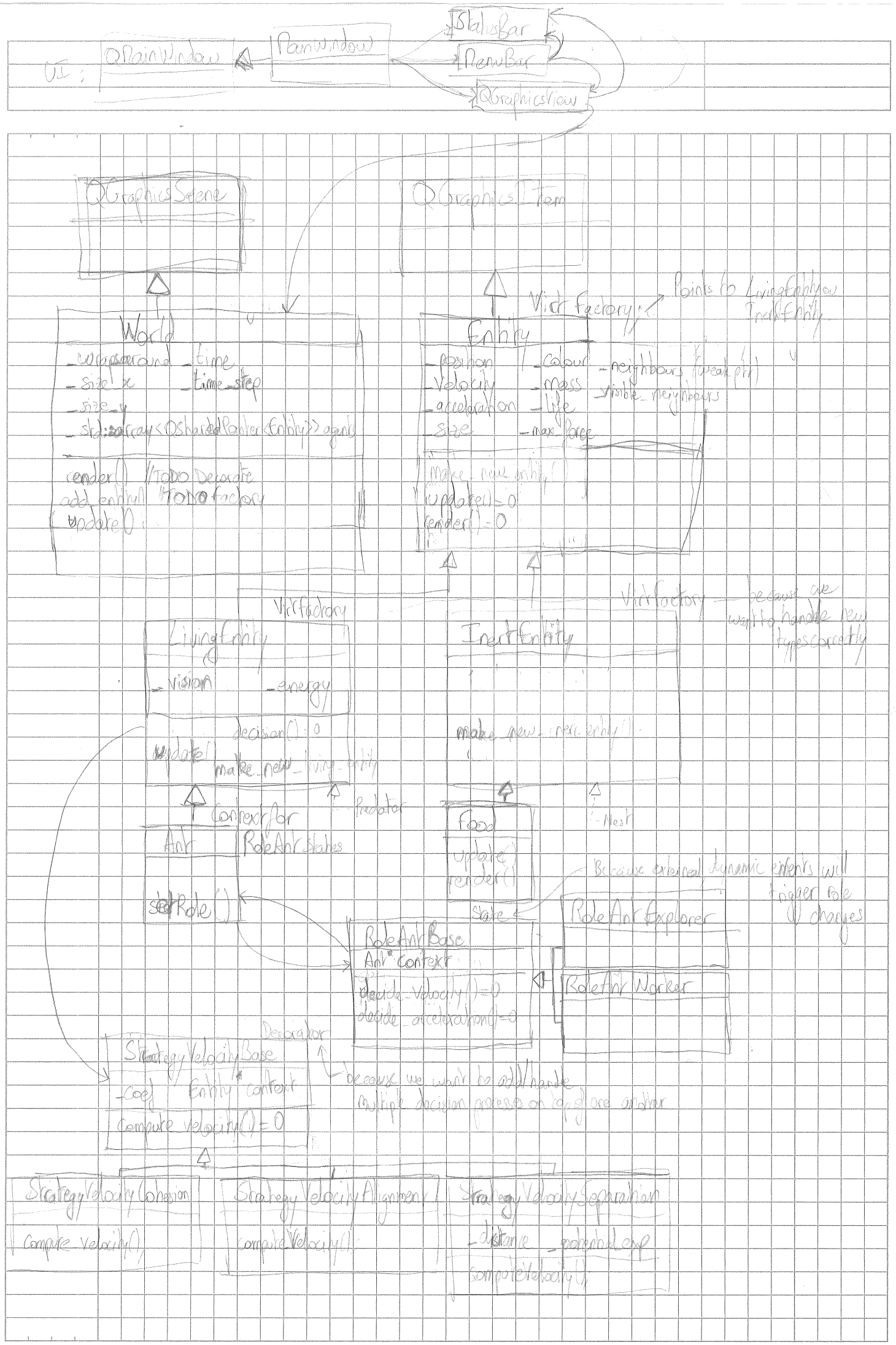
UI:
QMainWindow
MainWindow
StatusBar
MenuBar
QGraphicsView
QGraphicsScene
QGraphicsItem
World
_wraparound
_time
_size_x
_time_step
_size_y
_std::array<QSharedPtr<Entity>> agents
render() //TODO Decorate
add_entity() //TODO factory
update()
Virt factory
Points to LivingEntity or InertEntity
Entity
_position
_colour
_neighbours (weak ptr)
_velocity
_mass
_visible_neighbours
_acceleration
_life
_size
_max_force
make_new_entity()
update()=0
render()=0
Virt factory
LivingEntity
_vision
_energy
decision()=0
update()
make_new_living_entity()
Virt factory
because we want to handle new types correctly
InertEntity
make_new_inert_entity()
Context for
Ant
RoleAntStates
setRole()
Predator
Food
update()
render()
_Nest
_State
Because external dynamic events will trigger role changes
RoleAntBase
Ant* context
decide_velocity()=0
decide_acceleration()=0
RoleAntExplorer
RoleAntWorker
Decorator
StrategyVelocityBase
_coef
Entity* context
compute_velocity()=0
because we want to add/handle multiple decision processes on top of one another
StrategyVelocityCohesion
compute_velocity()
StrategyVelocityAlignment
computeVelocity()
StrategyVelocitySeparation
_distance
_potential_exp
computeVelocity()