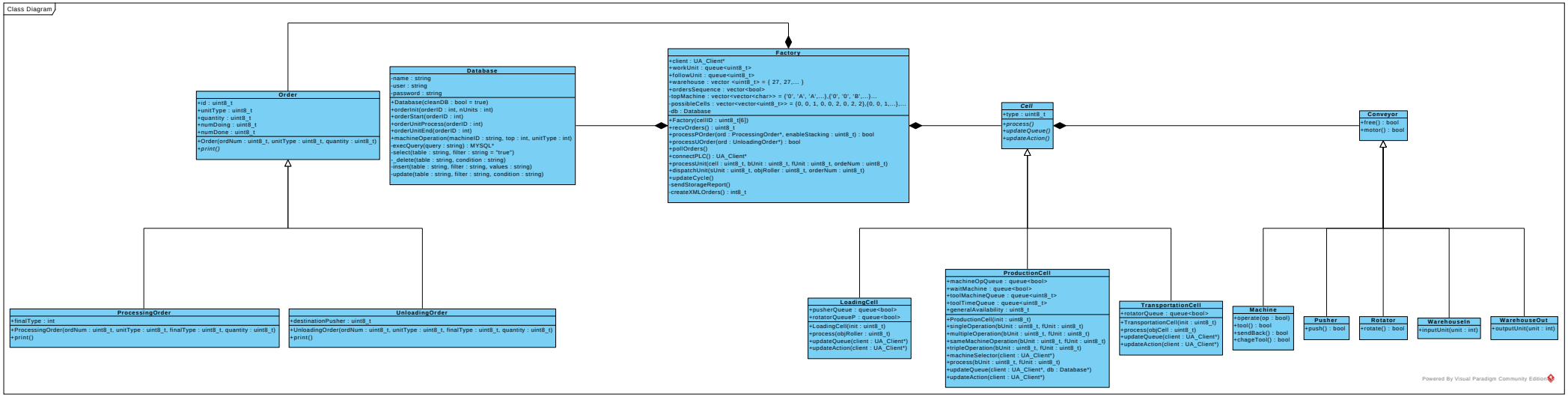
Class Diagram
Order
+id : uint8_t
+unitType : uint8_t
+quantity : uint8_t
+numDoing : uint8_t
+numDone : uint8_t
+Order(ordNum : uint8_t, unitType : uint8_t, quantity : uint8_t)
+print()
Database
-name : string
-user : string
-password : string
+Database(cleanDB : bool = true)
+orderInit(orderID : int, nUnits : int)
+orderStart(orderID : int)
+orderUnitProcess(orderID : int)
+orderUnitEnd(orderID : int)
+machineOperation(machineID : string, top : int, unitType : int)
-execQuery(query : string) : MYSQL*
-select(table : string, filter : string = "true")
-_delete(table : string, condition : string)
-insert(table : string, filter : string, values : string)
-update(table : string, filter : string, condition : string)
Factory
+client : UA_Client*
+workUnit : queue<uint8_t>
+followUnit : queue<uint8_t>
+warehouse : vector <uint8_t> = { 27, 27,… }
+ordersSequence : vector<bool>
-topMachine : vector<vector<char>> = {'0', 'A', 'A',…},{'0', '0', 'B',…},…
-possibleCells : vector<vector<uint8_t>> = {0, 0, 1, 0, 0, 2, 0, 2, 2},{0, 0, 1,…},…
-db : Database
+Factory(cellID : uint8_t[6])
+recvOrders() : uint8_t
+processPOrder(ord : ProcessingOrder*, enableStacking : uint8_t) : bool
+processUOrder(ord : UnloadingOrder*) : bool
+pollOrders()
+connectPLC() : UA_Client*
+processUnit(cell : uint8_t, bUnit : uint8_t, fUnit : uint8_t, ordeNum : uint8_t)
+dispatchUnit(sUnit : uint8_t, objRoller : uint8_t, orderNum : uint8_t)
+updateCycle()
-sendStorageReport()
-createXMLOrders() : int8_t
Cell
+type : uint8_t
+process()
+updateQueue()
+updateAction()
Conveyor
+free() : bool
+motor() : bool
ProcessingOrder
+finalType : int
+ProcessingOrder(ordNum : uint8_t, unitType : uint8_t, finalType : uint8_t, quantity : uint8_t)
+print()
UnloadingOrder
+destinationPusher : uint8_t
+UnloadingOrder(ordNum : uint8_t, unitType : uint8_t, finalType : uint8_t, quantity : uint8_t)
+print()
LoadingCell
+pusherQueue : queue<bool>
+rotatorQueueP : queue<bool>
+LoadingCell(init : uint8_t)
+process(objRoller : uint8_t)
+updateQueue(client : UA_Client*)
+updateAction(client : UA_Client*)
ProductionCell
+machineOpQueue : queue<bool>
+waitMachine : queue<bool>
+toolMachineQueue : queue<uint8_t>
+toolTimeQueue : queue<uint8_t>
+generalAvailability : uint8_t
+ProductionCell(init : uint8_t)
+singleOperation(bUnit : uint8_t, fUnit : uint8_t)
+multipleOperation(bUnit : uint8_t, fUnit : uint8_t)
+sameMachineOperation(bUnit : uint8_t, fUnit : uint8_t)
+tripleOperation(bUnit : uint8_t, fUnit : uint8_t)
+machineSelector(client : UA_Client*)
+process(bUnit : uint8_t, fUnit : uint8_t)
+updateQueue(client : UA_Client*, db : Database*)
+updateAction(client : UA_Client*)
TransportationCell
+rotatorQueue : queue<bool>
+TransportationCell(init : uint8_t)
+process(objCell : uint8_t)
+updateQueue(client : UA_Client*)
+updateAction(client : UA_Client*)
Machine
+operate(op : bool)
+tool() : bool
+sendBack() : bool
+chageTool() : bool
Pusher
+push() : bool
Rotator
+rotate() : bool
WarehouseIn
+inputUnit(unit : int)
WarehouseOut
+outputUnit(unit : int)
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