eng.understanding_blockchain_dynamical_structures

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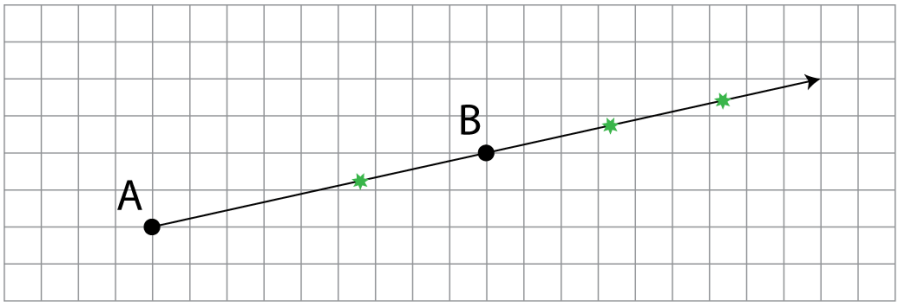
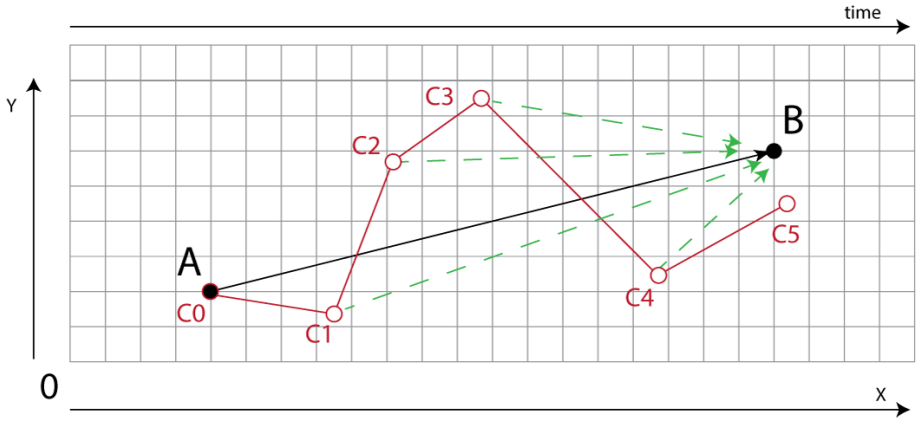
Understanding blockchain. Dynamical structures.

If any structure (chain) do not have fixed or statical state (chain of elements) but have the defined pattern (block) for changing the states of the structure. This kind of defined pattern might to contain mechanism that is allowing to change values in the pattern or reconstruct it at all within inherited relations to the previous states.



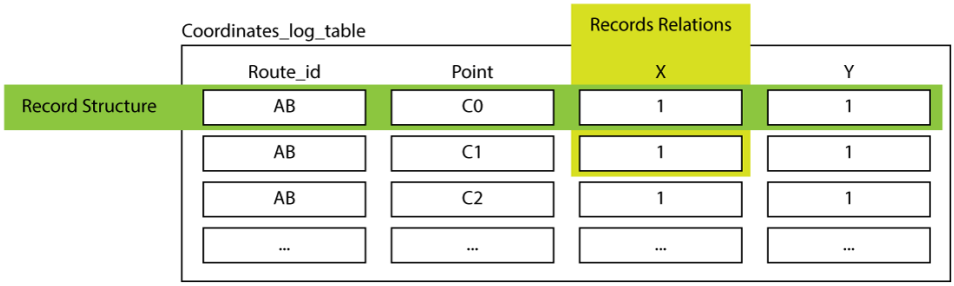
The illustration of the dynamical structure might be the trajectory of object's movement. But not the trajectory from point A to point B in precise (this is the statical structure), but the movement trajectory in direction to point B from point A, when an object might to stop movement before or after point B. The final state (chain of elements - coordinates) of trajectory in case of moving in direction - not defined, but fixed by formula (block) and coordinates of the point of the start (point A). The object got a tendency to change the state -coordinates in direction of point B.

In other words, the basis - is not the final state of trajectory, but the pattern for changing states, formula of movement that is containing: direction and statical structure "defined route from A to B" that is describing "idea" (read the article "Understanding blockchain."). Be following mathematical slang, you've got to be more concerned about function itself then about results of function's calculation based on income values. Income values might be changed and result might be different.



The real world difference between statical and dynamical structures became clear after getting example of the navigational application for any vessels that is sailing around the world when the navigation system monitoring current vessel position relatively to the planed and defined path that is containing intermediate points. This defined path is the statical structure, the the real trajectory is the dynamical structure that is blocked by formula that is containing this standard and coordinates of the start point. Registering the current vessel position is the event flow only where only one type of events (coordinates), and based on this events the vessel system is recalculating the block (the movement formula that is containing bearing value and defined path) if need after getting every coordinate, but not the gotten previously values of coordinate.

In case of making more complexity of the formula, might be added manoeuvring parameters of the vessel within maximal speed and if you trying to add the value C4 just after C1 to the table the will be checking of possibility of this coordinate based on previous and if it's impossible there going to be risen the alarm or error handling. It looks like making relation between coordinates.



Be turned back to the IT field, the any kind of the DB-table (SQL or noSQL) is the dynamical structure (chain of records) on the level "table" (read the article "Understanding blockchain.") that is blocked by the structure of the record (standard of the record). In most cases the developers do not know the final count of the records in the table, therefore final state of the table - impossible to define, but no-one is blocking developer to define the relations between records, when the block is the formula that is describing this relation.

The dynamical blockchain structures is a lot cheaper then in maintaining then statical in most cases connected to storing data. Especially in case of big-data. "Event Flow" example of dynamical structure organisation. In case of necessity might be added any kind of crypto to the any elements.

This example developed based on 2D schema of the data-structure. In case of distributed solution might be used 3D, when going to be added related table located anywhere else. The best option for developing this kind of solution is Erlang because it's donating distribution mechanism from begin.