THE ART OF ALGEBRAIC MODELING

V.M. Hlushkov paid quite a lot of attention to the problems of biology. He was one of the first to notice that the explanation of many biological phenomena can be explained in terms of quantum interactions, which predicted quantum biology. He considered the interaction of biological objects as the interaction of certain systems that can be formalized at some level of abstraction. In particular, the theory of automata was most suitable for describing some biological entities and their interactions. The development of modern programming, in particular the object-oriented approach, and modeling methods, such as symbolic and algebraic modeling, have made it possible to create models in a wide variety of fields of human activity.

CELL MODELING

The proposed task is the problem of creation a formal environment, some microcosm of the interaction of cells and their components. Such a formalization at a given level of abstraction will make it possible to solve the problem of analyzing the properties of the created environment and modeling, which can lead to unexpected discoveries.

Problem

Build an object-oriented cell model and provide modelling of cell division or other phases of the cell cycle (cell growth, synthsis period).

The model is implemented in any OOP language. Cell elements are implemented as classes with corresponding methods of their interactions with other classes.

The assessment criterion is the completeness and presentation of modeling results. Preference is given to working programs that run and implement the simulation stages.