Visual development environment and visual programming as an effective tool for data collection and analysis

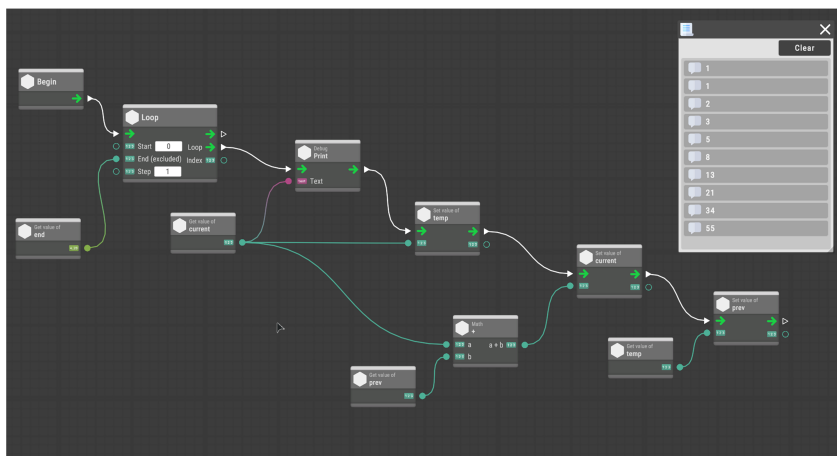V. F. Zinnatullin, S. N. Koledin

Visual programming language

Fig. 1. Algorithm for finding Fibonacci numbers
on the prototype of a visual programming language

Effects of visual programming on user productivity as opposed to classical programming

Visual programming		Classical programming	
Pros	**Cons**	**Pros**	**Cons**
Ease of use	Ineffective for universal execution	Code compactness	Possible syntax errors
It is easy to debug the algorithm due to the visual display of the program operation	More cumbersome code than classic code	Understandable by all programmers as it is an industry standard	
No syntax errors		The code is text, making it easy to share	
Great for solving narrow tasks			

Fig. 2. Comparison of the pros and cons of visual and classical programming

Methods of data collecting and processing to find the optimal set of software functions
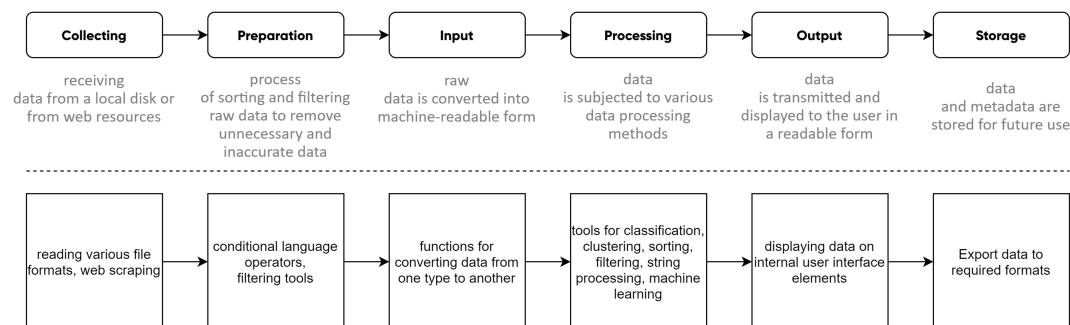

Fig. 3. Data cycle, data cycle software functionality

Conclusion

The analysis of the effectiveness of various visual programming languages from different fields of activity is carried out. Visual programming shows the greatest efficiency in narrowly focused tasks. Since data processing and collection is a niche task, it is assumed that visual programming in this area will be more effective than classical programming.

The functionality necessary for such a tool to work with data is considered, a list of necessary functions is highlighted: classification, clustering, sorting, filtering, string data type processing, as well as machine learning.

A prototype of the Draft software was developed, which includes a visual development environment for user interfaces and a visual script editor. The target functionality of the program is the collection and processing of data. The ultimate goal is to provide a wide range of consumers with easy-to-learn and easy-to-use data management software. This product can significantly expand the capabilities of scientists and students whose specialty is not related to programming when creating scientific papers, and can also become a convenient business intelligence tool.