



**DEVELOPMENT OF A WEB APPLICATION FOR ASSESSMENT OF PERSONALITY TYPE BASED ON  
ASSESSMENT OF COGNITIVE PROCESSES USED DURING THE GAME, WITH ELEMENTS OF  
MACHINE LEARNING**

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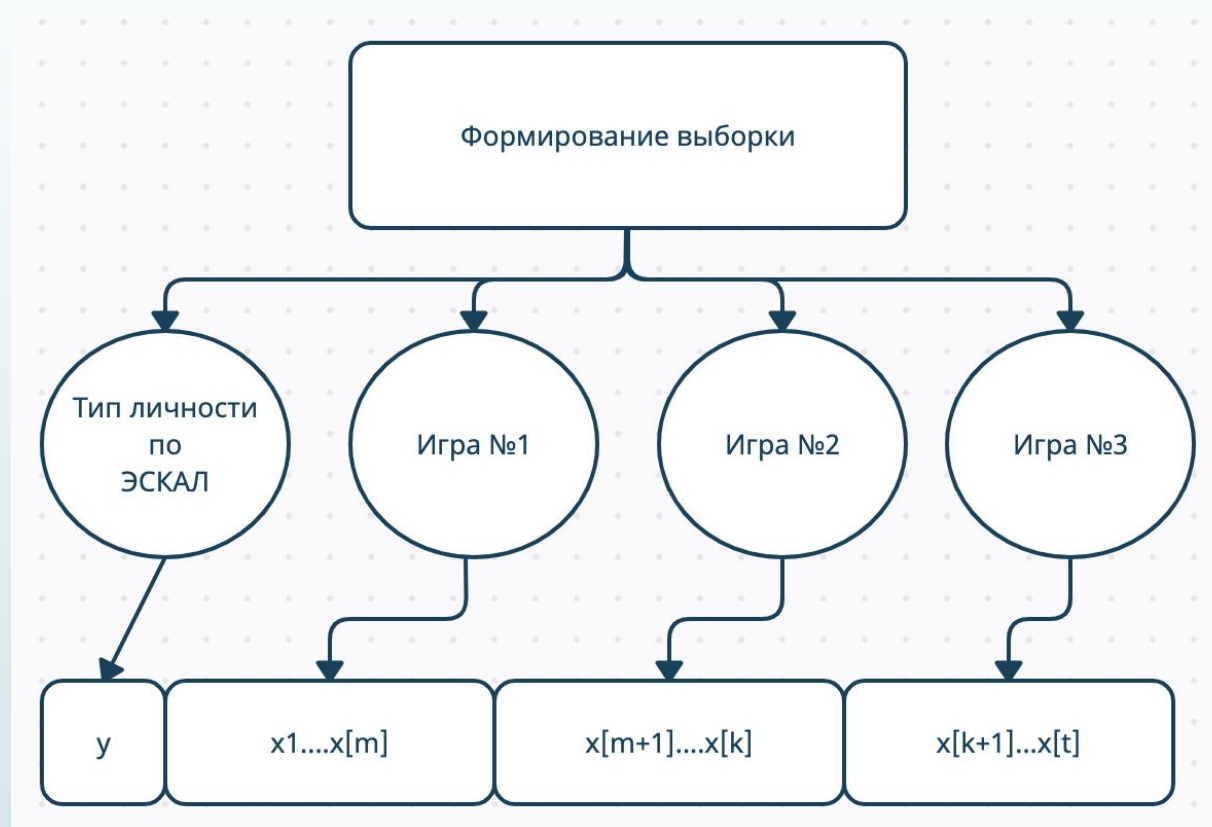
# Relevance

- The type of temperament determines the most optimal way of socio-biological adaptation for each individual to changing conditions of existence, i.e. its own way of survival, genetically laid down for each individual. Accordingly, the choice of activity in accordance with the qualities of a person, determined by the type of temperament, will have the greatest efficiency.
- The results of most of the existing tests for determining the type of personality, in which the respondent needs to choose certain statements that are closest to him, can be distorted due to the fact that the respondent can choose incorrect answers, deliberately adjusting them to the desired result.
- The game can serve as a tool for activating human mental processes. In the current classification, the game form of testing serves as a method for obtaining various information about an individual, that is, about his type of personality.

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# Methods, sampling

- The respondent will pass tests and games through the site.
- On the main page, the user will see general information about the principles of the application. You can read the background information or watch a short video that will demonstrate the process of filling out the questionnaire and passing the test through games. To collect data for training a machine learning model, at the initial stages, it is necessary to undergo testing to determine the type of personality in the expert system for complex personality analysis (ESCPA).



The sampling process (the format of data recording in the database)  $y$  is the response, and the  $x$ -s are predictors by which  $y$  (personality type) will be predicted in the future.

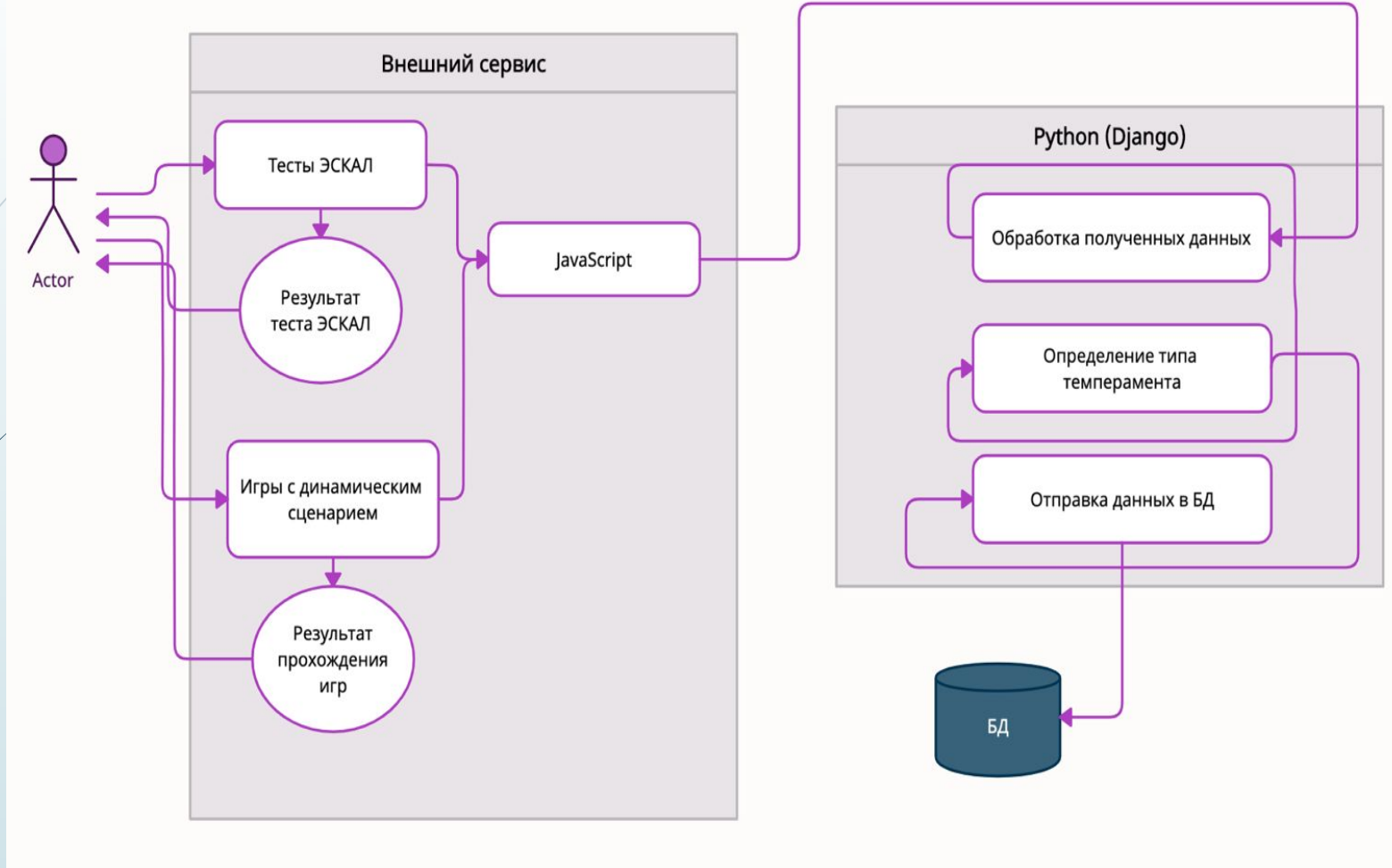


а



б

The scheme of the application: a) during the data collection process for training the machine learning model. b) after training the machine learning model.



Application architecture diagram



# Conclusion

In this work, a web application was implemented to assess the personality type based on the assessment of cognitive processes used during the game. The implemented application contains a test for assessing personality type according to the ESCPA system, as well as several games for assessing cognitive processes. The application is currently in test mode and will soon be launched globally. The data obtained from the respondents' passing the test and games is saved and accumulated in a database for feeding into a machine learning model. Random Forest (random forest) was chosen as the machine learning algorithm, since this algorithm is considered one of the best, in the case of an ensemble of models, and also when there is not much data for training the model. The collection of data for training a machine learning model will continue in the future. Until there is no need to pass the ESKAL tests. The type of temperament will be determined only by the data obtained from the passage of the games, which will completely solve the problem.