**Student:** Oleksandr Romanchenko

**ID:** 83459

**Comparative analysis of different classification algorithms**

The data about flats from excel is used for this classification task.

This is how data looks like:

A picture containing bus, furniture, road, cabinet

Description automatically generated

First, I’m going to build 2 new models, then - compare their results with 2 models from previous homework

Some data preparation steps:

A close up of text on a white background

Description automatically generated

Building bagging model and making a prediction:

A picture containing device

Description automatically generated

Checking the number of incorrectly classified flats:

A close up of a logo

Description automatically generated

Now let’s try another model, Random Forest and see what results we get with it.

Building the model and making predictions:

A picture containing device

Description automatically generated

Then, check the results:

A close up of a logo

Description automatically generated

Next step – let’s compare results with models from previous homeworks:

|  |  |
| --- | --- |
| **Name of the model** | **Errors** |
| Neural network | 1 |
| Decision tree | 6 |
| Rpart | 0 |
| Bagging | 0 |
| Random Forest | 0 |

**Conclusion:** looking at final results we can see that decision tree is the worst model for this classification task with 6 incorrectly classified flats out of 30. Neural network definitely performed better, with result of 1 error, but still not ideally. 3 other models: Rpart, Bagging and Random Forest have classified all flats correctly without any mistakes, thus, they are considered as the best ones.