**Read manual rules:**

1. Create a connection with the raw data and read the dataset. Create a connection to the database: APPS -> Database Explorer-> Configure Datasourse -> **ODBS** datasourse->select the driver (depending on the type of table). Specify the name of the database **base\_name** (we also call this database in the settings) . Specify the name of the table in the database **table\_name** in the script:

Line 2: Select path to the dataset with base\_name For\_matlab

Line 4: Select table\_name '20200907\_Noyabrsk\_Mn\_Cr\_for\_Matlab'

or '20210212\_Tarko\_Sale\_Soil'

2. Handle input n - the number of partitions, percentage - the percentage of the training subset, the inputs and output of the neural network.

Line 12: Select output\_for\_network 'TF024Cr\_mg\_kg' or 'TF025Mn\_mg\_kg'

3. Multilayer perceptron. We set the maximum number of neurons in a hidden form and how many times each network is trained.

4. Clean Outlier Data. In the interactive window, select the input table, the column that you want to get rid of outliers. X-axis is default. If you do not need to get rid of outliers, just comment line 118 with a %.

Line 91. Interactive Input\_data select table data and 'TF024Cr\_mg\_kg' or 'TF025Mn\_mg\_kg'.

4. Create a Partitions table that contains an ID (each repeated several times), a partition number, and a label for the training sample (0) or test sample (1). Write tables Sections in the database Access.

5. We create a table of training and test data for each partition and train the networks on the normalized data without visiting. Choosing the best neural networks.

6. We construct descriptive statistics. We save all variables.

Line 457. Select save('20210212\_variables\_Cr\_TarkoSale.mat')

Or save('20210212\_variables\_Mn\_Noyabrsk.mat')