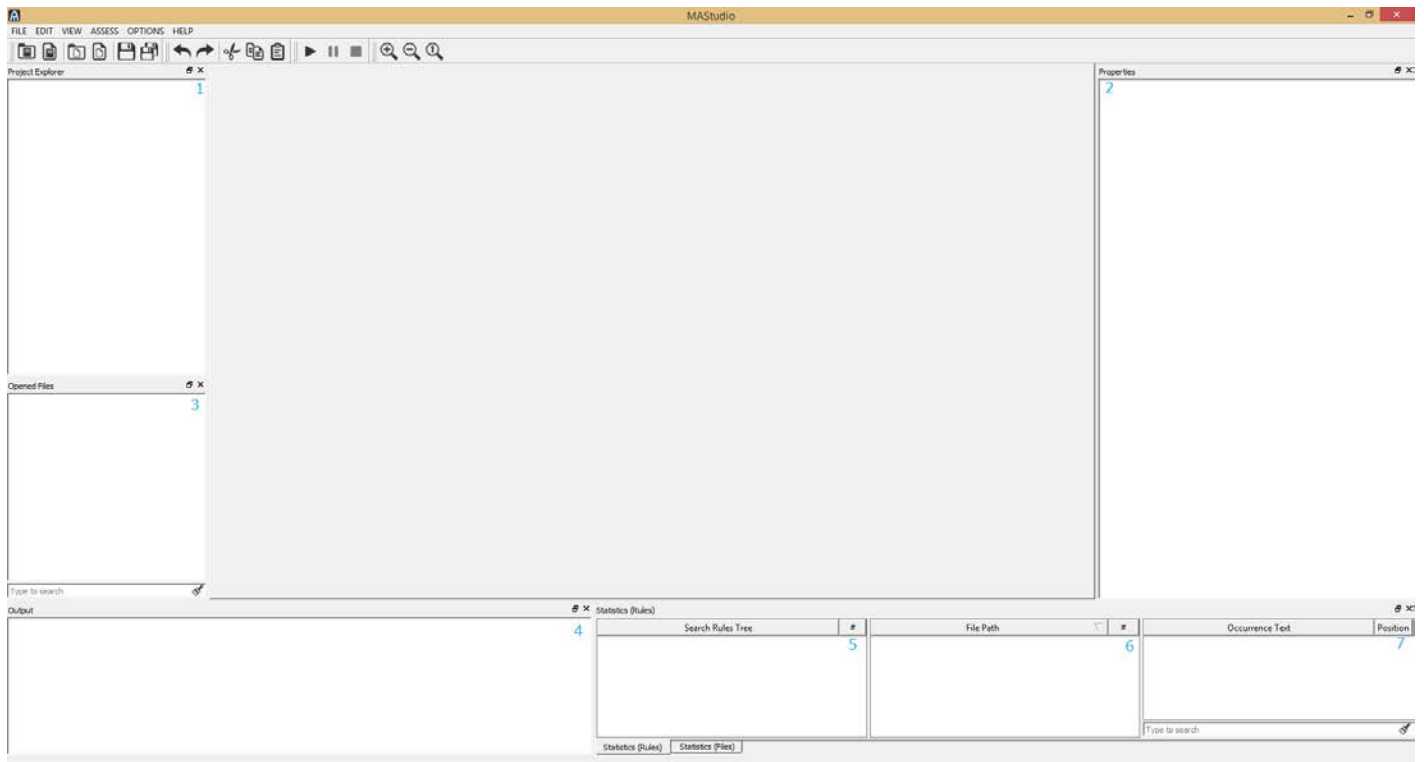


MAStudio documentation

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1. Interface



Interface view

1.1 Project Explorer

shows your active projects, project files, which have been included in these projects.

1.2 Properties tab

shows your project name, path to the project files, project type.

1.3 Opened files

show the files currently opened in MASTudio.

1.4 Output

shows Assessment process. Information starts output here after running the Assessment by clicking on the "Start Assessment" button.

1.5 Search Rules Tree

shows by which of the search rules relevant information was found.

1.6 File Path

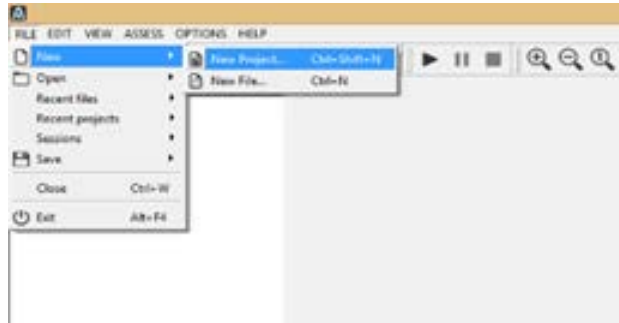
shows the file name in which information was found by search rules.

1.7. Occurrence Text and Position

show objects and positions of these objects in the files which was found by search rules.

2. Project creation

To create a new project switch to the tab File -> New -> Project.

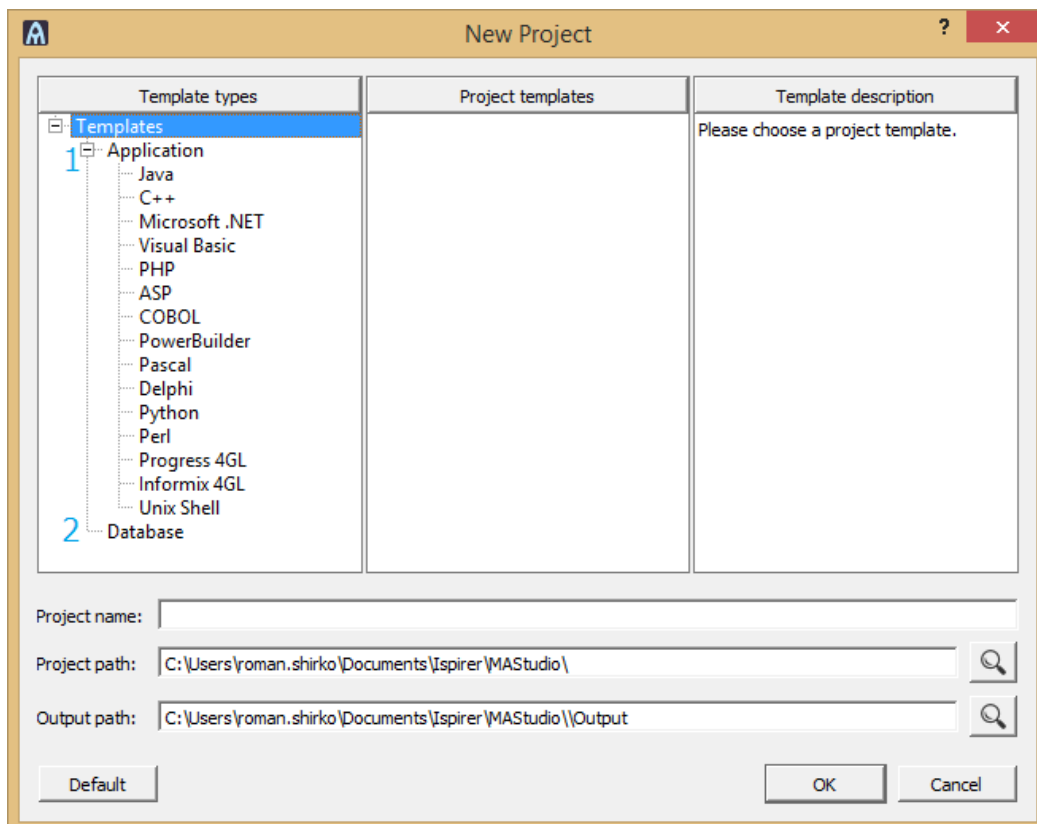


Depending on the project direction, move to the relevant tab and select the appropriate item from the list. Project direction can be either "Application" or "Database".

"Application" project works with your scripts, source code files, etc. For example, .cpp files, .cs files, .cob files.

"Database" project works with definition of the objects of your database. For example, .sql files.

On the New Project tab select your direction. A lot of directions of Application project are divided into subgroups. For example, for Java it can be Hibernate, JSF, Common Java, etc. Directions of Database project type are represented in one group.



1 – Application project, 2 – Database project

It is also necessary to specify Project name and change default paths to Project folders if you want.

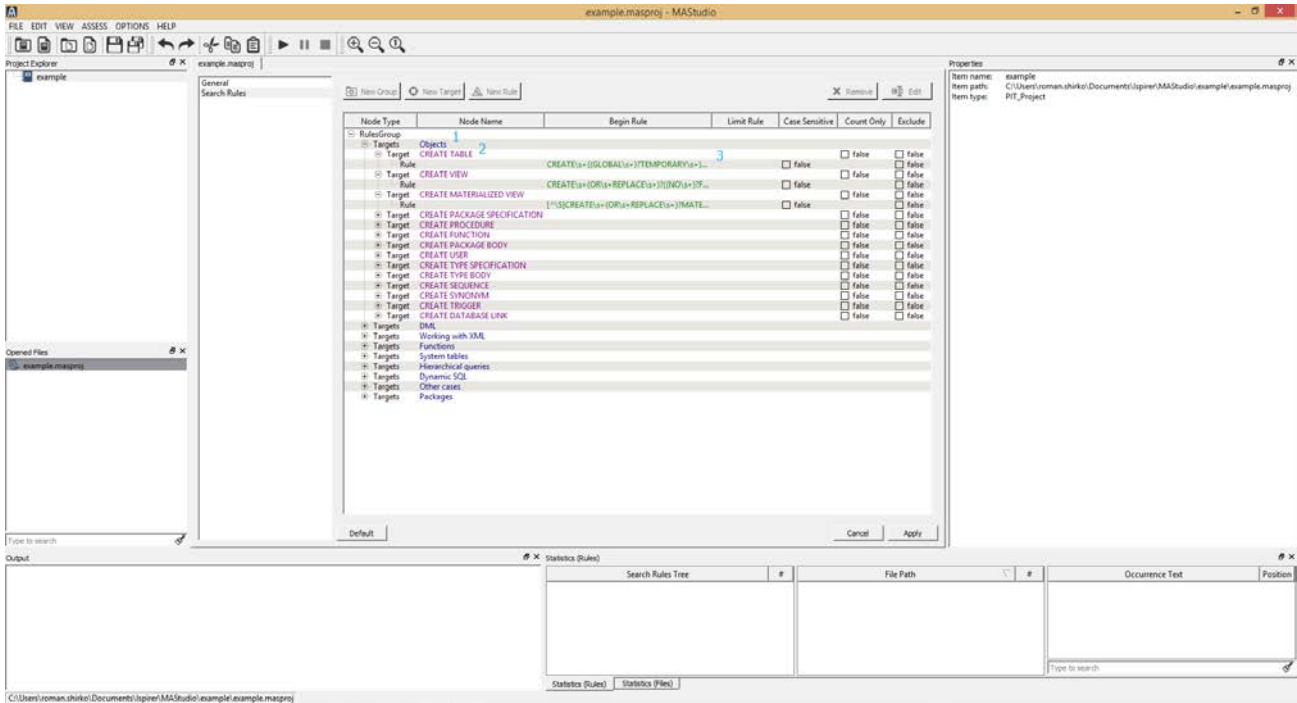
3. Working with a project

3.1. Search rules

In MASTudio the search rules are regular expressions used for search in files and counting of statistics such as objects found by these search rules, total lines of code in these objects.

You could see your current Search Rules.

For this purpose: right click on your Project Name and select “Search Rules”.



1 – Search rules group, 2 – Search rule name, 3 – Regular expression of search rules

Here you can find regular expressions which are used for search.

3.1.1. Groups

Search rules can be added to groups, subgroups in MASTudio. The example is on the image above

3.1.2. Search rule options

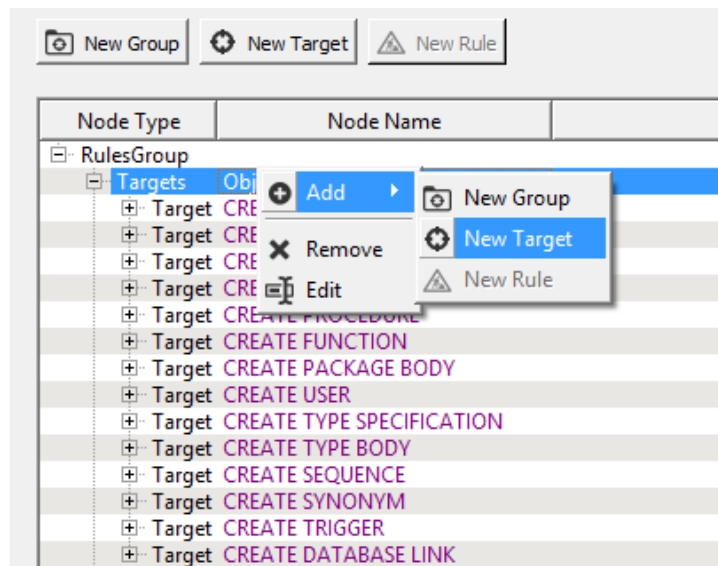
The following actions can be performed upon a search rule: add a new rule, change the existing rule, delete.

3.1.3. Adding new rule

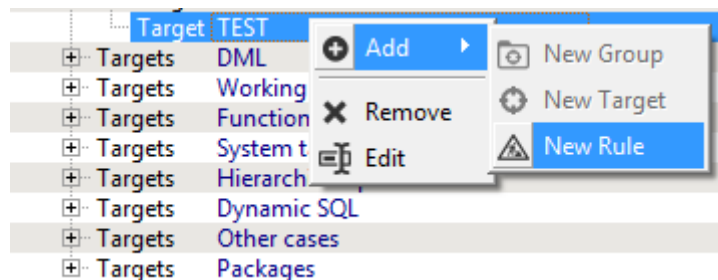
New rules can be added to a group of rules, or a new regular expression can be added to the existing rule. In the second case the search will be conducted by two rules at the same time.

Let's consider two cases:

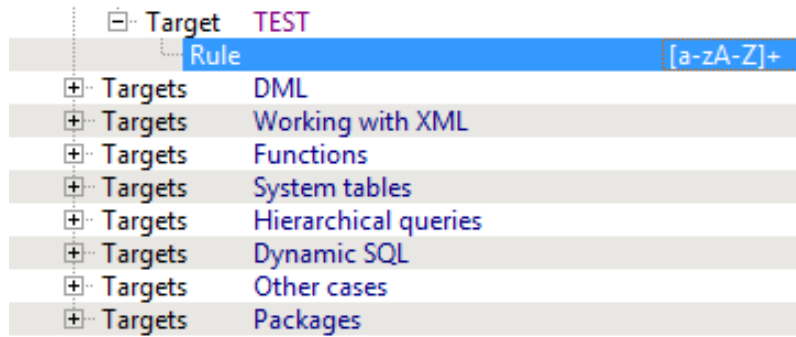
- 1) In order to add a New Rule right click on the name of the group and choose "Add" -> "New Target". "Target" is the name of a search rule.



Let's create a new Target named TEST. In order to add a regular expression to this search rule, right click on the search rule name (TEST) and choose "Add" -> "New rule".).



In the added line write down the regular expression by which the search will be conducted.

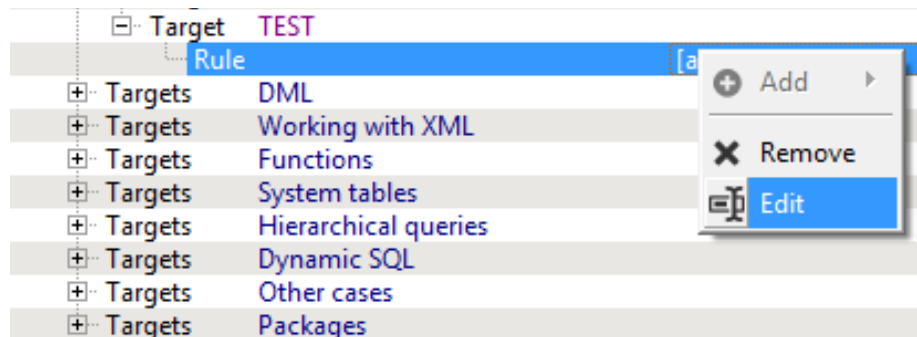


This way a new search rule can be added.

- 2) If the object found by a search rule has several kinds (kinds of spelling). Several small regular expressions can be used instead of a bulky one. In order to add the second regular expression to a search rule, right click on the search rule name (TEST) and choose "Add" -> "New Rule". This way the second search rule can be added.

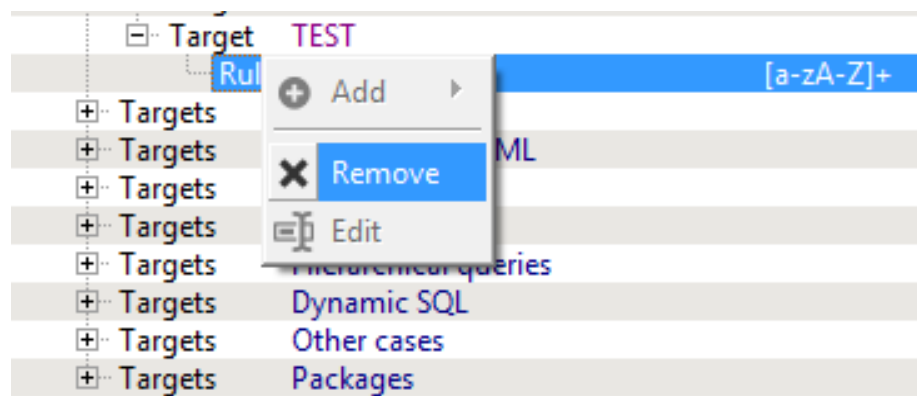
3.1.4. Editing rule

For this right click on the corresponding search rule and change its regular expression.



3.1.5. Removing rule

For this right click on the corresponding search rule and choose "Remove".



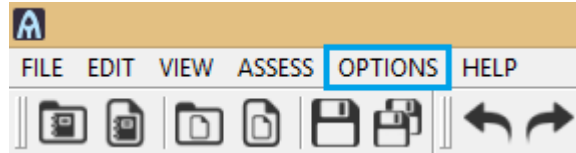
3.1.6. Default search rules and default levels

MAStudio has two levels of search rules at any of which there is a possibility to bring the default settings back.

1. If you want to bring the default search rules back only at this level, right click on the project, choose “Search Rules”, and press “Default” and “Apply” buttons. From this time on all the search rules will be changed to those stored in “config” folder, which you can find in \Documents\user\Ispirer\MAStudio\config)

These are the rules which are used in a new project and can be changed by a user.

2. In order to change the default search rules choose the “Options” tab.



Then choose “Templates”. The tree with the files of templates used upon a new project creation will be opened. The rules can be changed here, and they will be default rules upon a new project creation.

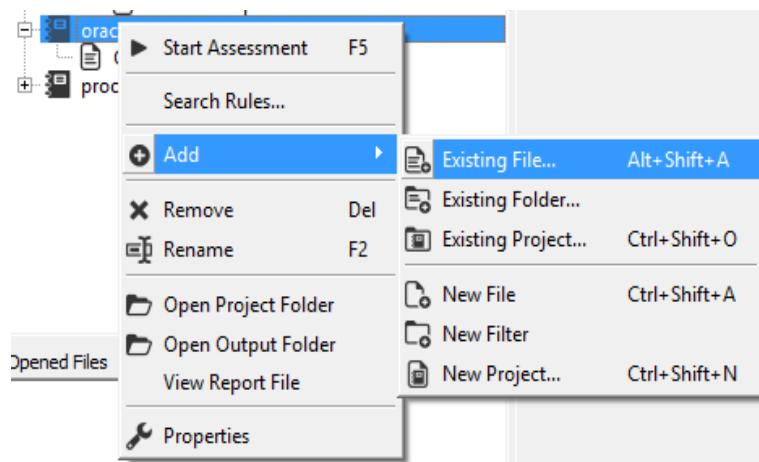
This level should be used if you have changed default project templates and want to bring the default search rules back. In case any search rule has been changed here, it will be the same for all the projects created in future. By clicking on “Default” here, you will change the rules set by you for all the templates to default rules, which were set during the installation.

3.1.7. Add tab

The files by which the analysis will be conducted should be added to each project for analysis. You can either create a new file and add your code into it, or add the existing one.

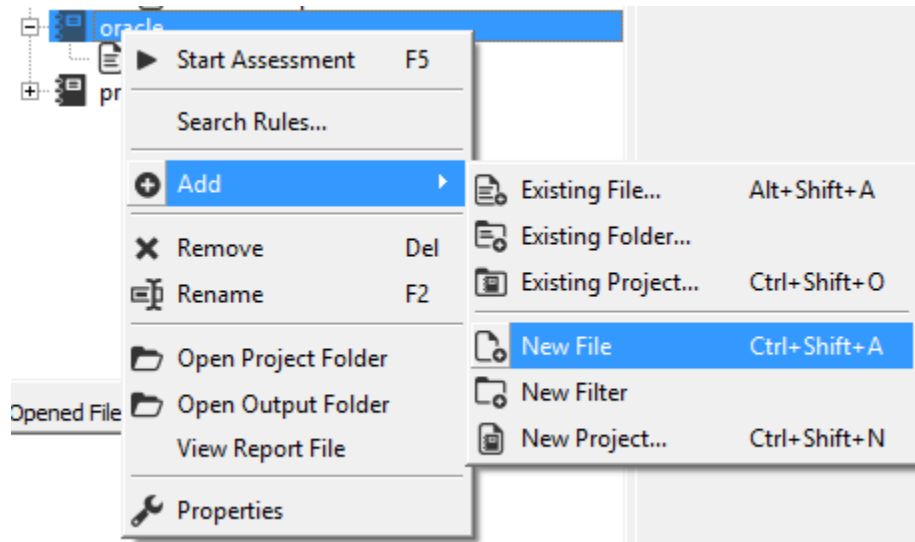
3.1.8. Existing...

In order to add Existing File, File Folder, or Project, right click on Project, choose Add, and then choose “Existing file”, “Existing Folder”, or “Existing Project”. The corresponding files will be added to the project.



3.1.9. New...

When choosing “New” an empty file can be created where the code for analysis can be added.

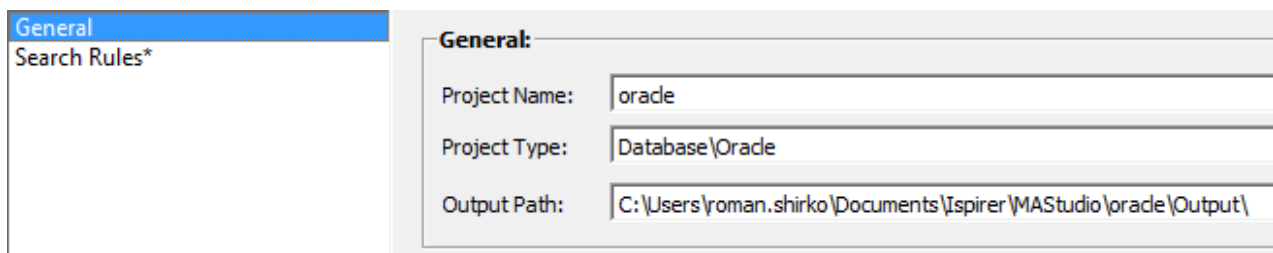


3.2. Project Folder

This is the directory where the project and all the project files are stored. This option can be changed while creating the project.

3.3. Output Folder

After starting the “Assessment” the information about the objects found with the help of search rules is stored in this folder. It also stores the report, the same as the one that was shown in the main window of MASTudio. This directory can be changed in the Project Properties. For this right click on the Project Name, choose Properties, switch to the “General” tab and set a new path to Output Folder.



3.4. Report File

The report displays the information about the objects found with the help of search rules such as the number of lines, the number of found cases, in how many files of the project the objects were found by this search rule or with the help of this search rule.

The report also displays the information on the files of this project such as the files by which the search was conducted, the number of files, the number of lines in each file, the size of a file.

3.5. Project properties

It is possible to go to this Project Properties by right clicking on the project. Here the work with search rules can be performed, and such options as Project Name, Output Path and SQL_DELIMITER can be specified on the “General” tab.

SQL_DELIMITER is specified by default with regard to standards of each base, if it differs from delimiter in your “.SQL” scripts, then it must be changed in your project. Without correct SQL DELIMITER search errors and incorrect work of the Assessment can take place.

4. Assessment stage

After all the options are set and the files that will be involved in the Assessment are added to the project, press “Start Assessment”.

After pressing, the statistics starts to be collected with the help of xprs.exe (search tool).

While performing the Assessment the information is displayed in the “Output” window.

```

Output
----- Assessment started: Project: oracle, Type: Database\Oracle -----
Start timestamp:      Fri May 20 12:35:04 2016
[Occur]  "Objects/CREATE PROCEDURE"      "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(6,3):(
[Occur]  "Objects/CREATE PROCEDURE"      "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(45,3):
[Occur]  "Objects/CREATE PROCEDURE"      "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(82,3):
[Count]  "Objects/CREATE PROCEDURE"      "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      3
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,5):(2,8)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,9):(2,12)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,13):(2,22)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,23):(2,27)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,28):(2,35)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,36):(2,42)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(2,43):(2,50)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(4,1):(4,4)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(4,5):(4,11)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(4,12):(4,15)"
[Occur]  "Objects/TEST"                    "D:\Roman.Shirko\job\SQL_Scripts\ORA_SMALL_TEST.sql"      "(6,3):(6,9)"
  
```

After the Assessment is finished the report with information on the objects found by search rules will be displayed on the screen.

MAStudio General Report
 Generated by © Ispirer Systems xprs search tool
 Fri May 20 12:35:04 2016

Project name: oracle
 Project type: Database\Oracle
 Project path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\oracle\
 Output path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\oracle\Output\
 Assessment time: 00:00:00.226

Matching Files Information

| Target Path | Lines of Code | Files Matched | Occurrences Found |
|---|---------------|---------------|-------------------|
| Objects/CREATE PROCEDURE | 93 | 1 | 3 |
| Objects/TEST | 339 | 1 | 339 |
| DML/UPDATE | 15 | 1 | 5 |
| DML/SYS_REFCURSOR | 3 | 1 | 3 |
| Packages/DRMS_OUTPUT/ENABLE | 3 | 1 | 3 |
| Packages/DRMS_OUTPUT/PUT LINE | 5 | 1 | 5 |
| Packages/DRMS_OUTPUT/PUT | 5 | 1 | 5 |

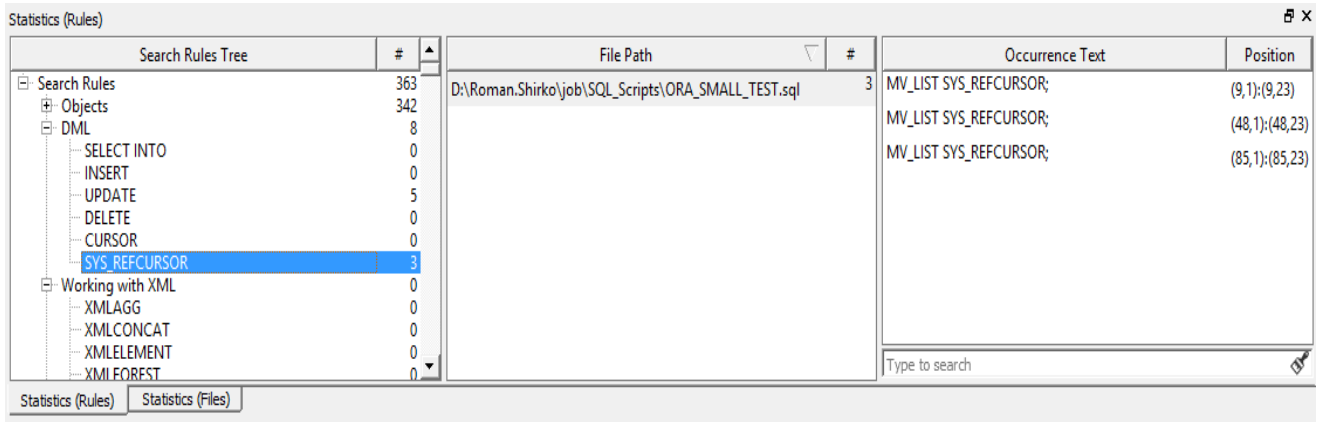
Total targets number: 3438
 Total occurrences number: 363

Searched Files Summary Information

| File Extension | Files Number | Total LOC | Total Size (bytes) |
|----------------|--------------|-----------|--------------------|
| *.sql | 1 | 110 | 2859 |

Total extensions number: 1
 Total files searched: 1
 Total files LOC number: 110
 Total files size (bytes): 2859

The same information will be displayed in the “Search Rules Tree” window, but it will differ as this window displays the information in any case, even if nothing has been found by this search rule. By left clicking on the group of rules, the information on all found similar objects will be displayed in the “Occurrence Text” window. By double left clicking on one of the objects, it will be shown in the file.



5. Information from the report

MAStudio General Report
Generated by © Ispirer Systems xprs search tool
Tue May 17 13:29:29 2016

Project name: oracle
Project type: Database\Oracle
Project path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\oracle\
Output path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\oracle\Output
Assessment time: 00:00:00.177

Matching Files Information

| Target Path | Lines of Code | Files Matched | Occurrences Found |
|---|---------------|---------------|-------------------|
| D:\Objects\CREATE_PROCEDURE | 93 | 1 | 3 |
| DML\UPDATE | 15 | 1 | 5 |
| DML\SYS_REFCURSOR | 3 | 1 | 3 |
| Packages\DBMS_OUTPUT\ENABLE | 3 | 1 | 3 |
| Packages\DBMS_OUTPUT\PUT_LINE | 5 | 1 | 5 |
| Packages\DBMS_OUTPUT\PUT | 5 | 1 | 5 |

Total targets number: 3437
Total occurrences number: 24

Searched Files Summary Information

| File Extension | Files Number | Total LOC | Total Size (bytes) |
|----------------|--------------|-----------|--------------------|
| .sql | 1 | 110 | 2859 |

Total extensions number: 1
Total files searched: 1
Total files LOC number: 110
Total files size (bytes): 2859

The report stores the information on the objects found by search rules. You can see it in “Matching Files Information”. For each group of objects there is corresponding information on the number of lines, in how many files they have been found, the number of the found objects.

Upon clicking on the group of objects, it will be opened, and all the found by this search rule objects will be shown.

MAStudio Detail Report
for search target
Objects:CREATE PROCEDURE

[Back to General Report](#)

Matching Files Information

| File Path | Occurrences Found |
|--|-------------------|
| D:\Roman.Shirko\SQL_Scripts\ORA_SMALL_TEST.sql | 3 |

Total occurrences number: 3
Total files matched: 1

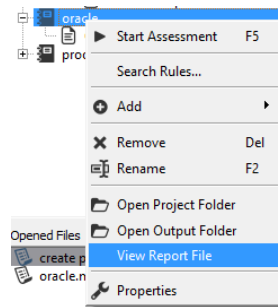
Occurrence Positions Information

| File Path | Occurrence Position |
|--|---------------------|
| D:\Roman.Shirko\SQL_Scripts\ORA_SMALL_TEST.sql | (6,3)(20,1) |
| D:\Roman.Shirko\SQL_Scripts\ORA_SMALL_TEST.sql | (49,3)(79,1) |
| D:\Roman.Shirko\SQL_Scripts\ORA_SMALL_TEST.sql | (82,3)(110,1) |

[Back to General Report](#)

The files which took part in the Assessment are shown in the report section “Search Files Summary Information”, as well as the corresponding to them information such as the number of files, the number of lines of code in these files, and the total size of the files.

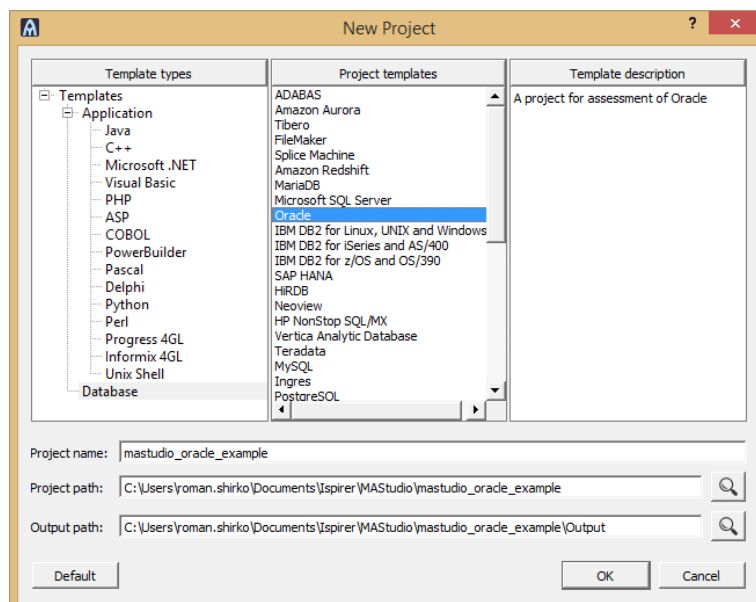
Also after the Assessment is finished html version of this report is created. You can find it in the “Output” folder situated in project directory, or right click on project and choose “View Report File”.



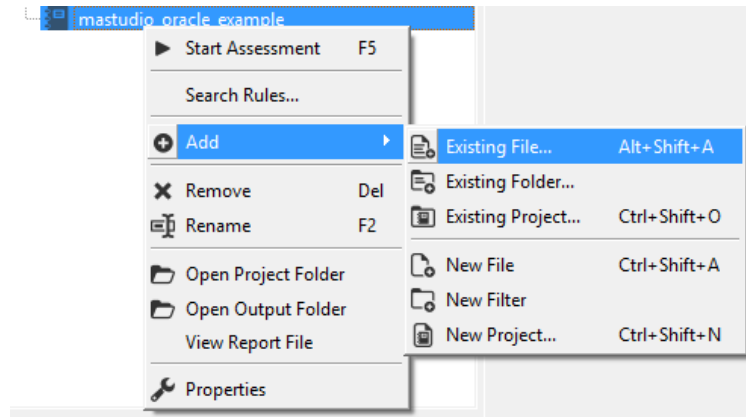
6. Project example

Let’s consider the example of the course of the process.

At first, let’s create project on the basis of the templates. In our case it is the project on statistics collection from Oracle database .SQL script.



A pre-compiled “.SQL” script joins the project.



Let’s regular expressions of search rules in our example stay default. SQL_DELIMITER option in our example is “/”, as the descriptions of the objects in our script are separated by this delimiter.

General Search Rules

General:

Project Name: mastudio_oracle_example

Project Type: Database\Oracle

Output Path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\mastudio_oracle_example\Output\

Macros:

SQL_DELIMITER / SQL Delimiter

Let’s run the Assessment. After the Assessment is finished, the report with information on this course of the Assessment process is displayed on the screen.

MAStudio General Report
Generated by © Ispirer Systems xprs search tool
Fri May 20 13:52:36 2016

Project name: mastudio_oracle_example
Project type: Database\Oracle
Project path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\mastudio_oracle_example\
Output path: C:\Users\roman.shirko\Documents\Ispirer\MAStudio\mastudio_oracle_example\Output\
Assessment time: 00:00:00.175

Matching Files Information

| Target Path | Lines of Code | Files Matched | Occurrences Found |
|---|---------------|---------------|-------------------|
| Objects\CREATE_PROCEDURE | 93 | 1 | 3 |
| DML\UPDATE | 15 | 1 | 5 |
| DML\SYS_REFCURSOR | 3 | 1 | 3 |
| Packages\DRMS_OUTPUT\ENABLE | 3 | 1 | 3 |
| Packages\DRMS_OUTPUT\PUT_LINE | 5 | 1 | 5 |
| Packages\DRMS_OUTPUT\PUT | 5 | 1 | 5 |

Total targets number: 3437
Total occurrences number: 24

Searched Files Summary Information

| File Extension | Files Number | Total LOC | Total Size (bytes) |
|----------------|--------------|-----------|--------------------|
| .sql | 1 | 110 | 2859 |

Total extensions number: 1
Total files searched: 1
Total files LOC number: 110
Total files size (bytes): 2859