How to use CAT

---- It is necessary to have Powershell 7 to run CAT----------

1. Installation

From version 0.4.0, we use this way to install it.

RUN THIS script:

```
$credential = Get-Credential
$feedUrl =
"https://pkgs.dev.azure.com/joyfulcraftsmen/Products/_packaging/CAT/nuget/v2"
Register-PSRepository -Name JoyfulDevOps -SourceLocation $feedUrl -
PublishLocation $feedUrl -InstallationPolicy Trusted -Credential $credential
Install-Module CAT -Repository JoyfulDevOps -Credential $credential -Force -
AcceptLicense
```

When you are prompted for credentials, fill in your email as user name and the PAT token as password.

2.Definice $credentials:

```
$token = "**********" #token must be written in
between ""
$credentials = Get-Credential

PowerShell credential request
Enter your credentials.
User: your email address
```

Then Run this script:

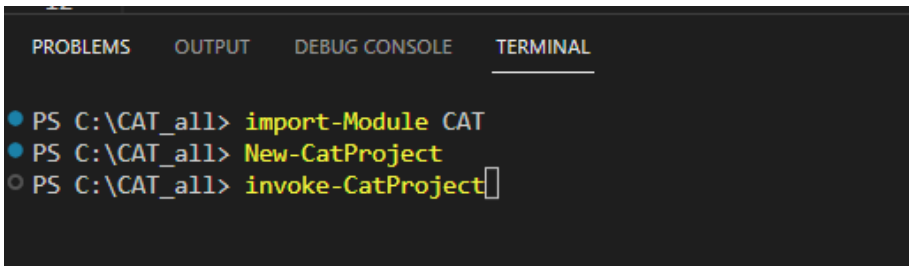
```
Install-module CAT -RequiredVersion '0.5.0' -Repository JoyfulDevOps -
AcceptLicense -force -Credential $credentials
```

-> Module CAT is installed and ready to use

3. How to work with CAT

We can recommend using Visual studio code & yaml extension.
Open folder with CAT and be in this directory while using it.
Commands must be run from Terminal of PowerShell 7

4. Commands for CAT :

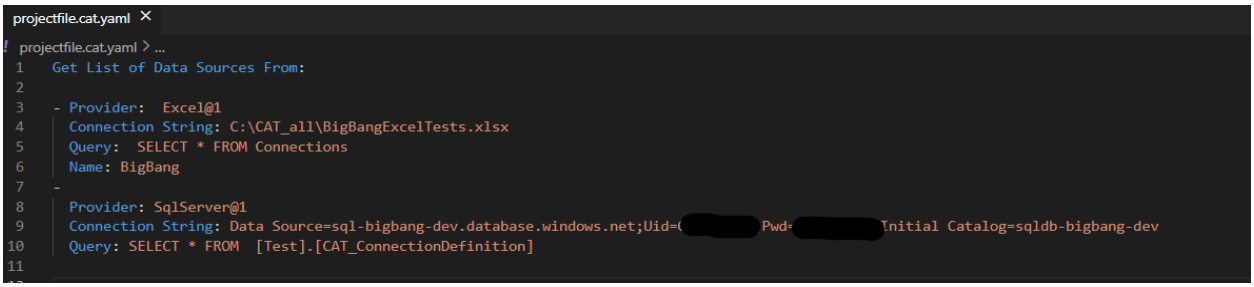



```
Import-module CAT
#run first to import CAT module

New-CatProject
#this command create project file with first tests

Get-Command -Module CAT
#this shows all CAT commands, try it and experiment with it

Invoke-CatProject
#to run tests&see results use this command

Get-CatTestResult | ? { $_.TestResult -eq 'Failed' }
# shows us only 'Failed'  tests, it's good for debugging
```

5. How to define project file and set up tests

Example of data source definition:

```
Get List of Data Sources From:
-
  Provider: SqlServer@1 # Excel@1 # Yaml@1 Exceloledb@1
# these are basic types of providers
  Connection String: Data Source=sql-bigbang-
dev.database.windows.net;Uid=%%%;Pwd=%%%;Initial Catalog=%%%% or path to file
  Query: SELECT * FROM  [Test].[CAT_ConnectionDefinition]
 #select where is in database the connection definition
  Name : AWD
# nickname of database, we use it for FirstDataSource or SecondDataSource
```



Example of tests definition:

```
Get List of Tests From:
-
  Provider:  SqlServer@1
  Connection String: Data Source=sql-bigbang-
dev.database.windows.net;Uid=%;Pwd=%;Initial Catalog=%
  Query: EXEC [Test].[CAT_Smoke_GetAllEmptyTables_Staging] # we can run
stored procedures which produce tests
-
  Provider:  SqlServer@1
  Connection String: Data Source= sql-bigbang-
dev.database.windows.net;Uid=%;Pwd=%;Initial Catalog=%
  Query: SELECT * FROM [Test].[CAT_TestDefinition] # we can select tests from
table
-
  Provider:  Excel@1
  Connection String: C:\CAT_all\BigBangExcelTests.xlsx  # string to file
where are tests
  Query: SELECT * FROM DataMart_Smoke # select excel sheet where are tests
  Name : excel DataMart_Smoke
-
  Provider: Yaml@1 #set up provider like this, allowes me to to run tests ,
which are define directlly in project yaml file
  Connection string: ./projectfile.cat.yaml # name of my projet file
  Query: Tests
  Name: Testy v yamlu
```

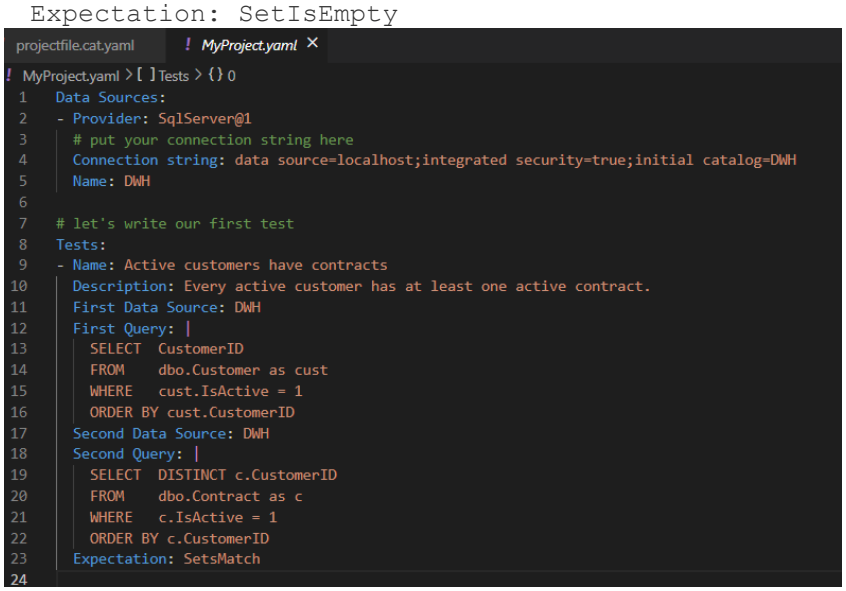
```
Get list of tests from:

- Provider:  Excel@1 #DataMart_Smoke
  Connection String: C:\CAT_all\BigBangExcelTests.xlsx
  Query:  SELECT * FROM DataMart_Smoke
  Name :  excel DataMart_Smoke

- Provider:  SqlServer@1
  Connection String: Data Source=sql-bigbang-dev.database.windows.net;Uid=[redacted];Pwd=[redacted];Initial Catalog=sqldb-bigbang-dev
  Query:  EXEC [Test].[CAT_Smoke_GetAllEmptyTables_Staging]

- Provider:  SqlServer@1
  Connection String: Data Source=sql-bigbang-dev.database.windows.net;Uid=[redacted];Pwd=[redacted];Initial Catalog=sqldb-bigbang-dev
  Query:  SELECT * FROM [Test].[CAT_TestDefinition]

-
  Provider: Yaml@1
  Connection string: ./projectfile.cat.yaml
  Query: Tests
  Name: Testy v yamlu
```

Output:
We can define trx, yaml, json test result , see last printscreen
Output: trx, yaml, json # write it in the end of projectfile

It will generate the file in the TestResults folder next to your project file.

Define tests directly in project file.

```
- Provider: SqlServer@1
  # put your connection string here
  Connection string: data source=localhost;integrated security=true;initial
catalog=DWH
  Name: DWH # Data Sources

Tests:

- Name: Len of Phone_number must be 15
  Order: 1
  Description: Len of Phone_number must be 15 numbers
  First Data Source: DWH # name of data source
  First Query: Select phone_number from [Phones$] where LEN(phone_number) <>
15
  Expectation: SetIsEmpty
```



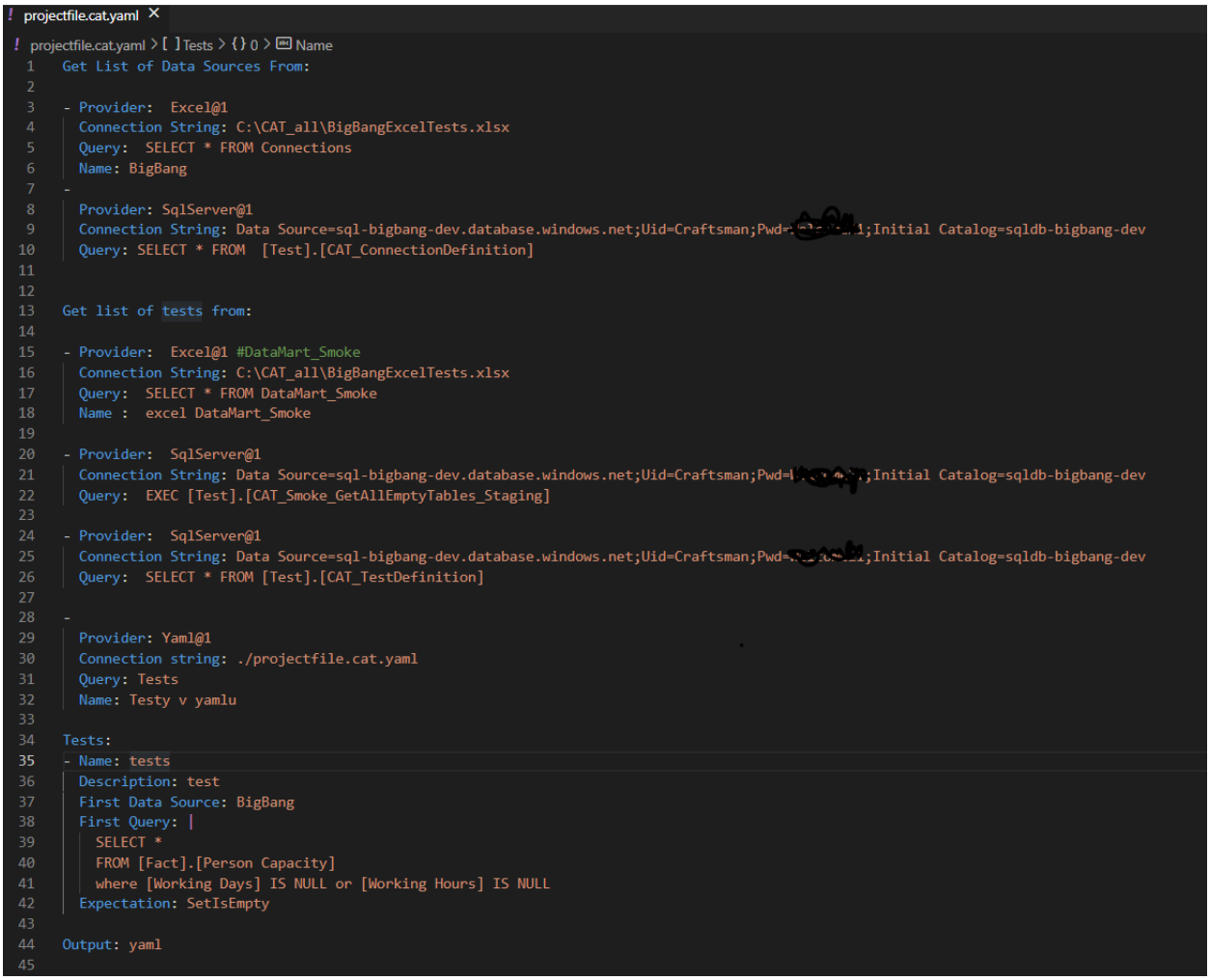
6.How to define tests

TestSuite #optional
Order #optional
TestCase #optional
TestName #must be define
Description #optional
FirstDataSource #must be define
FirstQuery #must be define
SecondDataSource # Must be definy for integration tests, with Expectation SetsMatch
SecondQuery # Must be definy for integration tests, with Expectation SetsMatch
Expectation #must be define
Categories #optional
Tolerance #optional
Timeout #optional

Expectation:

SetIsEmpty #Expectation is zero rows as a test result
SetsMatch # Expectation is the same results for both queries
SetRowCount # We can define the number of expected row count

Example of project File :



```
projectfile.cat.yaml
Get List of Data Sources From:

- Provider:  Excel@1
  Connection String: C:\CAT_all\BigBangExcelTests.xlsx
  Query:  SELECT * FROM Connections
  Name: BigBang
-
  Provider: SqlServer@1
  Connection String: Data Source=sql-bigbang-dev.database.windows.net;Uid=Craftsman;Pwd=[redacted];Initial Catalog=sqldb-bigbang-dev
  Query: SELECT * FROM  [Test].[CAT_ConnectionDefinition]


Get list of tests from:

- Provider:  Excel@1 #DataMart_Smoke
  Connection String: C:\CAT_all\BigBangExcelTests.xlsx
  Query:  SELECT * FROM DataMart_Smoke
  Name :  excel DataMart_Smoke

- Provider:  SqlServer@1
  Connection String: Data Source=sql-bigbang-dev.database.windows.net;Uid=Craftsman;Pwd=[redacted];Initial Catalog=sqldb-bigbang-dev
  Query:  EXEC [Test].[CAT_Smoke_GetAllEmptyTables_Staging]

- Provider:  SqlServer@1
  Connection String: Data Source=sql-bigbang-dev.database.windows.net;Uid=Craftsman;Pwd=[redacted];Initial Catalog=sqldb-bigbang-dev
  Query:  SELECT * FROM [Test].[CAT_TestDefinition]

-
  Provider: Yaml@1
  Connection string: ./projectfile.cat.yaml
  Query: Tests
  Name: Testy v yamlu

Tests:
- Name: tests
  Description: test
  First Data Source: BigBang
  First Query: |
    SELECT *
    FROM [Fact].[Person Capacity]
    where [Working Days] IS NULL or [Working Hours] IS NULL
  Expectation: SetIsEmpty

Output: yaml
```