



Data

Aggregator

Ver.1.0

User Manual

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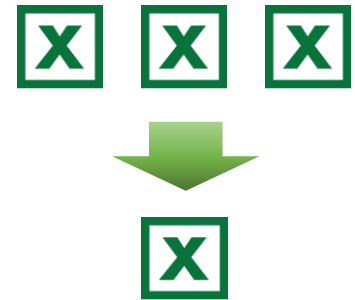
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1. Overview

Data Aggregator is a utility software which aggregates data stored in multiple Excel files.

By referring aggregation profile described in XML, it identifies target Excel worksheet and cell, and aggregates the values.

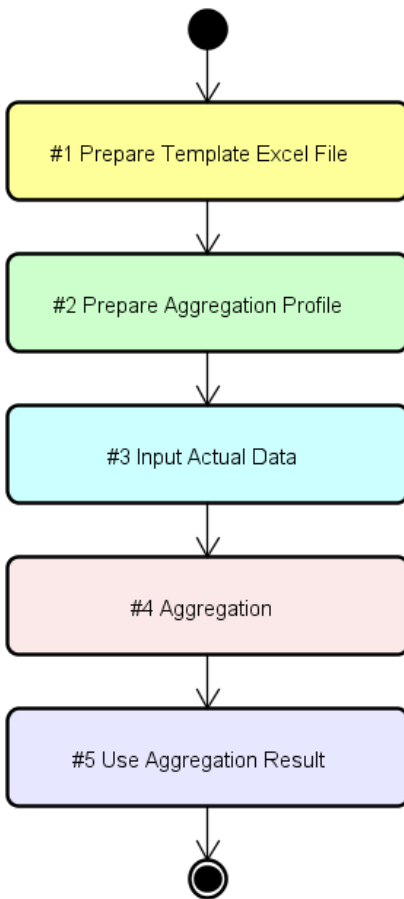
After aggregation, an Excel file which stores the aggregation result is automatically generated.



Note: This software is a third-party freeware which uses Microsoft.Office.Interop.Excel library.

2. Steps to Use

This diagram summarizes the whole steps. See later chapters for detail.



Step	Description
#1	Prepare template Excel file to input data. Set worksheet names and cell names for aggregation.
#2	Prepare XML file to let Data Aggregator recognize the aggregation target worksheets and cells. The XML file must be in following folder: <i>Data Aggregator Install Folder</i> \AggregationProfiles
#3	Copy the template Excel file. Input data.
#4	Create a folder for aggregation and locate the data Excel files in it. Start Data Aggregator, specify the aggregation folder and execute aggregation.
#5	Data Aggregator automatically generates single Excel file which stores the aggregation result. Click the link on the Data Aggregator screen to open the result Excel file.

3. Setup

3.1. System Requirements

Operating System

- Windows 7 or later (Tested on Windows 7 and Windows 10)

Install following software:

- .NET Framework 4.6.1 (Available in Microsoft web site)
- Microsoft Excel (Tested in 2010 and 2013)

3.2. Install

Extract DataAggregator.zip to arbitrary location. There is no installer.

3.3. Uninstall

- (1) Delete executable file. Delete installed folder.
- (2) Delete user setting (Not needed if Data Aggregator have not been started).

Delete following folder.

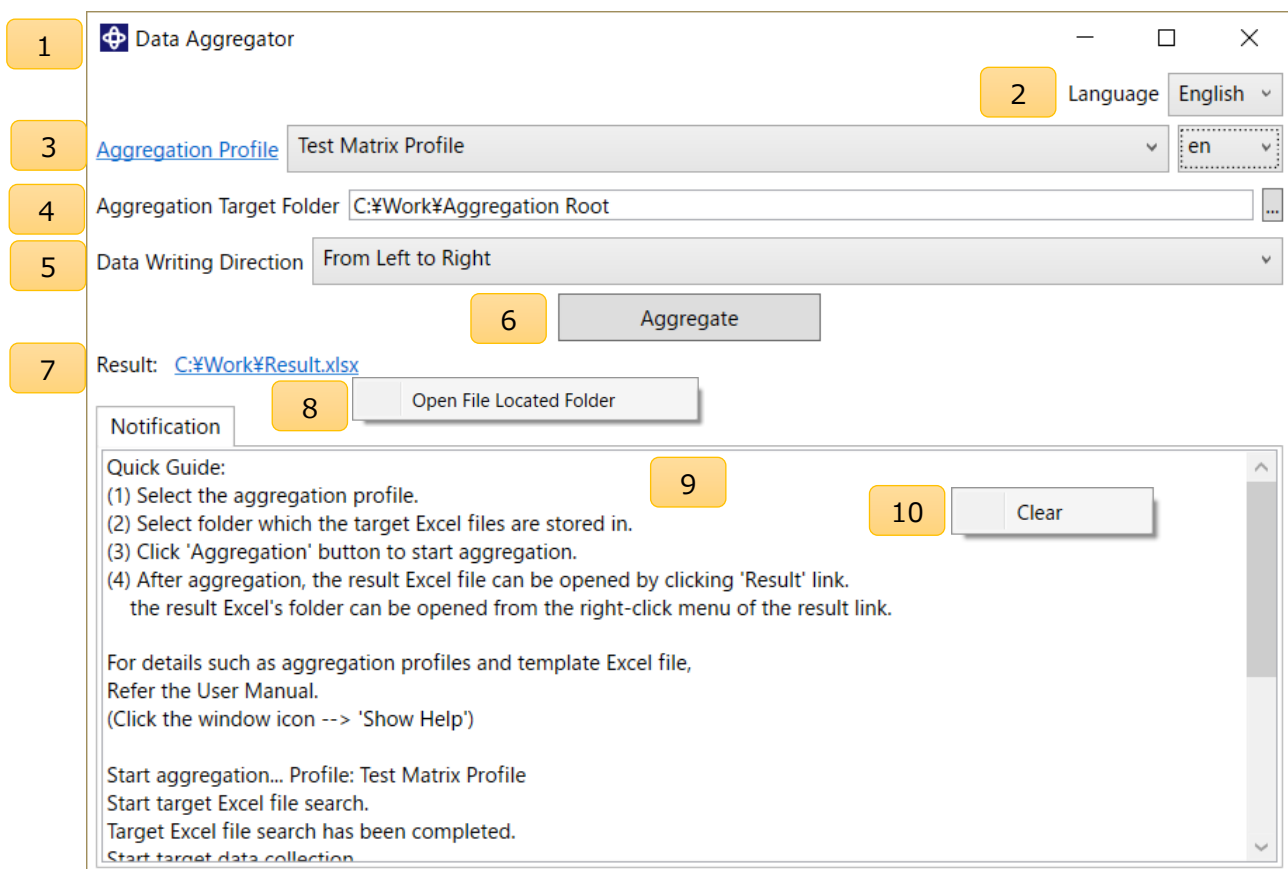
Windows User Folder\%AppData%\Local\DataAggregator


Note: To display Windows User Folder: Open Windows Explorer, Input %AppData% into the address bar, then press Enter key. After that, follow folder tree.

4. Screens

Data Aggregator has two screens. Main Window and Version Information Window.

4.1. Main Window



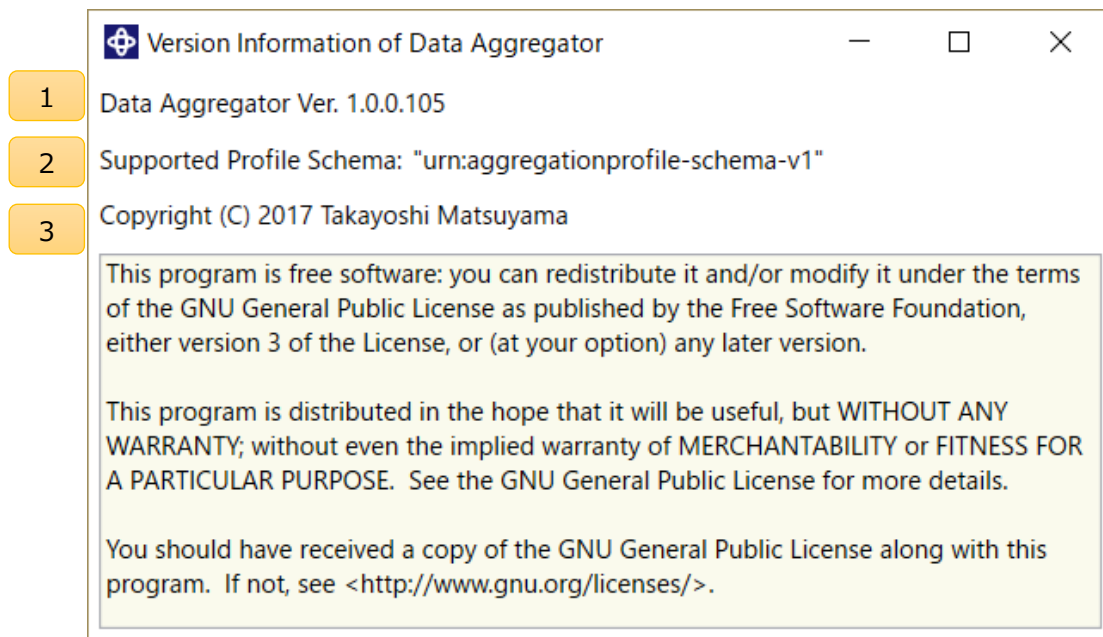
 Data Aggregator



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No.	Name	Description
1	Title Bar	<ul style="list-style-type: none"> • Icon, application name, minimize/maximize/close buttons. • System menu (No.11) opens when the icon is clicked.
2	UI Language Selector	<ul style="list-style-type: none"> • Changes displaying text language (Japanese/English).
3	Aggregation Profile Selector	<ul style="list-style-type: none"> • Changes aggregation profile. • Aggregation profiles are stored in the following location (It can be opened by clicking the label link). <i>Data Aggregator Install Folder</i>\AggregationProfiles • Changes aggregation language which is defined in the profile. • Aggregation profile →[Step#2 Prepare Aggregation Profiles]
4	Aggregation Target Folder Selector	<ul style="list-style-type: none"> • Changes aggregation target root folder.
5	Data Writing Direction Selector	<ul style="list-style-type: none"> • Changes result data writing direction (Left to Right / Top to Bottom).
6	Aggregation Button	<ul style="list-style-type: none"> • Starts aggregation.
7	Result File Link	<ul style="list-style-type: none"> • Displays path and name of the aggregation result Excel file. • Opens the result Excel file when clicked.
8	Result File Link Context Menu	<ul style="list-style-type: none"> • Opens the result Excel file location when clicked.
9	Notification Area	<ul style="list-style-type: none"> • Displays operating information such as progress, error, etc.
10	Notification Context Menu	<ul style="list-style-type: none"> • Clears notification area's text when clicked.
11	System Menu	<ul style="list-style-type: none"> • Displayed when the title icon is clicked. • Data Aggregator's specific menu items are following. • [Show User Manual] Shows the user manual. • [Version Information] Shows the version information window. • (Note: Default system menu items are shown in Windows OS language)

4.2. Version Information Window



No.	Name	Description
1	Version Information	<ul style="list-style-type: none"> Version number of Data Aggregator
2	Supported Aggregation Profile Schema's Namespace	<ul style="list-style-type: none"> Aggregation profile schema's namespace which this version of Data Aggregator supporting. This namespace must be written in the aggregation profile to let Data Aggregator recognize the aggregation profile. →[Step#2 Prepare Aggregation Profile]
3	Copyright	<ul style="list-style-type: none"> Copyright description.

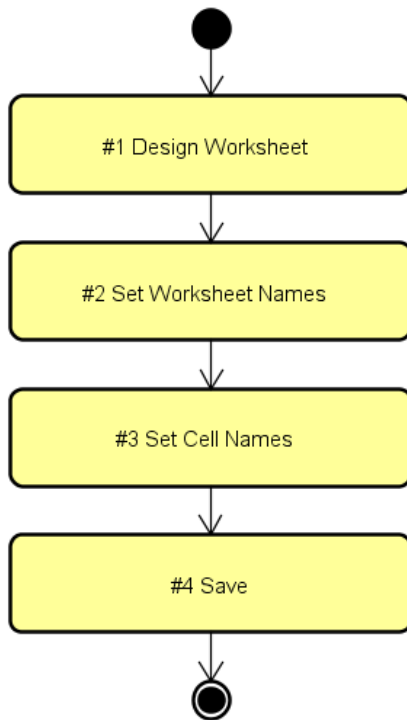
5. Sample

Sample files are stored in *Data Aggregator Install Folder*\Samples.

Sample File	Description
TestMatrixFiles <ul style="list-style-type: none"> └ TestMatrix1.xlsx └ TestMatrix2.xlsx └ TestMatrix3.xls 	Sample files for aggregation demo.
Template - TestMatrix.xlsx	Template Excel file of the aggregation demo Excel files.
TestMatrixProfile.xml	Aggregation profile for aggregation demo.

6. Step#1 Prepare Template Excel File

6.1. Steps to Use



Step	Description
#1	Arrange table layout, cell lines, color, text format, etc.
#2	Set worksheet names. Data Aggregator identifies the target worksheets with the worksheet name.
#3	Set cell names. Data Aggregator identifies the target cells with the cell name.
#4	Save the template Excel file.

6.1.1. Excel Worksheet Layout

Because Data Aggregator identifies the target cells using names, layout does not affect to the aggregation behavior. So, feel free to change the worksheet layout.

6.1.2. Find with Regular Expression

Some texts that express a text pattern are called "regular expression".

Flexible text search is possible by this regular expression.

For example,

Regular expression "Sheet.*" matches with texts "Sheet1", "Sheet-A", "Sheet(A)", etc.

Regular expression "Cell.*" matches with texts "Cell1", "Cell-A", "Cell(A)", etc.

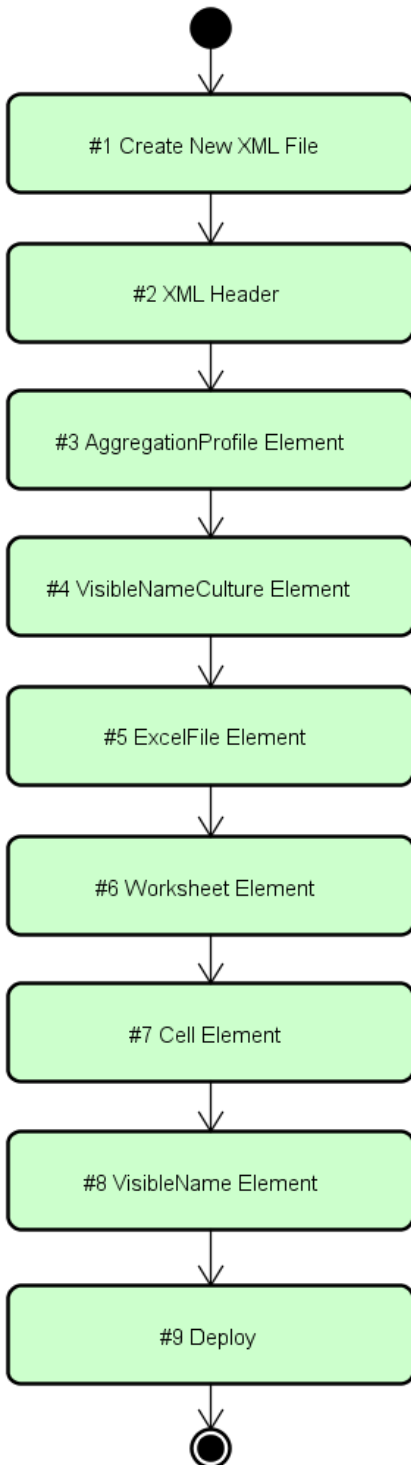
Note: "." means arbitrary single character. "*" means the previous pattern exists at least 0 times.

Note: ".*" means arbitrary single character exists at least 0 times.

In aggregation profiles, regular expression can be used in "Excel file name filter", "Worksheet name" and "Cell name". Aggregation profile might become simpler by using regular expression.

7. Step#2 Prepare Aggregation Profile

7.1. Steps to Use



Step	Description
#1	Create a text file using text editor such as Windows Notepad, and save it in UTF8 with arbitrary file name.
#2	Write XML header. <code><?xml version="1.0" encoding="utf-8" ?></code>
#3	Write AggregationProfile element. <code><AggregationProfile xmlns="urn:aggregationprofile-schema-v1" Name="Test Matrix Profile"></code> <ul style="list-style-type: none"> xmlns : Namespace of aggregation profile schema. Name : Name of aggregation profile.
#4	Write VisibleNameCulture element. <code><VisibleNameCultures> <VisibleNameCulture Culture="ja-JP"/></code> VisibleNameCulture is: <ul style="list-style-type: none"> Language which is supported by the aggregation profile. Shown at Data Aggregator's profile selector. Aggregation result is written in the selected language. Culture: Language code.
#5	Write ExcelFile element. <code><ExcelFile FileFilterRegex="Test.*"></code> <ul style="list-style-type: none"> FileFilterRegex : Regular expression of file name. Optional.
#6	Write Worksheet elements. <code><Worksheets> <Worksheet Name="Test.*" IsNameRegex="True"></code> <ul style="list-style-type: none"> Name: Worksheet name. IsNameRegex: [True][False]. Optional.
#7	Write Cell elements. <code><Cell Name="NumOfOK.*" IsNameRegex="True" CellValueType="Number" AggregationFunction="Sum"></code> <ul style="list-style-type: none"> Name: Cell name. IsNameRegex: [True][False]. Optional. CellValueType: [Text][Number][Date]. Optional. AggregationFunction: [Sum][Average]. Optional.
#8	Write VisibleName elements (Result label text). Optional. <code><VisibleName Culture="en" Text="Number of OK"/></code> <ul style="list-style-type: none"> Culture: Language code. Text: Label text.
#9	Locate created XML file in the following folder. <i>Data Aggregator Install Folder</i> \AggregationProfiles

7.2. Example of Aggregation Profile

Following is an extract of TestMatrixProfile.xml (*Data Aggregator Install Folder*¥Samples) with description.

```
<?xml version="1.0" encoding="utf-8" ?>      XML header
<AggregationProfile                          Aggregation profile
  xmlns="urn:aggregationprofile-schema-v1"   Namespace of aggregation profile
  Name="Test Matrix Profile"                Name of aggregation profile
  <VisibleNameCultures>                    Set of supported language code
    <VisibleNameCulture Culture="ja-JP"/>    Displayed language code: Japanese
    <VisibleNameCulture Culture="en"/>      Displayed language code: English
  </VisibleNameCultures>
  <ExcelFile FileFilterRegex="Test.*">    Search Excel file whose name is match with
                                           regular expression"Test.*".
    <Worksheets>                          Set of worksheets
      <Worksheet                           Search worksheet whose name is match with regular expression "Test.*"
        Name="Test.*"                     in the parent Excel file.
        IsNameRegex="True">
          <Cell                             Search cell whose name is match with regular expression "NumOfOK.*"
            Name="NumOfOK.*"              in the parent worksheet.
            IsNameRegex="True"
            CellValueType="Number"        Cell value type is number.
            AggregationFunction="Sum">    Cell aggregation function is SUM.
              <VisibleName Culture="ja-JP" Text="OK 件数"/>    Result Label (Japanese)
              <VisibleName Culture="en" Text="Number of OK items"/>    Result Label (English)
            </Cell>
          </Worksheet>
        </Worksheets>
      </ExcelFile>
    </AggregationProfile>
```

7.3. XML Schema of Aggregation Profile

Rules of XML document structure is called "XML schema". XML schema is written in XML.

For the aggregation profile, a XML schema "AggregationProfile.xsd" is defined.

All aggregation profile XML must follow the XML schema.

Data Aggregator validates the aggregation profiles based on the XML schema.

If the aggregation profiles have error, the errors are shown in the Notification Area in the Data Aggregation starting procedure.

AggregationProfile.xsd substance is embedded in Data Aggregator executable file.

(Copy of AggregationProfile.xsd is stored in the *Data Aggregator Install Folder*¥Manuals folder.)

Following is the content of AggregationProfile.xsd.

The principal rules are described in 7.1 and 7.2. Please refer AggregationProfile.xsd if more detail information is need.

```
<?xml version="1.0" encoding="utf-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns="urn:aggregationprofile-schema-v1"
  targetNamespace="urn:aggregationprofile-schema-v1"
  elementFormDefault="qualified">
  <!-- AggregationProfile -->
  <xs:element name="AggregationProfile">
    <xs:complexType>
```

```

<xs:sequence>
  <!-- AggregationProfile/VisibleNameCultures -->
  <xs:element name="VisibleNameCultures" minOccurs="1" maxOccurs="1">
    <xs:complexType>
      <xs:sequence>
        <!-- AggregationProfile/VisibleNameCultures/VisibleNameCulture -->
        <xs:element name="VisibleNameCulture" minOccurs="0" maxOccurs="unbounded">
          <xs:complexType>
            <!-- AggregationProfile/VisibleNameCultures/VisibleNameCulture/@Cuture -->
            <xs:attribute name="Cuture" type="xs:string" use="required"/>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
  <!-- AggregationProfile/ExcelFile -->
  <xs:element name="ExcelFile" minOccurs="1" maxOccurs="1">
    <xs:complexType>
      <xs:sequence>
        <!-- AggregationProfile/ExcelFile/Worksheets -->
        <xs:element name="Worksheets" minOccurs="1" maxOccurs="1">
          <xs:complexType>
            <xs:sequence>
              <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet -->
              <xs:element name="Worksheet" minOccurs="0" maxOccurs="unbounded">
                <xs:complexType>
                  <xs:sequence>
                    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell -->
                    <xs:element name="Cell" minOccurs="0" maxOccurs="unbounded">
                      <xs:complexType>
                        <xs:sequence>
                          <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/VisibleName -->
                          <xs:element name="VisibleName" minOccurs="0" maxOccurs="unbounded">
                            <xs:complexType>
                              <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/VisibleName/@Culture -->
                              <xs:attribute name="Culture" type="xs:string" use="required"/>
                              <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/VisibleName/@Text -->
                              <xs:attribute name="Text" type="xs:string" use="required"/>
                            </xs:complexType>
                          </xs:element>
                        </xs:sequence>
                      </xs:complexType>
                    </xs:element>
                    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/@Name -->
                    <xs:attribute name="Name" type="xs:string" use="required"/>
                    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/@IsNameRegex -->
                    <xs:attribute name="IsNameRegex" type="xs:string" use="optional"/>
                    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/@CellValueType -->
                    <xs:attribute name="CellValueType" use="optional">
                      <xs:simpleType>
                        <xs:restriction base="xs:string">
                          <xs:enumeration value="Text"/>
                          <xs:enumeration value="Number"/>
                          <xs:enumeration value="Date"/>
                        </xs:restriction>
                      </xs:simpleType>
                    </xs:attribute>
                    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/Cell/@AggregationFunction -->
                    <xs:attribute name="AggregationFunction" use="optional">
                      <xs:simpleType>
                        <xs:restriction base="xs:string">
                          <xs:enumeration value="Sum"/>
                          <xs:enumeration value="Average"/>
                        </xs:restriction>
                      </xs:simpleType>
                    </xs:attribute>
                  </xs:sequence>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
          </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
  </xs:element>

```

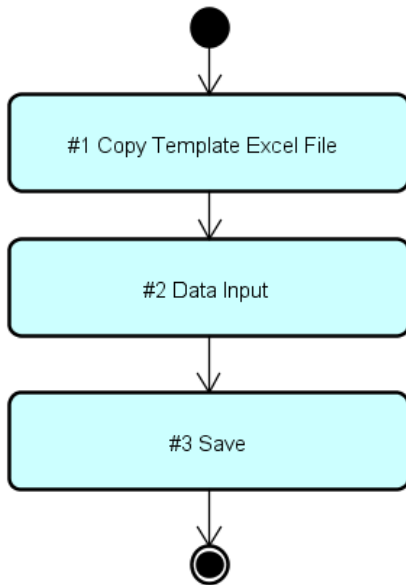
```

        </xs:complexType>
        </xs:element>
    </xs:sequence>
    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/@Name -->
    <xs:attribute name="Name" type="xs:string" use="required"/>
    <!-- AggregationProfile/ExcelFile/Worksheets/Worksheet/@IsNameRegex -->
    <xs:attribute name="IsNameRegex" type="xs:string" use="optional"/>
    </xs:complexType>
    </xs:element>
    </xs:sequence>
    </xs:complexType>
    </xs:element>
    </xs:sequence>
    <!-- AggregationProfile/ExcelFile/@FileFilterRegex -->
    <xs:attribute name="FileFilterRegex" type="xs:string" use="optional"/>
    </xs:complexType>
    </xs:element>
    </xs:sequence>
    <!-- AggregationProfile/@Name -->
    <xs:attribute name="Name" type="xs:string" use="required"/>
    </xs:complexType>
    </xs:element>
</xs:schema>

```

8. Step#3 Input Actual Data

8.1. Steps to Use



Step	Description
#1	Copy the template Excel file for specific data input.
#2	Input the data.
#3	Save the data Excel file in the aggregation folder.

8.2. Filter Excel File at Aggregation

By using FileFilterRegex attribute, target Excel files can be filtered with regular expression for the filename.

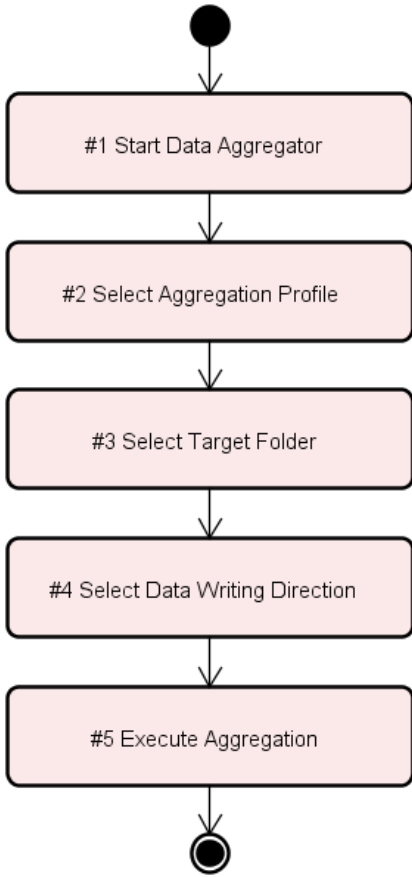
8.3. Location of Data Excel Files

In aggregation, Data Aggregator searches the specified folder and all sub folders. Sub folders would be useful to organize the data Excel files.

- Aggregation Root
- Test Result 1
- Test Result 2
- Test Result 3

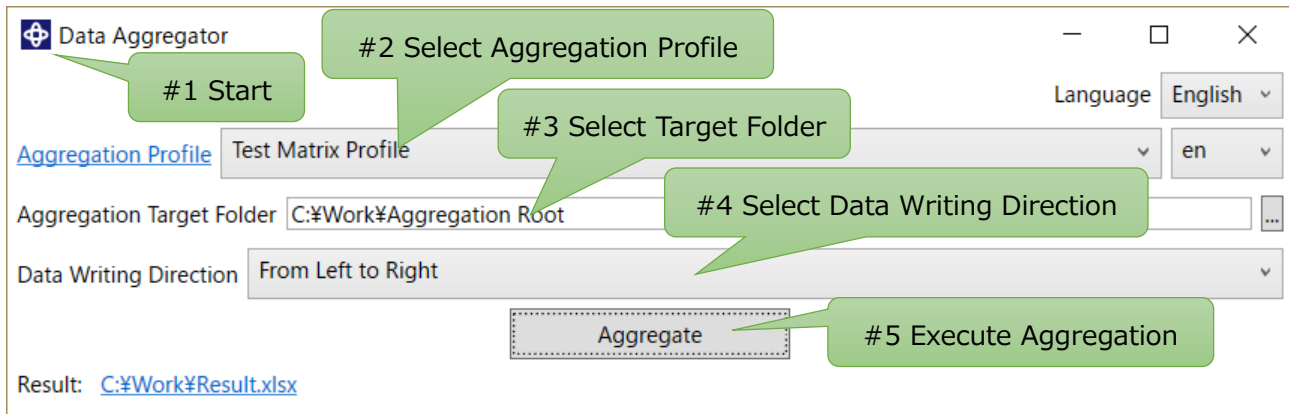
9. Step#4 Aggregation

9.1. Steps to Use



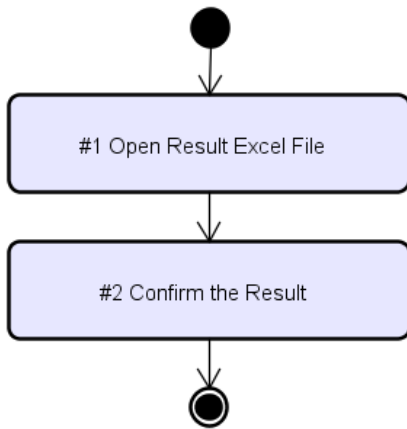
Step	Description
#1	Start Data Aggregator.
#2	Select aggregation profile.
#3	Select the target folder where the data Excel files are stored in.
#4	Select the direction that the aggregated data are written in.
#5	Click the Aggregation button. A File dialog opens to determine the location and name of the result Excel file. After clicking OK button, aggregation will start.

9.2. Screenshot



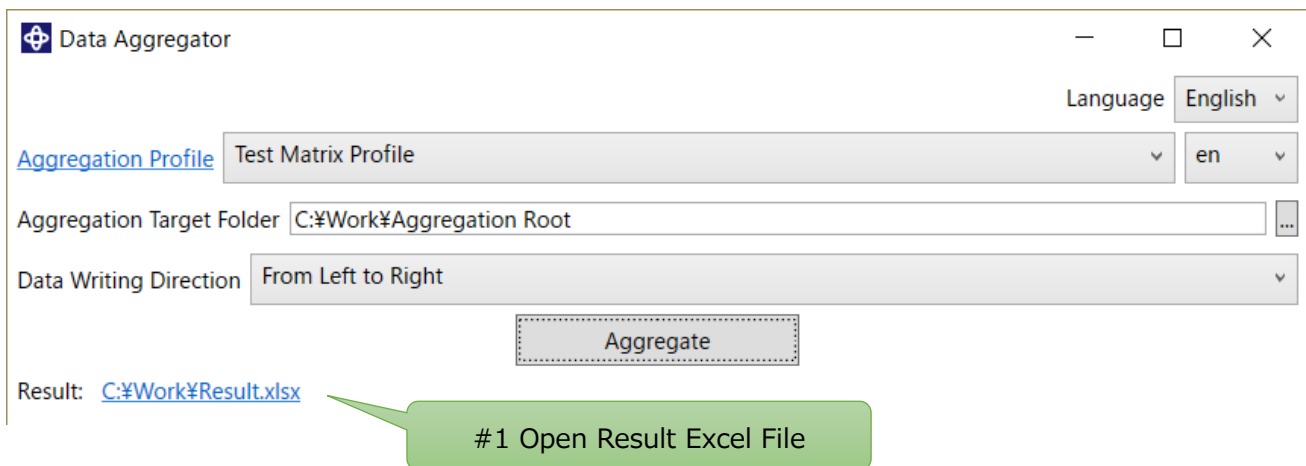
10. Step#5 Use Aggregation Result

10.1. Steps to Use



Step	Description
#1	The result Excel file opens by clicking "Result" link.
#2	Confirm that the data are stored and formulas are set based on the aggregation profile.

10.2. Screenshot



11. Copyright

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12. Document History

Rev	Date	Content
Rev01	2017/1/5	Document created.