Library Documentation

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# Excel Library

The Excel Library contains useful function which is often repeated in a project.

## Auto Fit Columns

Auto fit the columns of all the sheets or only the specified sheets of an Excel file.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_ExcelFile | String | The operation will be performed on the specified Excel file. The absolute path of the Excel file is needed with the file extension. The string must be quoted. |
| In\_AllSheets | Boolean | If checked, all the columns of all the sheets will be set to auto fit the content. The next argument is ignored if this value is set to true. |
| In\_SheetName | String[] | Only set the columns of the specified sheet(s) to autofit. The argument is be a list of string (in other words string[]). The in\_AllSheets must be set to false for this argument to be used. |

## Convert Excel File Type

Convert the file type of an Excel file to xlsx, xls, xlsm or xlsb.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_ExcelFile | String | The operation will be performed on the specified Excel file. The absolute path of the Excel file is needed with the file extension. The string must be quoted. |
| In\_Extension | String | The extension of the new Excel file. The in\_ExcelFile is converted to the file type specified in this string argument. This string must be quoted. |

## Index To Column Letter

Convert table indexes to Excel column letter, for example index 0 = column A. This operation is not limited to single letters, for example 26 = AA and 702 = AAA is supported. The library is not limited by the length of the resulting string.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_Index | Integer | The index of the column that needs to be converted to the column letter. |
| **Out Arguments** | Out\_Result | String | The resulting column letter. |

This operation uses the invoke code activities. The invoke code activity is significantly slower than implementing a similar algorithm with more fundamental activity like the assign activity. Rather use the “Index To Column Activities” operation for improved performance.

## Index To Column Letter Activities

Convert table indexes to Excel column letter, for example index 0 = column A. This operation is not limited to single letters, for example 26 = AA and 702 = AAA is supported. The library is not limited by the length of the resulting string.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_Index | Integer | The index of the column that needs to be converted to the column letter. |
| **Out Arguments** | Out\_Result | String | The resulting column letter. |

This operation mainly uses assign activities. The assign activities are significantly faster than implementing a similar algorithm with the invoke code activity. Use this (“Index To Column Activities”) operation for improved performance.

## Sum Table

Add a sum row to the bottom of a range or a sum column at the end of a range. If only a row or a column is specified only the row/column will be summed. The activity also has the capabilities to sum multiple rows and/or columns. Both the rows and columns can be summed in one activity.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_ExcelFile | Integer | The operation will be performed on the specified Excel file. The absolute path of the Excel file is needed with the file extension. The string must be quoted. |
| In\_Range | String | The range of the data to be summed. The data can be a single row/column or in table format. The string must be quoted. |
| In\_SumColumns | Boolean | If checked, the columns will be summed, and the result will be placed below the data. |
| In\_SumRows | Boolean | If checked, the rows will be summed, and the result will be placed to the right of the data. |
| In\_SheetName | String | The name of the sheet where the data can be found. The default value is “Sheet1”. The string must be quoted. |

This activity uses VBA to sum the table. The VBA instruction is stored in a module named Module5.bas which is used in the excel file to sum the data.

# Miscellaneous Library

There are many things which are reused across projects that do not fall under the above categories.

## Directories

This activity can create a list of local directories if they do not exist, or delete and recreate them if they already exist.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_Directories | String[] | The list of directories that must be created or overwritten. |

*On my machine UiPath cannot delete folders. I don’t know if it because of permission on my machine or another problem. I implemented a lot of error handling in this activity to combat this shortcoming. I observed that the delete folder activity deletes all the files in the folder, but not any sub folder or the intended folder. This approximately acts as if the folder is deleted and recreated, provided there is no subfolders.*

## Local Report File

Create a local report file, update a local report file, and read a local report file. This can be useful when tracking exceptions.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_ReportLocation | String | The directory where the report file will be stored. The string must be quoted. |
| In\_ReportName | String | The name of the report. The string must be quoted. |
| In\_LineMessage | String | The message to be stored in the report file. The message will be preceded by the date and time. |
| In\_CreateNew | Boolean | If checked, a new file is created in the specified location. If the file already exists, the file is overwritten. The file heading contains the date and time of the file creation. |
| In\_OpenReport | Boolean | If checked, the report file is opened to allow review of the file. |

## Randomly Generate Password

A password string is randomly generated to meet the specified length. The default characters used to create the password string are all the lower case letters. Options are available to make the password more secure by including uppercase letters, numbers, and symbols.

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Name** | **Data Type** | **Description** |
| **In Arguments** | In\_PasswordLength | Integer | The index of the column that needs to be converted to the column letter. Default is 20 characters long. |
| In\_UpperCase | Boolean | If checked, the password string will contain uppercase letters. Default is false. |
| In\_Numbers | Boolean | If checked, the password string will contain numbers. Default is false. |
| In\_Symbols | Boolean | If checked, the password string will contain symbols. The symbols are limited to:  ! # $ % & \* + @. Default is false. |
| **Out Arguments** | Out\_Password | String | The resulting password string. |

The algorithm that was implemented in this activity is briefly explained here. The activity generates random numbers. If the number is within the allowed range, the number is converted to a letter according to the ASCII value table. If the number is not allowed a new number is generated. The allowed numbers depend on the allowed letters which is summarised in the table below.

Table 1: ASCII Values

|  |  |
| --- | --- |
| **Description** | **ASCII Numbers** |
| Symbols | 33!, 35#, 36$, 37%, 38&, 42\*, 43+, 64@ |
| Numbers | 48-57 |
| Upper Case | 65-90 |
| Lower Case | 97-122 *(Default)* |