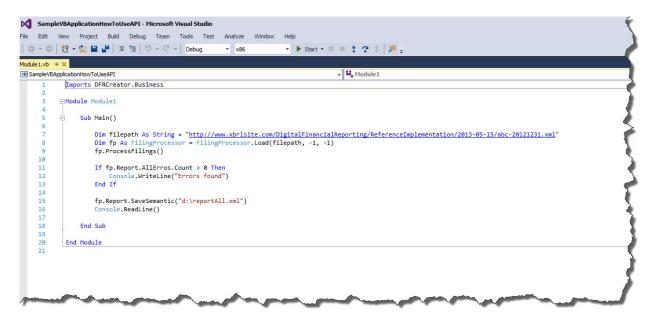
API, Batch Processing, Plugins

By Charles Hoffman, CPA

This document makes you aware of and provides you with information related to using the Pesseract API to create software applications, to run batch processes, or to create an application plugin.

STEP 1: Pesseract is a platform.

While Pesseract is a software application which provides a graphical user interface (GUI); it also provides an application programming interface (API) that you can use to build your own applications.



STEP 2: Batch processing.

Here is a basic example related to using Pesseract at the command line or using a BATCH file to process multiple XBRL instance documents and generate machine-readable output:

| Name ^ | Date modified | Туре | Size |
|--------------------------|--------------------|--------------------|------|
| BatchValidationOutput | 10/31/2017 3:53 PM | File folder | |
| ProcessSet.bat | 4/9/2017 10:19 AM | Windows Batch File | 1 KB |
| ProcessSet_Instances.txt | 6/27/2017 5:50 PM | TXT File | 1 KB |
| | | | |

Batch File Contents: ProcessSet.bat

"C:\Program Files (x&b)\DigitalFinancialReporting\Pesseract\DFRCreator\pesseractbatch.exe" i:"D:\PesseractBatchProcessing\ProcessSet_Instances.txt"

echo ON

```
echo Processing completed successfully!
```

Text file contents: ProcessSet_Instances.txt

http://www.sec.gov/Archives/edgar/data/789019/000119312516662209/msft-20160630.xml
http://www.sec.gov/Archives/edgar/data/320193/000162828016020309/aap1-20160924.xml
http://www.sec.gov/Archives/edgar/data/66740/000165204417000008/goog-20161231.xml
http://www.sec.gov/Archives/edgar/data/858877/000085887716000117/csco-20160730.xml
http://www.sec.gov/Archives/edgar/data/1635484/000114420417017430/cnnb-20161231.xml

Run the batch file

| 🖾 C:\Windows\system32\cmd.exe |
|--|
| Loading dependent taxonomies from: (http://xbrl.sec.gov/stpr/2011/stpr-2011-01-3 |
| 1.xsd): Already loaded: nonNumeric-2009-12-16.xsd Loading imported taxonomies and linkbases, Loading Labels: stpr-2011-01-31.xsd |
| Loading dependent taxonomies from: (http://xbrl.sec.gov/stpr/2011/stpr-2011-01-3 |
| 1.xsd): Already loaded: nonNumeric-2009-12-16.xsd Loading imported taxonomies and linkbases, Loading References: stpr-2011-01-31.x |
| sd |
| Loading imported taxonomies and linkbases, Loading Elements: stpr-2011-01-31.xsd |
| Loading imported taxonomies and linkbases, Loading Imports: msft-20160630.xsd |
| Loading imported taxonomies and linkbases, Loading Presentation: msft-20160630.x sd |
| su Loading imported taxonomies and linkbases, Loading Calculation: msft-20160630.xs |
| d Loading imported taxonomies and linkbases, Loading Definitions: msft-20160630.xs |
| d |
| Loading imported taxonomies and linkbases, Loading Formulas: msft-20160630.xsd |
| Loading imported taxonomies and linkbases, Loading Labels: msft-20160630.xsd Loading imported taxonomies and linkbases, Loading References: msft-20160630.xsd |
| |
| Loading imported taxonomies and linkbases, Loading Elements: msft-20160630.xsd Discoverable taxonomy set files located and loaded successfully. |
| |
| Begin loading of network information. |

Output: BatchValidationOutput subdirectory

| aapl-20160924 10/31/2017 3:52 PM File folder cnnb-20161231 10/31/2017 3:53 PM File folder csco-20160730 10/31/2017 3:53 PM File folder goog-20161231 10/31/2017 3:52 PM File folder mmm-20161231 10/31/2017 3:52 PM File folder msft-20160630 9/3/2017 9:27 AM File folder Output_Summary.xml 10/31/2017 3:53 PM XML Document 4 KB | Name * | Date modified | Туре | Size | 3 |
|--|--------------------|------------------------------|--------------|----------|---|
| iiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiiii | 퉬 aapl-20160924 | 10/31/2017 3:52 PM | File folder | | |
| goog-20161231 10/31/2017 3:52 PM File folder mmm-20161231 10/31/2017 3:52 PM File folder msft-20160630 9/3/2017 9:27 AM File folder | 鷆 cnnb-20161231 | 10/31/2017 3:53 PM | File folder | | |
| Immm-20161231 10/31/2017 3:52 PM File folder Immsft-20160630 9/3/2017 9:27 AM File folder | 퉬 csco-20160730 | 10/31/2017 3:53 PM | File folder | | |
| msft-20160630 9/3/2017 9:27 AM File folder | 퉬 goog-20161231 | 10/31/2017 3:52 PM | File folder | | |
| | 퉬 mmm-20161231 | 10/31/2017 3:52 PM | File folder | | : |
| Output_Summary.xml 10/31/2017 3:53 PM XML Document 4 KB | 퉬 msft-20160630 | 9/3/2017 9:27 AM | File folder | | |
| | Output_Summary.xml | 10/31/2017 3:53 PM | XML Document | 4 KB | |
| | | | | | |
| | | Callen and the second second | | . | - |
| and the second and the second and the second s | • | | | - | |

One subdirectory: appl-20160924

| Name ^ | Date modified | Туре | Size |
|---|--------------------|---------------|-----------|
| DisclosureDiscoveryTrace.log | 10/31/2017 3:52 PM | Text Document | 10 KB |
| DisclosureMechanicsValidationTrace.log | 10/31/2017 3:52 PM | Text Document | 81 KB |
| FACValidationTrace.log | 10/31/2017 3:51 PM | Text Document | 69 KB |
| Messages.xml | 10/31/2017 3:52 PM | XML Document | 20 KB |
| 👜 report.xml | 10/31/2017 3:52 PM | XML Document | 12,559 KB |
| report_facttable.xml | 10/31/2017 3:52 PM | XML Document | 11,730 KB |
| report_modelstructure.xml | 10/31/2017 3:52 PM | XML Document | 910 KB |
| SummaryOfSemanticDiscovery.xml | 10/31/2017 3:52 PM | XML Document | 2 KB |
| ValidationResult_DisclosureMechanics.xml | 10/31/2017 3:52 PM | XML Document | 67 KB |
| ValidationResult_FAC.xml | 10/31/2017 3:52 PM | XML Document | 13 KB |
| ValidationResult_ModelStructure.xml | 10/31/2017 3:52 PM | XML Document | 6 KB |
| ValidationResult_ReportingChecklist.xml | 10/31/2017 3:52 PM | XML Document | 23 KB |
| ValidationResult_TypeOrClassRelations.xml | 10/31/2017 3:52 PM | XML Document | 1 KB |

All the files are machine readable XML or TEXT files.

STEP 3: Plugins.

Using the Pesseract API or other web services or other APIs; add ins or plug ins can be created to extend the functionality of the Pesseract GUI or API:

| esseract Options | | | | | ? |
|--------------------|--|-------------------|------------|--------------------|---------------|
| General | View and manage application a | dd-ins | | | |
| Language | Add-ins | | | | |
| Cache | Reporting Profile / Reporting Scheme | Title | Category | Description | Cost |
| Cacile | XBRL-based public company financial repo | Connection Man | WebService | To manage the c | Pay-as-you-go |
| Reporting Profiles | XBRL-based public company financial repo | Reporting Styles | Metadata | A reporting style, | Free |
| | XBRL-based public company financial repo | US GAAP Public | Metadata | List of disclosure | Free |
| Vorkflow | XBRL-based public company financial repo | Entities Explorer | WebService | Entities Explorer | Pay-as-you-go |
| | XBRL-based public company financial repo | Configure Metad | Metadata | Configure Metad | Free |
| dvanced | XBRL-based public company financial repo | Add hoc Query of | WebService | Add hoc Query of | Free |
| Add-Ins | XBRL-based public company financial repo | Query Facts | WebService | Query Facts | Pay-as-you-g |
| Add-Ins | XBRL-based public company financial repo | Report Facts | WebService | Report Facts | Pay-as-you-g |
| | × | | | | |
| | | | | | |
| | | | | Ok | Cancel |