PHI Hide utility

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PHI Hide is a simple utility to help in post processing of the Postman `run` JSON file to replace PHI information from a list of replacements in a separate JSON file.

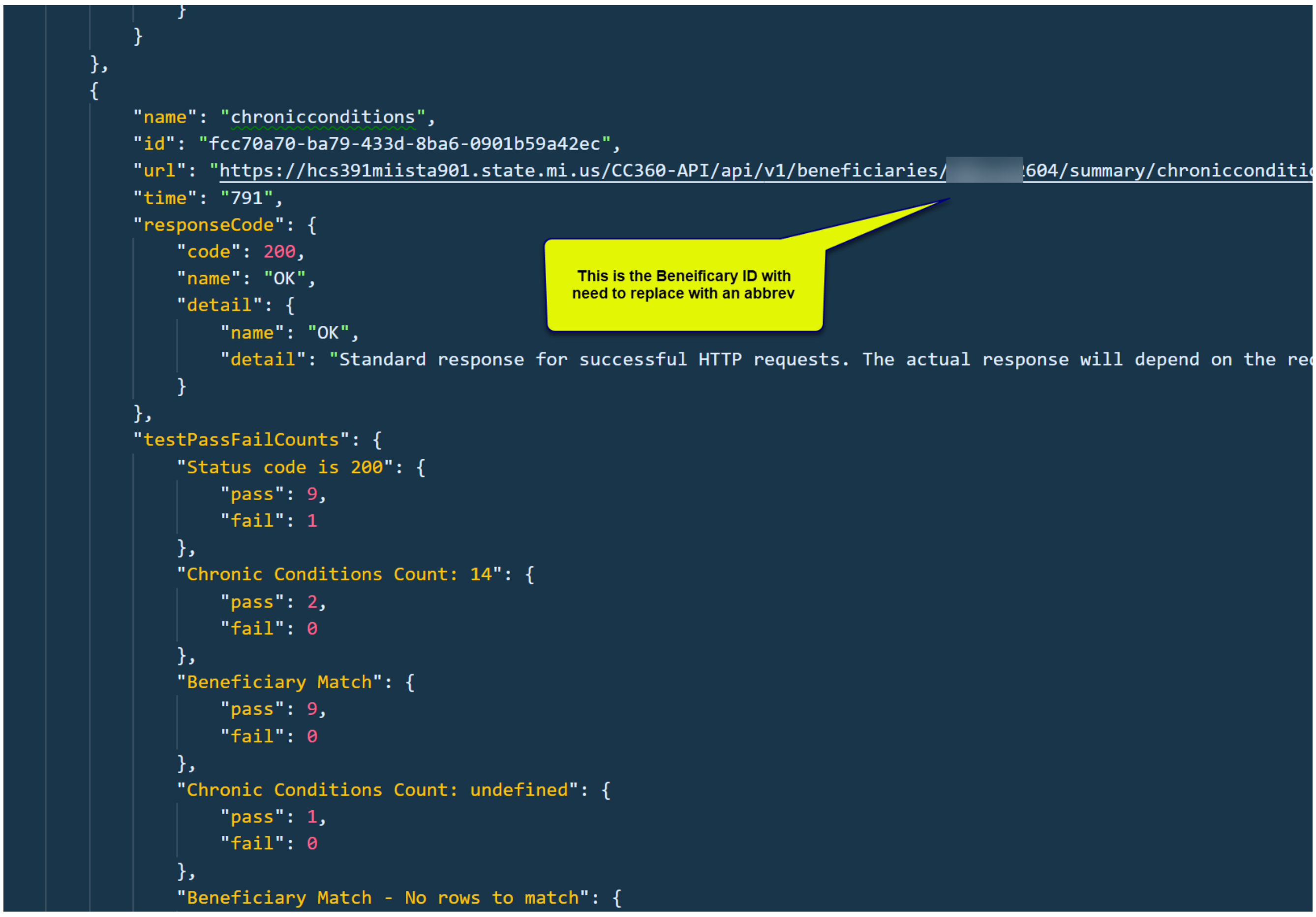
Security

While this document and project is about Protected Health Information PHI great care has been take to make certain no PHI exist in the documents or code.

Structure

Postman `Run` fileDoc

The Postman `Run` file has beneficiary information that needs to be replace with non-identifying information.

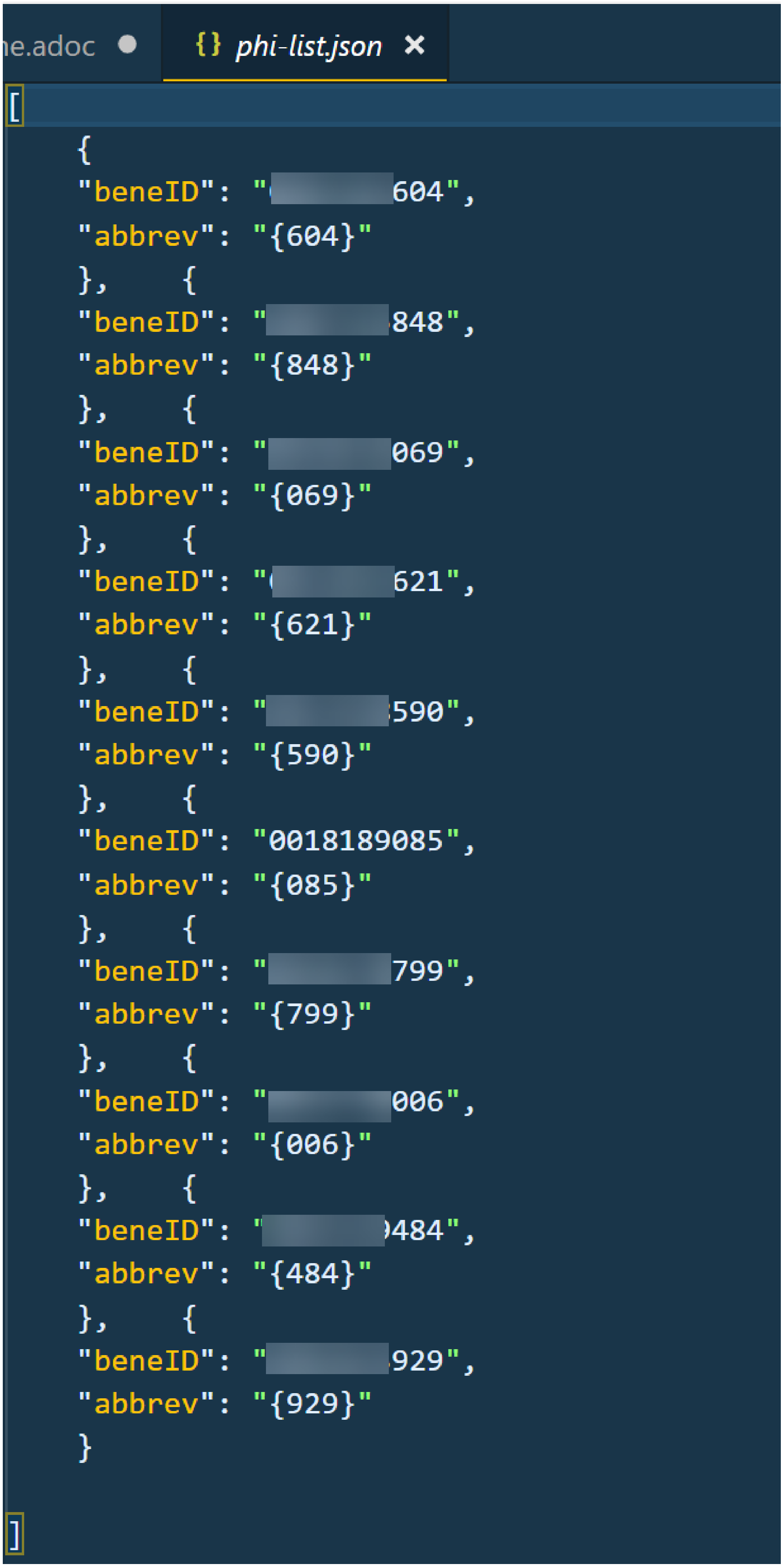

This is the Beneifcary ID with need to replace with an abbrev

```
            }
        }
    },
    {
        "name": "chronicconditions",
        "id": "fcc70a70-ba79-433d-8ba6-0901b59a42ec",
        "url": "https://hcs391miista901.state.mi.us/CC360-API/api/v1/beneficiaries/[redacted]604/summary/chronicconditi
        "time": "791",
        "responseCode": {
            "code": 200,
            "name": "OK",
            "detail": {
                "name": "OK",
                "detail": "Standard response for successful HTTP requests. The actual response will depend on the re
            }
        },
        "testPassFailCounts": {
            "Status code is 200": {
                "pass": 9,
                "fail": 1
            },
            "Chronic Conditions Count: 14": {
                "pass": 2,
                "fail": 0
            },
            "Beneficiary Match": {
                "pass": 9,
                "fail": 0
            },
            "Chronic Conditions Count: undefined": {
                "pass": 1,
                "fail": 0
            },
            "Beneficiary Match - No rows to match": {
```

Figure 1. Postman run example

phi-hide.json file

This `phi-hide.json` file is used to drive the Postman run process to run (x) interations based on the number of values in this file.



```
[
    {
    "beneID": "[redacted]604",
    "abbrev": "{604}"
    },    {
    "beneID": "[redacted]848",
    "abbrev": "{848}"
    },    {
    "beneID": "[redacted]069",
    "abbrev": "{069}"
    },    {
    "beneID": "[redacted]621",
    "abbrev": "{621}"
    },    {
    "beneID": "[redacted]590",
    "abbrev": "{590}"
    },    {
    "beneID": "0018189085",
    "abbrev": "{085}"
    },    {
    "beneID": "[redacted]799",
    "abbrev": "{799}"
    },    {
    "beneID": "[redacted]006",
    "abbrev": "{006}"
    },    {
    "beneID": "[redacted]484",
    "abbrev": "{484}"
    },    {
    "beneID": "[redacted]929",
    "abbrev": "{929}"
    }

]
```

Figure 2. phi-hide file

The definitions are

1. beneID - 10 digit file identifying a beneficiary (PHI)
2. abbrev - What will be displayed in the beneId's place

This file need to hid the PHI beneficiary ID and provide a way to identify the test using the abbrev.

Node app

This app will be call `phi-hide` it is a utility.

There can be 3 optional arguments

1. `-inFile` - pathname to the Postman `Run` file
2. `-outFile`- pathname to the Revised `Run` file
3. `-phiFile`- pathname of the PHI replacement values

CLI Libraries

Following are standard libraries I use for CLI utilities.

```
npm install --save chalk clear figlet inquirer
```

The dependencies are

Dependencies

```
  "dependencies": {
    "chalk": "^2.4.1", ①
    "clear": "^0.1.0", ②
    "figlet": "^1.2.0", ③
    "inquirer": "^6.0.0" ④
  }
```

① Added color to text

② Clears the terminal window

③ Draws big text ASCII characters

④ Ask questions saves responses (Future)

Additional libraries

I have used the following libraries in this project

```
npm install --save minimist pause
```

minimist - Used to process the arguments text after the `node phi-hide` **pause** - Provides a pause function with message

Compile into EXE

To compile `phi-hide.js` into `phi-hide.exe` will require the use of the `pkg` node package.

install it globally.

```
npm install pkg -g
```

There are a few changes needed to the `package.json` file.

pkg package.json updates

```
  "pkg": {
    "assets": "node_modules/figlet/fonts/Standard.flf" ①
  },
  "bin": "./phi-hide.js"  ②
```

① Required for figlet to display ascii like large chars

② bin directory points to the app main js file

The statement to compile `phi-hide.js`is

```
pkg package.json --targets node8-win-x64
```

Code tricks

Console.Log shortened

The `console.log` statement can be shortened to just `log` with

console.log shortened

```
// -- Abbrevation for console.log
const log = console.log;
```

Global replace

The standard node `replace` function only replaces the first occurence.

To get `global` replace to work the `RegEx` regular expression function is used. The `g` option is what sets the global

Globale replace

```
inputText = inputText.replace(new RegExp(thisText, 'g'), thatText);
```

Passing parameters

To quickly interpet the parameters string the `minimist` library was used.

The code to extract an object with the parameters in it

Parameteres Code

```
// --- Minimist is a parameter parsing function slice(2) is that arguments after
0=node, 1=program name
//     argv function for all parameters
const parms = require('minimist')(process.argv.slice(2));
```

The result for the code is an objected named `parms`.

minimist Result

```
parms: {
    "_": [],
    "inFile": "postman-test-run.json",
    "phiFile": "phi-list.json",
    "outFile": "hhh.txt"
}
```

The last step is to get the `values` for the three input parameters.

The `fail` variable is used later in the code to display help message for `phi-hide`.

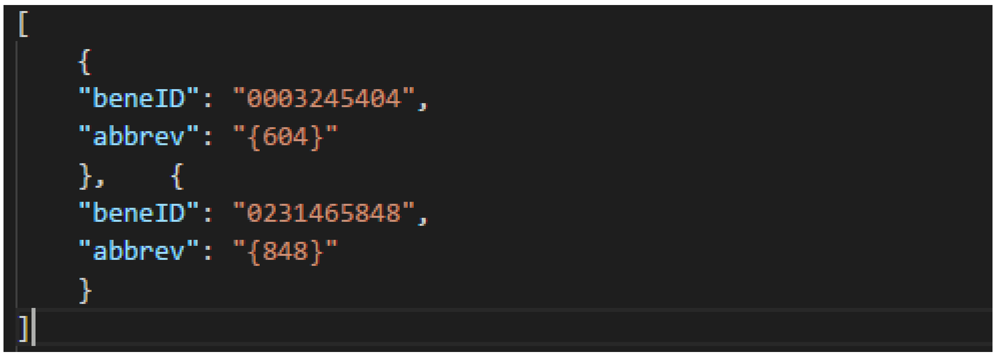
Get Parameter values

```
// --- Handle arguments send as --inFile abc.json --outFile abc.lll --phiFile
alpha.json
if (!parms.hasOwnProperty('inFile')){fail=true}else{inFile=parms['inFile']};
if (!parms.hasOwnProperty('outFile')){fail=true}else{outFile=parms['outFile']};
if (!parms.hasOwnProperty('phiFile')){fail=true}else{phiFile=parms['phiFile']};
```

Development files

1. **inFile:** ./postman-test-run.json
2. **outFile:** ./postman-test-run.out.json
3. **phiFile:** ./phi-hide.json

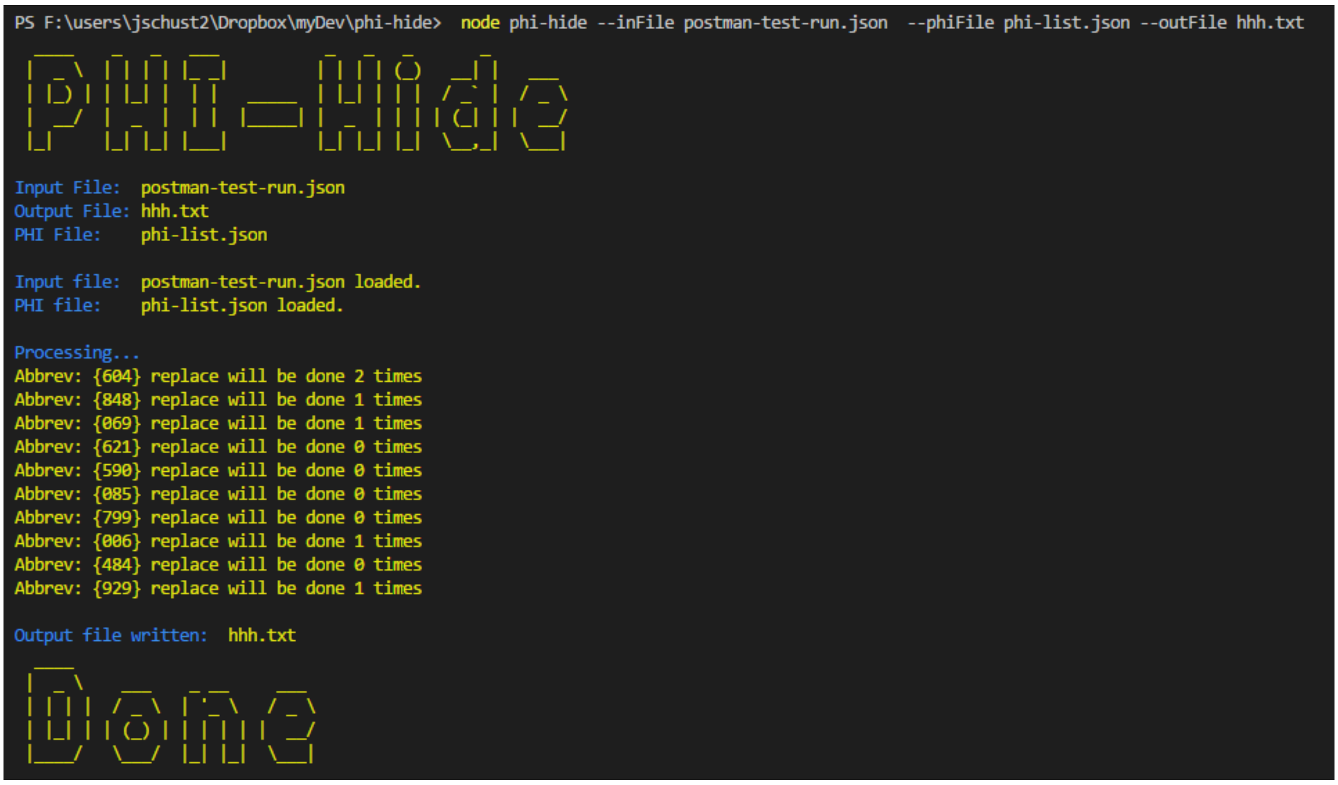
The `phiFile` JSON file needs to be in a special format.



```
[
    {
    "beneID": "0003245404",
    "abbrev": "{604}"
    },    {
    "beneID": "0231465848",
    "abbrev": "{848}"
    }
]
```

Figure 3. phiFile format

Using PHI-HIDE



```
PS F:\users\jschust2\Dropbox\myDev\phi-hide>  node phi-hide --inFile postman-test-run.json  --phiFile phi-list.json --outFile hhh.txt
 ____  _   _ ___          _   _ _     _      
|  _ \| | | |_ _|        | | | (_) __| | ___ 
| |_) | |_| || |  _____  | |_| | |/ _` |/ _ \
|  __/|  _  || | |_____| |  _  | | (_| |  __/
|_|   |_| |_|___|        |_| |_|_|\__,_|\___|

Input File:  postman-test-run.json
Output File: hhh.txt
PHI File:    phi-list.json

Input file:  postman-test-run.json loaded.
PHI file:    phi-list.json loaded.

Processing...
Abbrev: {604} replace will be done 2 times
Abbrev: {848} replace will be done 1 times
Abbrev: {069} replace will be done 1 times
Abbrev: {621} replace will be done 0 times
Abbrev: {590} replace will be done 0 times
Abbrev: {085} replace will be done 0 times
Abbrev: {799} replace will be done 0 times
Abbrev: {006} replace will be done 1 times
Abbrev: {484} replace will be done 0 times
Abbrev: {929} replace will be done 1 times

Output file written:  hhh.txt
  ____                   
 |  _ \  ___  _ __   ___ 
 | | | |/ _ \| '_ \ / _ \
 | |_| | (_) | | | |  __/
 |____/ \___/|_| |_|\___|
```

Figure 4. Running phi-hide

Document History

Table 1. Document History

Date	Version	Author	Description
07/04/2018	V2.1c	JHRS	much of the app finished
06/29/2018	V2,1b	JHRS	Initial version