Javascript for calculating both UCID and ECID is available in file **Javascript UCID and ECID code example - WIpop manual entry popup.htm** within this zip file. If you cannot use or adapt that code, refer to the instructions below.

Below is a pseudocode description of our version of the NYSIIS algorithm:

Function NYSIIS (passedName)

Var name

Set name = passedName

Set name to upper case

Remove all spaces and non-alphabetic characters from name

If name begins with MAC, replace with MCC

Else if name begins with KN, replace with NN

Else if name begins with K, replace with C

Else if name begins with PH or PF, replace with FF

Else if name begins with SCH, replace with SSS

End If

If name ends with EE or IE, replace with Y

Else if name ends with DT, RT, RD, NT or ND, replace with D

End if

Var  firstCharacter

If name = blank, set firstCharacter = A

Else

   firstCharacter = name character(0)  // character 0 is the first character

   If name.length = 1 set name = name + A

  End if

End if

var remainingName

If name.length = 1 set remainingName = blank

Else set remainingName = name character(1) through the end of name

End if

If remainingName contains SCH, replace with SSS

End if

If remainingName contains PH, replace with FF

End if

Set remainingName = firstCharacter + remainingName

For i = 1, i < remainingName.Length, i++

  var thisChar = remainingName character(i)

   var nextChar = blank

  var prevChar = remainingName character (i – 1)

   If i < (remainingName.Length – 1)

          nextChar = remaingName character (i + 1)

   end if

   If thischar = E and nextchar = V

        remainingName character(i) = A

       remainingName character(i + 1) = F

        i = i + 1

    else if thisChar is a vowel

          remainingName character (i) = A

   else if thisChar = Q

          remainingName character (i) = G

    else if thisChar = Z

          remainingName character (i) = S

    else if thisChar = M

          remainingName character (i) = N

   else if thisChar = K

      if nextChar = N

          remainingName character (i) = N

      else

         remainingName character(i) = C

     end if

**else if thisChar  = H**

**if prevChar is not a vowel or nextChar is not a vowel**

**remainingName character (i) = prevChar**

**end if**

  else if thisChar = W

     if prevChar is a vowel

        remainingName character (i) = prevChar

     end if

  end if

end for

collapse any repeating characters in remainingName

if remainingName ends with S, remove the S

end if

if remainingName ends with AY, replace with Y

end if

if remainingName ends with A, remove the A

end if

return (remainingName)

End function

So the value to hash will be NYSIIS(first name) + “|” + NYSIIS(last name) + “|” + date of birth in MMDDYYYY format + “|” + sex in upper case.

The SHA-256 algorithm is more complex.  It is described at <http://en.wikipedia.org/wiki/SHA-2>  and javascript code can be found at <https://github.com/Caligatio/jsSHA/downloads>

Included in this zip file are two files with dummy data (formatted for our [standalone black box program](http://www.whainfocenter.com/wHAUniqueCaseIDGenerator.zip)).  whain.txt is the input file and whaout.txt is the expected output.  You should be able to use these to verify your results.

Addendum 11/29/2012: Please note the bolded text in the pseudocode. Previously the condition read:

if prevChar is not a vowel **and** nextChar is not a vowel

Also, “nextChar is not a vowel” in that statement requires clarification. The formula we use considers a blank to be neither a vowel nor a consonant. The result being that if H is the last letter of the name and the previous character is a vowel, the H is kept.

Addendum 9/4/2017: Below is a description of the formula for calculating the ECID.

**ECID Manual Methodology:**

***Character 1***

The first letter of the last name.

## ***Characters 2 – 4***

Characters 2, 3, and 4 are created by assigning numbers to each of the letters in the last name, according to the table below.

The three-digit code begins with the number assigned to the second letter.  A code is not used if it is identical to the previous number – this includes instances where the second position’s number is identical to the first position’s number, as in Example 1 below.  If the code for a letter is blank, then the letter is bypassed.  This process continues until a code number is produced which is different from the preceding number.  If this process does not produce three non-zero numbers, then the remaining positions are zero-filled, see Example 2 below.  It is possible for a person’s name to result in three zeroes.

## ***Character 5***

The first letter of the first name.

**Encrypted Case Identifier Characters**

                                       Letters in Last Name                                                  Number

cid:image004.png@01D2D0AE.56B512C0

|  |  |
| --- | --- |
| B, F, P, Q, V | 1 |
| C, G, J, K, S, X, Z | 2 |
| D, T | 3 |
| L | 4 |
| M, N | 5 |
| R | 6 |
| A, E, H, I, O, U, W, Y | blank |

**Examples:**

### Example 1

Mary Schwarzhoff

‘S’ is the first letter of the last name

‘chwarzhoff’ yields ‘621’ as the encrypted numbers

‘M’ is the first letter of the first name Result of encryption ‘S621M’

|  |  |  |
| --- | --- | --- |
| Last  Name | Number Assigned | Code Used |
| S | 2 (not used – start with 2nd number) |  |
| C | 2 (not used – repeat of previous number) |  |
| H | Blank |  |
| W | Blank |  |
| A | Blank |  |
| R | 6 | 6 |
| Z | 2 | 2 |
| H | Blank |  |
| O | Blank |  |
| F | 1 | 1 |
| F | Not used – three digit code completed |  |

### Example 2

John Ross

‘R’ is the first letter of the last name

‘oss’ yields ‘200’ as the encrypted numbers

‘J’ is the first letter of the first name Result of encryption ‘R200J’

|  |  |  |
| --- | --- | --- |
| Last  Name | Number Assigned | Code Used |
| R | 6 (not used – start with 2nd number) |  |
| O | Blank |  |
| S | 2 | 2 |
| S | 2 (not used – repeat of previous number) |  |

### Example 3

Imogene Sartori

‘S’ is the first letter of the last name

‘artori’ yields ‘636’ as the encrypted numbers

‘I’ is the first letter of the first name Result of encryption ‘S636I’

|  |  |  |
| --- | --- | --- |
| Last  Name | Number Assigned | Code Used |
| S | 2 (not used – start with 2nd number) |  |
| A | Blank |  |
| R | 6 | 6 |
| T | 3 | 3 |
| O | Blank |  |
| R | 6 | 6 |
| I | Blank |  |

### Example 4

Prudence Mortenson

‘M’ is the first letter of the last name

‘ortenson’ yields ‘635’ as the encrypted numbers

‘P’ is the first letter of the first name Result of encryption ‘M635P’

|  |  |  |
| --- | --- | --- |
| Last  Name | Number Assigned | Code Used |
| M | 5 (not used – start with 2nd number) |  |
| O | Blank |  |
| R | 6 | 6 |
| T | 3 | 3 |
| E | Blank |  |
| N | 5 | 5 |
| S | Not used – three-digit code completed |  |
| O | Not used – three-digit code completed |  |
| N | Not used – three-digit code completed |  |