NetGender Version 6.0

Name Parsing and Gender Identification API User's Guide

The Software Company, Inc.
https://SoftwareCompany.com

Software is our middle name

NetGender for .NET allows you to quickly and easily build name verification, parsing and gender determination into your custom applications. Accurately verify whether or not a particular field contains a valid individual or company name.

Accept names free-form and let NetGender automatically split each name into its standard components: Prefix, First, Middle, Last and Suffix no matter what the original format. Using a 200,000+ first and last name dictionary in combination with a 10,000+ term company dictionary, the gender is determined with unmatched precision. Easily updated tables control the entire process.

Also included in the dictionary are extensive name variants to help identify obscure duplicate names such as “Bill”, Billy”, Will”, “Willy”, “William”, “Wm”, etc.

NetGender for .NET can process all styles of names including inverse, natural order, hyphenated and multi-part last names. Multiple names in the same field and companies can be easily separated providing you with powerful formatting control.

Benefits

- **200,000+ First and Last Name Dictionary with Variants** – for pinpoint accuracy
- **Quickly Identify Incomplete or Incorrect Names** – before they enter your database
- **Automatic Name Style Identification** – standardize lists of various formats
- **Name Variants Property** - invaluable for finding common duplicates
- **Unlimited Processing Volume** – no recurring update charges

Features

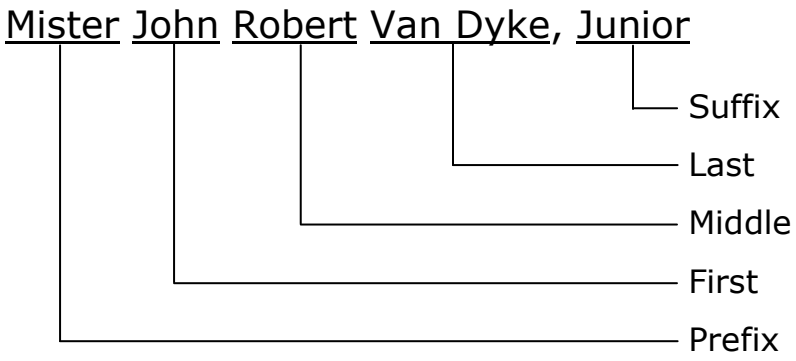
- Accurately separate name elements: Prefix, First, Middle, Last, Suffix
- Proper-case conversion for more attractive data presentation
- User-updatable tables so your applications never go out-of-date
- Royalty-free runtime
- Designed for use with all .NET-compatible programming languages

NetGender for .NET starts by meticulously identifying each individual name element based on the "Name_Style" selected. Intuitive algorithms examine the results then a selection is made of the most complete and correct data. Next, the name elements are split according to "Name_Style" and the user-specified prefix/suffix abbreviations are applied. If not already coded by the gender-override table, the gender is now determined according to the 200,000+ name system gender table. The "Name_Quality" flag is then set to indicate how complete and correct the name appears. Finally, the standardized name components are returned to your application along with a complete and cleansed composite name.

Examples using "AutoDetect" name style:

INPUT NAME:		**DE LA ROSA, JUAN R OR MARIA**
NAME 1:	Male	Juan R De La Rosa
NAME 2:	Female	Maria De La Rosa
INPUT NAME:		**LA BELLA, JOHN A & MARY B, PHD**
NAME 1:	Male	John A La Bella
NAME 2:	Female	Mary B La Bella PhD
INPUT NAME:		**MARY MYTH C/O THE SOFTWARE COMPANY**
NAME 1:	**Female**	**Mary Myth**
NAME 2:	**Company**	**The Software Company**
INPUT NAME:		**VAN ZANT, JUDY & RONNIE**
NAME 1:	Neutral	Judy Van Zant
NAME 2:	Male	Ronnie Van Zant
INPUT NAME:		**AFTON JONES & WIFE JOYA**
NAME 1:	Male	Afton Jones
NAME 2:	Female	Joya Jones

Name Elements



Gender Coding

NetGender uses an extensive dictionary of more than 200,000 first and last names that were specially selected for their rich ethnic-diversity.

NetGender also uses a unique gender percentage factor. This factor is based on the proportion of males to females for a particular name allowing you to set the point at which certain names will be returned with a neutral gender. *See "Gender_Confidence" and "Gender_Percentage" properties.*

NetGender then applies the rules from a 10,000+ term company dictionary resulting in a high level of gender accuracy.

Name_In

Syntax: Name_In = String

Description:
Set this property to the name string to be processed. When the "Parse" method is invoked, the "Name_In" string is standardized and formatted then placed into the "Name_Out" property. In addition, each element of the "Name_In" string is placed into the corresponding name component property.

Name_Style

Syntax: Name_Style = StringLiteral

Description:
Set this property to the style that most closely matches the format of the "Name_In" string. In the examples below, F = First, M = Middle, L = Last, & = generic delimiter, ( ) = optional element.

AutoDetect	Mixed Format or unknown	Names are mixed natural & inverse
FML	John A Doe	Names are in Natural Order
FML&FM	John A Doe & Jane A	Never a Last Name in Name 2
FML&FM(L)	John A Doe & Jane A (Jones)	Sometimes a Last Name in Name 2
FML&FML	John A Doe & Jane A Jones	Always a Last Name in Name 1 & 2
FM(L)&FML	John A (Doe) & Jane A Jones	Sometimes a Last Name in Name 1
FM(L)&FM(L)	John A (Doe) & Jane A (Jones)	Sometimes a Last Name in Name 1 or 2
FM&FML	John A & Jane A Doe	Never a Last Name in Name 1
LFM	Doe, John A	Names are in Inverse Order
LFM&FM	Doe, John A & Jane A	Never a Last Name in Name 2
LFM&FM(L)	Doe, John A & Jane A (Jones)	Sometimes a Last Name in Name 2
LFM&(L)FM	Doe, John A & (Jones)Jane A	Sometimes a Last Name in Name 2
LFM&LFM	Doe, John A & Jones Jane A	Always a Last Name in Name 1 & 2
Split	Anything & everything	Split at Name Connector only
Company	Sanford & Son	Forces a company name check without splitting at the name connector

The input names can be separated by various delimiters such as: "c/o", "&", "dba", "and", "attn", etc. The "&" above, generically represents these delimiters. The delimiters are user-defined. *See "Updating User Control Tables" later in this guide.* Parenthesis "( )" indicate that this element may or may not be present in all of the input name strings. If two individuals or a company and an individual co-exist in the input name string, you should choose one of the multi-name styles such as: "FML&FML", "FML&FM", etc. for best results.

Best results are obtained using the closest matching style. Use "AutoDetect" when the name format is inconsistent or unknown.

Name Style Examples - Natural Order

FML **Use when there is only one name in the input string.**
Name is split into First, Middle, Last:
Name_In: JOHN A DOE
Name_Out: John A Doe

FML&FM **Use when last name is *never* present in name two.**
Name two ALWAYS inherits its last name from Name one:
Name_In: JANE A DOE & JOHN A
Name_Out: Jane A Doe
Name2_Out: John A Doe

FML&FM(L) **Use when last name is *sometimes* present in name two.**
Name two keeps its own last name if present:
Name_In: JOHN A DOE & JANE A JONES
Name_Out: John A Doe
Name2_Out: Jane A Jones
Name two inherits its last name from Name one:
Name_In: JOHN A DOE & JANE A
Name_Out: John A Doe
Name2_Out: Jane A Doe

FML&FML **Use when a full name is *always* present in name one & two.**
Name one & two ALWAYS keep their own last names:
Name_In: JOHN DOE DBA THE SOFTWARE COMPANY
Name_Out: John Doe
Name2_Out: The Software Company

FM(L)&FML **Use when last name is *sometimes* present in name one.**
Name one keeps its own last name if present:
Name_In: JOHN A DOE & JANE A JONES
Name_Out: John A Doe
Name2_Out: Jane A Jones
Name one inherits its last name from Name two:
Name_In: JOHN A DOE & JANE A
Name_Out: John A Doe
Name2_Out: Jane A Doe

Name Style Examples - Natural Order (cont.)

FM(L)&FM(L) Use when last name is *sometimes* present in name one or two.

Name one and two keep their own last names if present:

Name_In: JOHN A DOE & JANE A JONES
Name_Out: John A Doe
Name2_Out: Jane A Jones

Name one inherits its last name from Name two:

Name_In: JOHN A & JANE A JONES
Name_Out: John A Jones
Name2_Out: Jane A Jones

FM&FML **Use when last name is *never* present in name one.**

Name one ALWAYS inherits its last name from Name two:

Name_In: JANE A & JOHN DOE
Name_Out: Jane A Doe
Name2_Out: John Doe

Name Style Examples - Inverse Order

LFM **Use when there is only one name in the input string.**
Name is split into First, Middle, Last:
Name_In: DOE, JOHN A
Name_Out: John A Doe

LFM&FM **Use when last name is *never* present in name two.**
Name two ALWAYS inherits its last name from Name one:
Name_In: DOE, JANE A & JOHN A
Name_Out: Jane A Doe
Name2_Out: John A Doe

LFM&FM(L) **Use when last name is *sometimes* present in name two.**
Name two keeps its own last name if present:
Name_In: DOE, JOHN A & JANE A JONES
Name_Out: John A Doe
Name2_Out: Jane A Jones
Name two inherits its last name from Name one:
Name_In: DOE, JOHN A & JANE A
Name_Out: John A Doe
Name2_Out: Jane A Doe

LFM&(L)FM **Use when last name is *sometimes* present in name two.**
Name two keeps its own last name if present:
Name_In: DOE, JOHN A & JONES, JANE A
Name_Out: John A Doe
Name2_Out: Jane A Jones
Name two inherits its last name from Name one:
Name_In: DOE, JOHN A & JANE A
Name_Out: John A Doe
Name2_Out: Jane A Doe

LFM&LFM **Use when a full name is *always* present in name one & two.**
Name one & two ALWAYS keep their own last names:
Name_In: DOE, JOHN DBA THE SOFTWARE COMPANY
Name_Out: John Doe
Name2_Out: The Software Company

Name Style Examples - Other

AutoDetect

Use when the format of the name(s) is inconsistent or unknown.

Style is automatically determined based on the format, punctuation and gender lookup results. Name one is FML, Name two is LFM:

Name_In: JOHN A DOE & JONES, JANE A
Name_Out: John A Doe
Name2_Out: Jane A Jones

Split

Use when you want to split name one & two at the first [NameConnector]

Filters are removed, no other formatting takes place.
[NameConnector] of "c/o" was specified in the "NetGender.ref" file:

Name_In: DOE JOHN A c/o THE SOFTWARE COMPANY
Name_Out: Doe John A
Name2_Out: The Software Company

Company

Use when company names also contain name connectors.

Use "COMPANY" style to avoid confusion with company names that also contain Name Connectors. When [NameConnectors] such as "&" are specified in the user-defined "NetGender.ref" file, certain company names such as "Dewey Cheatem & Howe" can sometimes be confused with a compound individual name such as "John & Mary Smith". If this is the case, use the "COMPANY" style first to identify the field as a company.

If an exact match on a company name is found in the "NetGender.ref" file or certain company keywords such as "ABC" are found in the system gender table, the Gender property is returned as "C" (company) and the "Name_Quality" property is returned as "High". A "Name_Quality" of "Medium" is returned when certain keywords such as "CLUB" are found in the system gender table indicating that this could possibly be either a company or individual.

Company_Check

Syntax: Company_Check = Boolean (True/False)

Description:
Set this property to Boolean (True/False) to indicate if an attempt should be made to identify the "Name_In" string as a company. Set "Company_Check" to "False" if your data has no company names. **Default is "False"**.

Name_Variant_Check

Syntax: Name_Variant_Check = Boolean (True/False)

Description:
Set this property to Boolean (True/False) to indicate if an attempt should be made to identify common name variants associated with "Name" and "Name2". Set "Name_Variant_Check" property to "True" if you want name variants returned in "Name_Variants" and "Name2_Variants" properties. **Default is "False"**.

Parse_Nicknames

Syntax: Parse_Nicknames = Boolean (True/False)

Description:
Set this property to Boolean (True/False) to indicate whether or not to parse nicknames from the "Name_In" property. A nickname is identified as being enclosed in single or double quotes or parenthesis. Set "Parse_Nicknames" to "True" if you want nicknames returned in "Nickname" and "Nickname2" properties. **Default is "False"**.

Gender_Confidence

Syntax: Gender_Confidence = Integer

Description:
Set this property to a value between 51% and 100% representing the cutoff point below which a gender is considered neutral. Each name in the System Gender Table is encoded with a percentage from 51% to 100% based on the proportion of males to females for that particular name. After the name lookup, if a percentage is found that is below the "Gender_Confidence" level, NetGender will return a gender of Neutral for that name. A setting of 51% will force a gender of either Male or Female. **Default is 70%**.

Neutral Gender Breakdown:

Gender_Confidence	# of Neutral	% of Gender Table	
100%	7,800	7.8%	
95%	6,400	6.4%	
90%	5,100	5.1%	
80%	3,900	3.9%	
70%	2,400	2.4%	Default Setting
60%	900	.9%	
51%	0	.0%	

Capitalization

Syntax: Capitalization = StringLiteral

Description:
Set this property to "Upper", "Lower", "Mixed" or "None" to indicate your capitalization preference for the output name and its components. Use "None" when you want to preserve the existing capitalization. **Default is "None".**

Reference_File_Path, Gender_File_Path

Syntax: Reference_File_Path = String
Gender_File_Path = String

Description:
Set this property to the full path and file name of the following system and user files:

"NetGender.ref" is a user-defined file containing the tables for Prefix, Suffix, Filter and Connector identification as well as Gender and Name Variant Overrides.

"NetGender.gnd" is a system file that contains the main Genderization control tables.

A standard set of these files is supplied and installed in the NetGender installation folder under the names: "NetGender.ref" and "NetGender.gnd". You can rename and relocate these files to any other folder as long as you provide the full path and file name information in each respective path string. **Default path is first the folder of the invoking application: "AppDomain.CurrentDomain.BaseDirectory" then the NetGender installation folder.**

See "Updating User Control Tables" later in this guide for information on customizing this file.

Static_Key_Name (licensed version)

Syntax: Static_Key_Name = String

Description:
Set this property to the name portion of the static key assignment or blank.

Static_Key (licensed version)

Syntax: Static_Key = String

Description:
Set this property to the key portion of the static key assignment or blank.

Name_Out, Name2_Out (read only)

Syntax: String = Name_Out
String = Name2_Out

Description:
After invoking the "Parse" method, this property will contain the corrected full name string, in natural order (FML), from the "Name_In" property.

Name_Quality, Name2_Quality (read only)

Syntax: String = Name_Quality
String = Name2_ Quality

Description:
After invoking the "Parse" method, this property is set to "Low", "Medium" or "High" to indicate how complete a name appears.

Prefix, Prefix2 (read only)

Syntax: String = Prefix
String = Prefix2

Description:
After invoking the "Parse" method, this property is set to the name "Prefix" component of "Name_In". Values will be valid prefixes (Mr, Mrs, etc.) or blank.

First, First2 (read only)

Syntax: String = First
String = First2

Description:
After invoking the "Parse" method, this property is set to the First Name component of "Name_In". Value will be an individual's first name or blank.

Middle, Middle2 (read only)

Syntax: String = Middle
String = Middle 2

Description:
After invoking the "Parse" method, this property is set to the Middle Name component of "Name_In". Value will be an individual's middle name or blank.

Last, Last2 (read only)

Syntax: String = Last
String = Last2

Description:
After invoking the "Parse" method, this property is set to the Last Name component of "Name_In". Value will be an individual's last name or blank.

Suffix, Suffix2 (read only)

Syntax: String = Suffix
String = Suffix2

Description:
After invoking the "Parse" method, this property is set to the Suffix component of "Name_In". Values will be valid suffixes (Jr, Sr, Esq, etc.) or blank.

Company, Company2 (read only)

Syntax: String = Company
String = Company2

Description:
After invoking the "Parse" method, this property is set to the Company component of "Name_In". Values will be a company name or blank.

Gender, Gender2 (read only)

Syntax: String = Gender
String = Gender2

Description:
After invoking the "Parse" method, this property is set to the Gender indicated by the "First" property. Values will be "M" (male), "F" (female), "N" (neutral), "C" (company) or "U" (unknown). *See "Gender_Confidence" property.*

Gender_Percentage, Gender2_Percentage (read only)

Syntax: Integer = Gender_Percentage
Integer = Gender2_Percentage

Description:
After invoking the "Parse" method, this property is set to the statistical gender percentage. Each name in the System Gender Table is encoded with a percentage from 51% to 100% based on the proportion of males to females for that particular name. For example, the name "Chris" returns a gender of "M" and a "Gender_Percentage" of 89%. This indicates that 89% of the persons with the name "Chris" are statistically male and 11% are female. *See "Gender_Confidence" and "Gender" properties.*

Note: This property is only valid when the Gender property returns a value of "M" or "F".

Name_Variants, Name2_Variants (read only)

Syntax:
```
StringArray[,] = Name_Variants
        VariantName = Name_Variants[i,0]
        VariantGender =  Name_Variants[i,1]
StringArray = Name2_Variants
        VariantName2 = Name2_Variants[i,0]
        VariantGender2 = Name2_Variants[i,1]
```

Description:
After invoking the "Parse" method, this property is set to a list of common name variants associated with the names returned in "First" and "First2". Values will be a list of one or more common name variants.

Note: Name variants are only returned when "Name_Variant_Check" property is set to "True".

Name_Filtered_Data (read only)

Syntax: String = Name_Filtered_Data

Description:
After invoking the "Parse" method, this property will contain all data that was filtered out before processing according to the [NameFilter] section of "NetGender.ref" file.
See "Updating User Control Tables" later in this guide for information on customizing this file.

Return_Code (read only)

Syntax: String = Return_Code

Description:
After invoking the "Parse" method, this property is set to blank upon successful completion. Most exceptions occur on the first invocation. *This property should be examined on each return from NetGender.*

Common Return Codes:

G00	Gender file wrong version
G30	Gender file open/read error
G35	Gender file not found *(see "Gender_File_Path" property)*
R30	Reference file open/read error
R35	Reference file not found *(see "Reference_File_Path" property)*
S00	Unrecognized name style *(see "Name_Style" property)*
T00	Prefix/Suffix Table Limit Reached (1,024)
T01	Name Variant Override Table Limit Reached (256)
T02	Gender Override Table Limit Reached (1,024)
T03	Spelling Override Table Limit Reached (1,024)
L00	Evaluation period expired
L01	Static key validation failed *(see "Static_Key" property)*
L50	Evaluation license error

Clear

Syntax: NetGender.Clear

Description:
When this method is invoked, all properties are cleared with the exception of "Static_Key", "Static_Key_Name" and "Reference_File_Path".

Parse

Syntax: NetGender.Parse

Description:
When this method is invoked, each element of the "Name_In" property will be inspected. Multiple names are separated, each name is gender coded and placed into the "Name_Out" property. Each individual element of the "Name_In" property will be placed into the appropriate name component property. And, if the "Name_Variant_Check" property is set to "True", a list of common name variants is returned in "Name_Variants" and "Name2_Variants". The "Return_Code" property is also set and should be checked after each invocation of the Parse method. *See "Return_Code" property.*

Updating User Control Tables

"NetGender.ref" is a file containing the name standardization control tables. It is located by default in the "NetGender" installation folder. Use Notepad or a similar text editor to edit the contents. Detailed information on the format of the entries is contained within the file. This file can also be relocated. *See "Reference_File_Path" property*.

NetGender allows you to specify which Prefixes and Suffixes are to be recognized as well as your preferred abbreviations.

Extensive tables are included. Below are a few examples:

[NamePrefix]
M&M Mr & Mrs
M/M Mr & Mrs

[NameSuffix]
PHD Ph.D.
MANAGER Mgr

[NameConnector]
&
C/O
GUARDIAN OF

[NameFilter]
ETAL
TRUST

[CompanyOverride]
C TED'S SHEDS
U BAYOU

[GenderOverride]
M BILLY-JOE
F BO PEEP
L EXOTIC

[NameVariantOverride]
WOODY = WOODIE,WOODROW,WOODFORD

[SpellingOverride]
diGenova
The UPS Store

Deploying Your Applications

Be sure to include the following in your deployment package:

NetGender.dll
NetGender.ref
NetGender.gnd
Fujitsu.COBOL.dll
Fujitsu.COBOL.Runtime.RCBManager.dll

"NetGender.ref" (reference file) and "NetGender.gnd" (system gender file) can be placed anywhere on the target machine as long as the full path is specified in the "Reference_File_Path" and "Gender_File_Path" properties.

Evaluation License

The evaluation license is valid for a period of 7 days or up to 1,000 calls.

Sales@SoftwareCompany.com
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