PeacockData

WHAT IS FUZZY LOGIC?

Both **pdNickname 2.x** and **pdGender 2.x** are fully compatible with fuzzy logic. In these products, fuzzy logic involves slight variations in first names and nicknames based on common typographical errors and stylized spelling methods. The **Pro** edition of these packages comes equipped with fuzzy logic out of the box. Fuzzy logic add-ons can be appended to both the **Pro** and **Standard** versions.

The following illustrates the fuzzy logic technology employed in *pdNickname 2.x* and *pdGender 2.x*. Further information specific for these packages can be found in the product user documentation.

TYPOGRAPHICAL ERRORS

Typographical error fuzzy logic algorithms look at frequently reversed digraphs (a pair of letters used to make one phoneme or distinct sound), double letters that are often typed as single letters, single letters that are most regularly doubled, and other common data entry issues. The most likely typographical errors are determined based on the number of letters, the characters involved, where they are located in the name, and other factors.

The following are examples of fuzzy logic based on common typographical errors:

	REAL NAME	FUZZY NAME	NOTES
Example 1	AL	ALL	the “L” is repeated
Example 2	ROCCO	ROCO	the second “C” is left out
Example 3	SOPHIA	SOHPIA	the “PH” digraph is reversed
Example 4	MARGARET	MARGRAET	the second “AR” digraph is reversed

STYLIZED SPELLINGS

Stylized spelling fuzzy logic algorithms look at non-regular characters such as extended ANSI characters (ASCII values 128 to 255) as well as hyphens, apostrophes, and spaces.

A few of the possible extended characters are “Á” (A-acute), “Ö” (O-umlaut), and “Ñ” (N-tilde). In these cases, “Á” becomes “A” (A-regular), “Ö” becomes “O” (O-regular), “Ñ” becomes “N” (N-regular), and other extended characters are treated similarly.

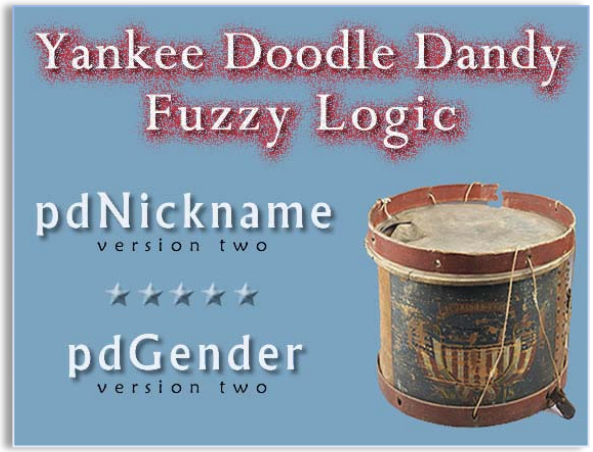
The following are examples of fuzzy logic based on stylized spellings:

	REAL NAME	FUZZY NAME	NOTES
Example 5	BJÖRK	BJORK	spelled with O-regular instead of O-umlaut
Example 6	NICOLÁS	NICOLAS	spelled with A-regular instead of A-acute
Example 7	'ASHTORET	ASHTORET	spelled without an apostrophe prefix
Example 8	ABD-AL-HAMID	ABDALHAMID	spelled without hyphens delimiting the name parts
Example 9	JUAN MARÍA	JUANMARIA	spelled without the space between the two parts and with I-regular instead of I-acute

MORE ABOUT FUZZY LOGIC (INTERVIEW)

Barbara Adair from Peacock Data sat down for an interview to discuss the fuzzy logic technology integrated in their new *pdNickname 2.0 Pro* and *pdGender 2.0 Pro* products. She is the company's chief development coordinator and has been with the firm since 2012.

pdNickname is an advanced name and nickname database. *pdGender* is a gender coding file built on the same set of names. The *Pro* edition of these products for the first time provide fuzzy logic allowing users to match information against their lists even when there are typographical errors or stylized spellings.



According to Barbara, "Previous products, such as our pdGeoTIGER geo-coder, included fuzzy logic, but our newest technology is the most highly developed to date."

"There are two kinds of fuzzy logic incorporated," she said. "One is designed to pick up common typographical errors and the other works with stylized spellings and letters not on a regular English keyboard."

Barbara pointed out, "**The most complex fuzzy logic involves predicting likely misspellings or alterations. We look at numerous factors that may occur in the spelling of a name. Common examples are frequently reversed digraphs (a pair of letters used to make one phoneme or distinct sound), double letters that are often typed as single letters, non-common characters, the number of letters in a name, where elements occur in a name, and hundreds of other possible factors**."

"**A lot of research and field trials have gone into creating the fuzzy logic algorithms and their inclusion in our new products will substantially increase their power for users**," she added.

Barbara illustrated several examples from the actual databases used in the products. The first was "Sophia" which has the digraph "ph" in the center. One of the most common typos is "Sohpia" with the digraph reversed as "hp". The new databases pick up both spellings. Another example is "Rocco" typed as "Roco" with one "c".

Not all the examples involve typographical errors. Some concern stylized spellings and special letters such as the umlaut in the middle of "Björk". In this case the products will find the name with the umlaut as well as typed "Bjork" without the special character.

"**The difference between a real name and a fuzzy version can be very slight and even difficult to notice at first glance**," Barbara said. "**But they are different and can make a big difference in the success rate for businesses and organizations working with lists of names**."

Barbara notes, "A sizable majority of the *Pro* edition of both new products are built with fuzzy logic, but users not ready to dive into the new technology can purchase a *Standard* edition without fuzzy logic and easily add it later when they are ready by contacting the company for an upgrade."

"The new fuzzy logic technology will also be integrated in other products already in our line as well as in new products currently in development," Barbara concluded. "It is very exciting for us and our end users."

FUZZY LOGIC ADD-ON PACKS AND UPGRADES

Peacock Data releases additional fuzzy logic records nearly every month for *pdNickname 2.x* and pdGender 2.x in the form of add-on packs which can easily and economically be appended to the main databases extending coverage of typographical errors and stylized spelling methods.

Add-on packs include new algorithms and randomizers developed since the original release of the products as well as tweaks to the original algorithms influenced by user experience and our own field testing. The add-on packs are fully compatible with both the *Pro* and *Standard* editions of these packages.

Those licensing the *Standard* edition of either product can also purchase a *Standard to Pro Upgrade Pack* which includes all the fuzzy logic records from the *Pro* edition. Once a *Standard* version is upgraded, it will be the same as the *Pro* edition.

Review the documentation provided with the fuzzy logic add-on packs and upgrades for further instructions.

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