Name: _

Name: Miroslav ediv

Name: Miroslav ?edivý

Name: Miroslav ediv

Name: Miroslav ■edivý

Name: Miroslav ⌐ediv²

Name: Miroslav ©edivý

Name: Miroslav Šedivý

_

Name: Miroslav Šedivý

Your Name Is Invalid!

Miroslav Šedivý

[ˈmɪrɔslaʊ ˈʃɛɟɪviː]

Miroslav □□cSediv□□'y

Miroslav Šedivý

[ˈmɪrɔslav ˈʃɛɟɪviː]

Miroslav □cSediv□'y

soluteTech

Your Name Is Invalid!

Your Name Is Invalid!

- Names in Python
  - strings/bytes
  - encoding
  - normalizing
  - case folding
  - sorting
  - regular expressions

Your Name Is Invalid!

- Names in Python
  - strings/bytes
  - encoding
  - normalizing
  - case folding
  - sorting
  - regular expressions
- Names on the web
  - prefix/first/middle/last/suffix names
  - allowed characters

strings/bytes in Python 3

- **str** — 1M+ code points: working memory
- **bytes** — 256 bytes: file/network

strings/bytes in Python 3

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- **bytes** — 256 bytes: file/network

```
>>> "Chuck Norris".encode() == b"Chuck Norris"

>>> "Chuck Norris"          == b"Chuck Norris".decode()
```

strings/bytes in Python 3

- **str** — 1M+ code points: working memory
- **bytes** — 256 bytes: file/network

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>>> "Chuck Norris".encode() == b"Chuck Norris"

>>> "Chuck Norris"          == b"Chuck Norris".decode()
```

```
>>> "Chuck Norris".encode() == b"Chuck Norris"
     123456789012                 123456789012
```

strings/bytes in Python 3

- **str** — 1M+ code points: working memory
- **bytes** — 256 bytes: file/network

```
>>> "Chuck Norris".encode() == b"Chuck Norris"

>>> "Chuck Norris"          == b"Chuck Norris".decode()
```

```
>>> "Chuck Norris".encode() == b"Chuck Norris"
     123456789012                 123456789012
```

```
>>> "Müller".encode()       == b"M\xc3\xbcller"
     123456                       12   3   4567
```

strings/bytes in Python 3

- **str** — 1M+ code points: working memory
- **bytes** — 256 bytes: file/network

```
>>> "Chuck Norris".encode() == b"Chuck Norris"

>>> "Chuck Norris"          == b"Chuck Norris".decode()
```

```
>>> "Chuck Norris".encode() == b"Chuck Norris"
     123456789012                 123456789012
```

```
>>> "Müller".encode()       == b"M\xc3\xbcller"
     123456                       12   3   4567
```

```
>>> "你好".encode()         == b"\xe4\xbd\xa0\xe5\xa5\xbd"
     1 2                          1   2   3   4   5   6
```

```
>>> "Chuck Norris".encode("ascii") == b"Chuck Norris"
     123456789012                        123456789012
```

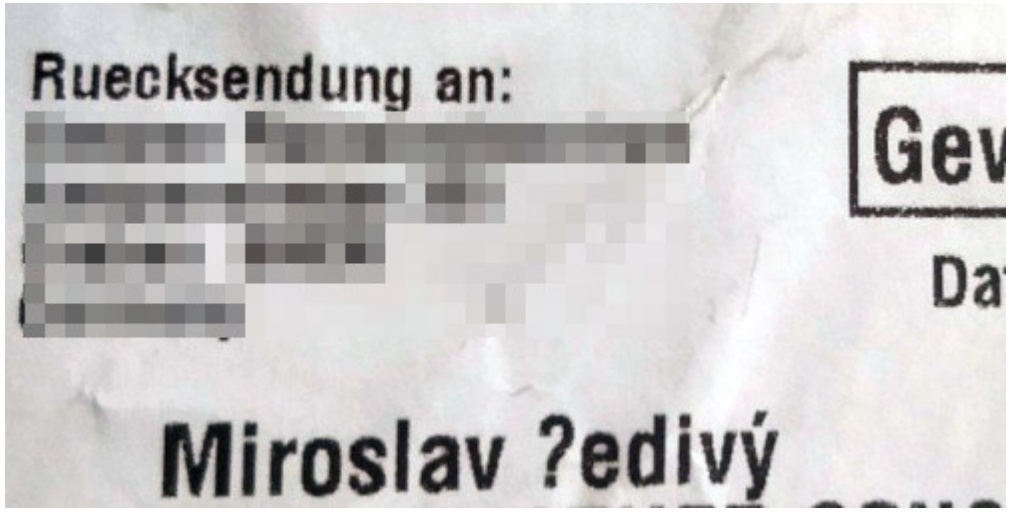
```
>>> "Chuck Norris".encode("ascii") == b"Chuck Norris"
     123456789012                        123456789012
```

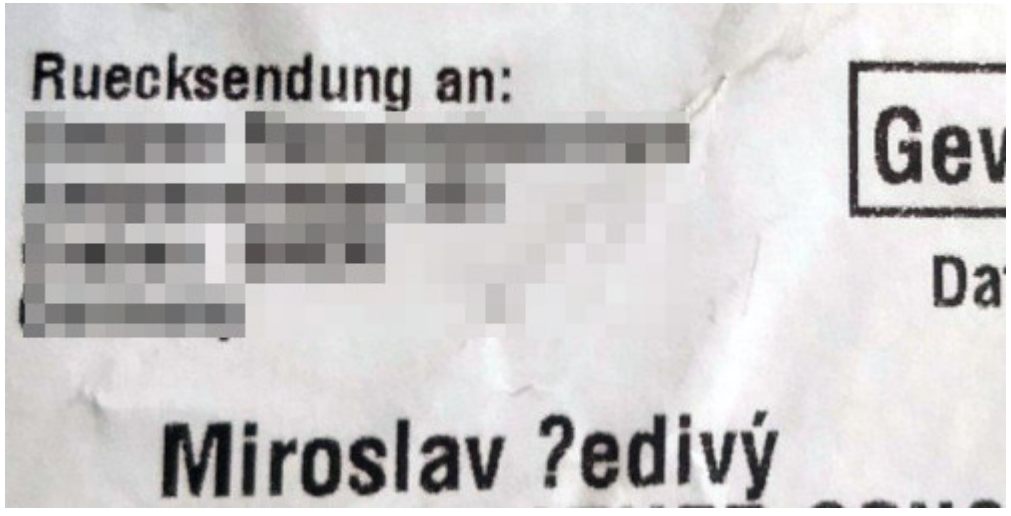
```
>>> "Müller".encode("latin1")      == b"M\xfcller"
     123456                              12   3456
```

```
>>> "Chuck Norris".encode("ascii") == b"Chuck Norris"
     123456789012                       123456789012
```

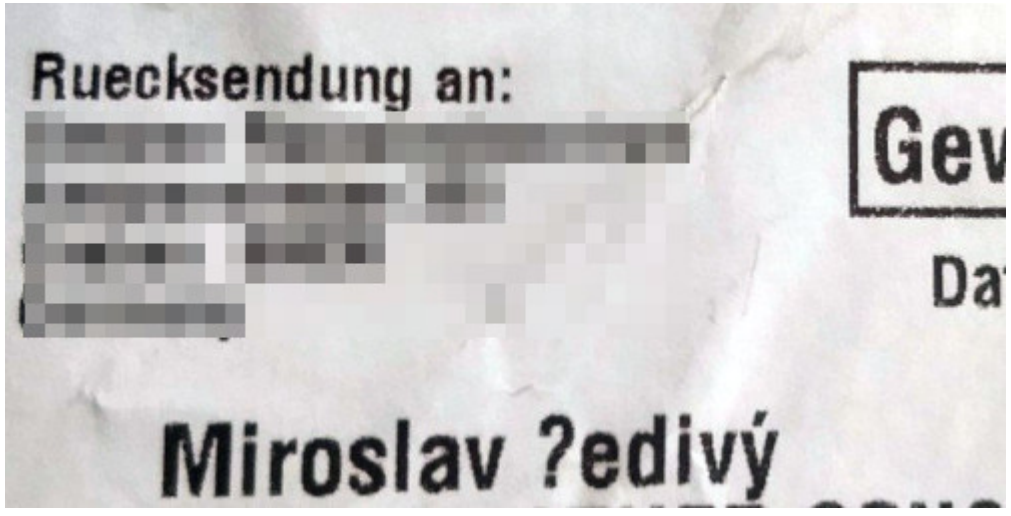
```
>>> "Müller".encode("latin1")      == b"M\xfcller"
     123456                             12   3456
```

```
>>> "Šedivý".encode("latin2")      == b"\xa9ediv\xfd"
     123456                             1   23456
```


Ruecksendung an:
Miroslav ?edivý

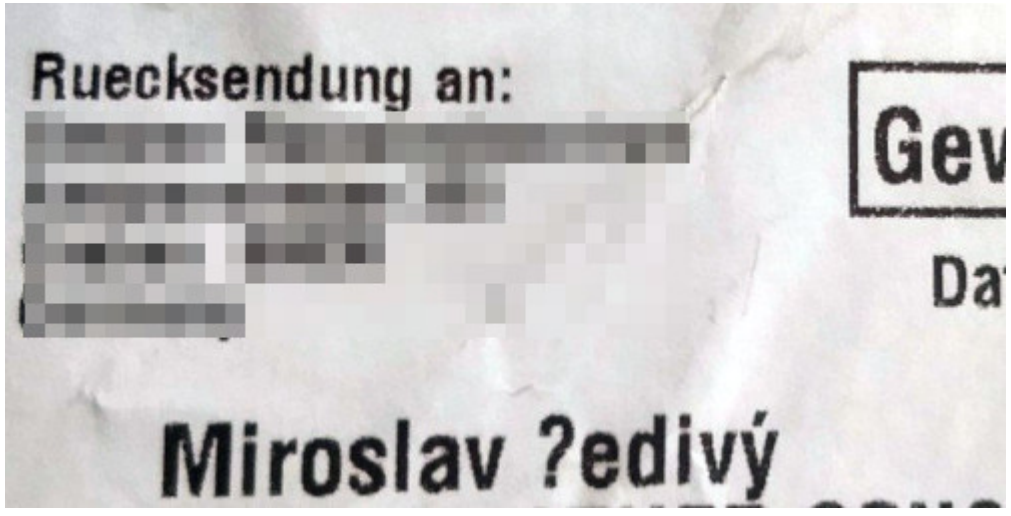



```
>>> "Šedivý".encode("latin2")                    == b"\xa9ediv\xfd"
     123456                                          1   23456
```




```
>>> "Šedivý".encode("latin2")                    == b"\xa9ediv\xfd"
     123456                                          1   23456
```

```
>>> "Šedivý".encode("latin1")
UnicodeEncodeError: 'latin-1' codec can't encode character '\u0160' in position 0: ordinal not in range(256)
```



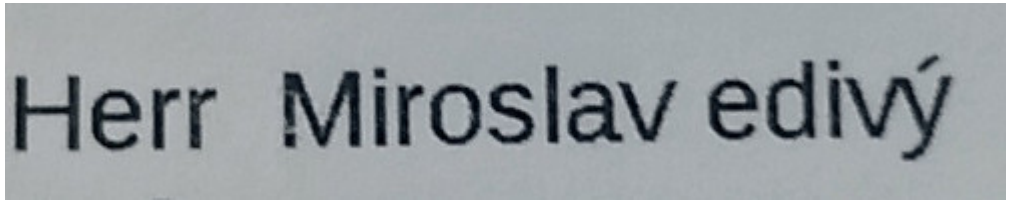

```
>>> "Šedivý".encode("latin2")                    == b"\xa9ediv\xfd"
     123456                                          1   23456
```

```
>>> "Šedivý".encode("latin1")
UnicodeEncodeError: 'latin-1' codec can't encode character '\u0160' in position 0: ordinal not in range(256)
```

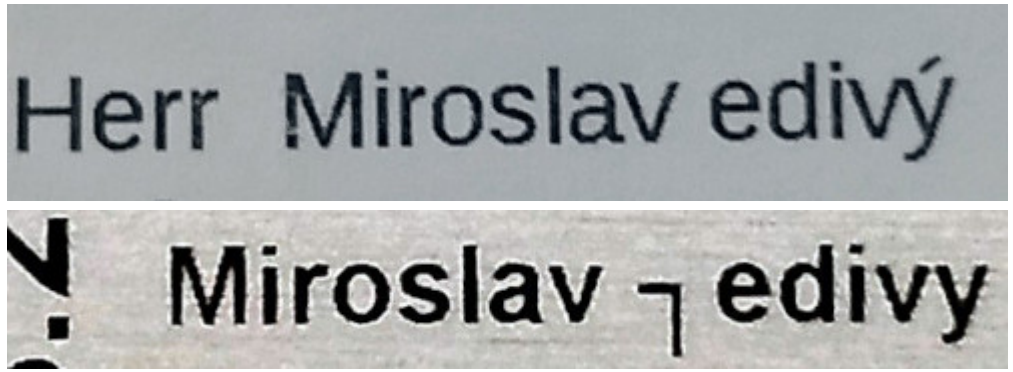
```
>>> "Šedivý".encode("latin1", errors="replace") == b"?ediv\xfd"
     123456                                          123456
```

```
>>> codecs.register_error("replace_randomly", lambda exc: (random.choice("1234567890"), exc.start + 1))
>>> "Šedivý".encode('latin1', errors='replace_randomly')
b'5ediv\xfd'
```

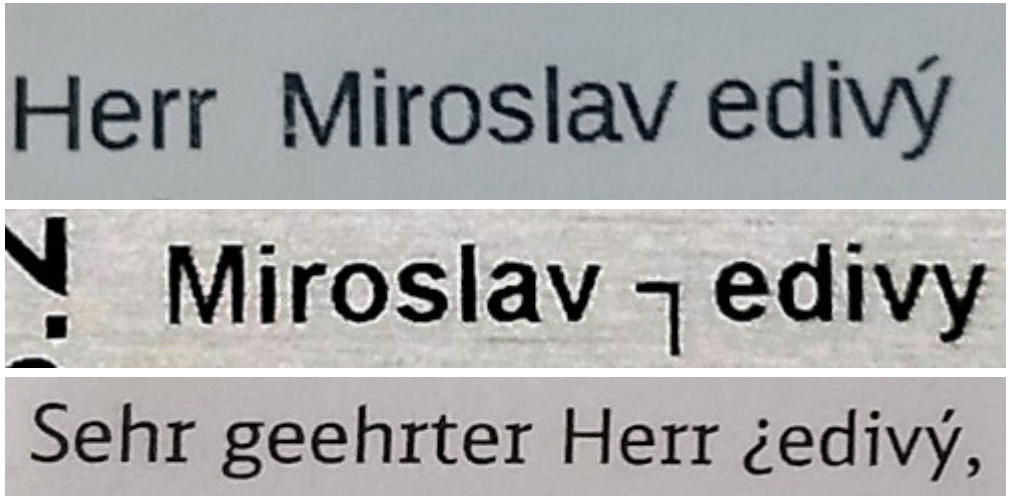
```
>>> codecs.register_error("replace_randomly", lambda exc: (random.choice("1234567890"), exc.start + 1))
>>> "Šedivý".encode('latin1', errors='replace_randomly')
b'5ediv\xfd'
```

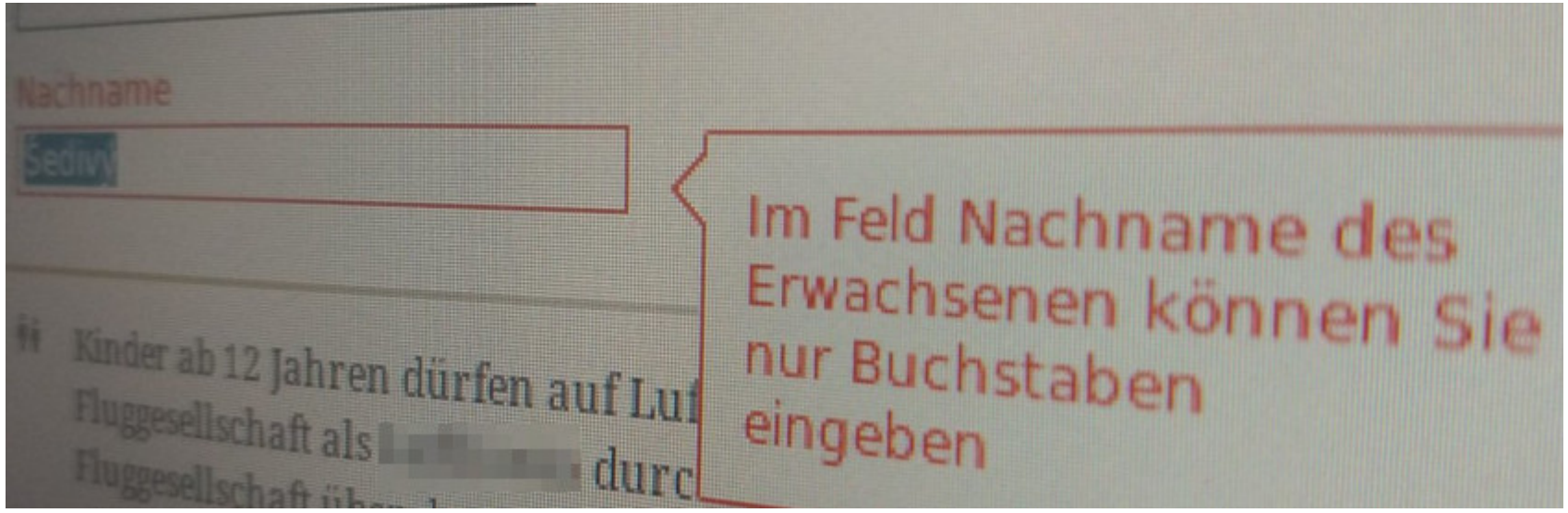


```
>>> codecs.register_error("replace_randomly", lambda exc: (random.choice("1234567890"), exc.start + 1))
>>> "Šedivý".encode('latin1', errors='replace_randomly')
b'5ediv\xfd'
```



```
>>> codecs.register_error("replace_randomly", lambda exc: (random.choice("1234567890"), exc.start + 1))
>>> "Šedivý".encode('latin1', errors='replace_randomly')
b'5ediv\xfd'
```





“You can only enter letters in the «Adult's Last Name» field.”

What is a “letter”?

```
šedivý = "Šedivý"
```

What is a “letter”?

```
šedivý = "Šedivý"
```

```
import unicodedata

for char in "aAäÄßßšŠ .☺":
    print(char,
          unicodedata.category(char),
          unicodedata.name(char))
```

What is a “letter”?

```
šedivý = "Šedivý"
```

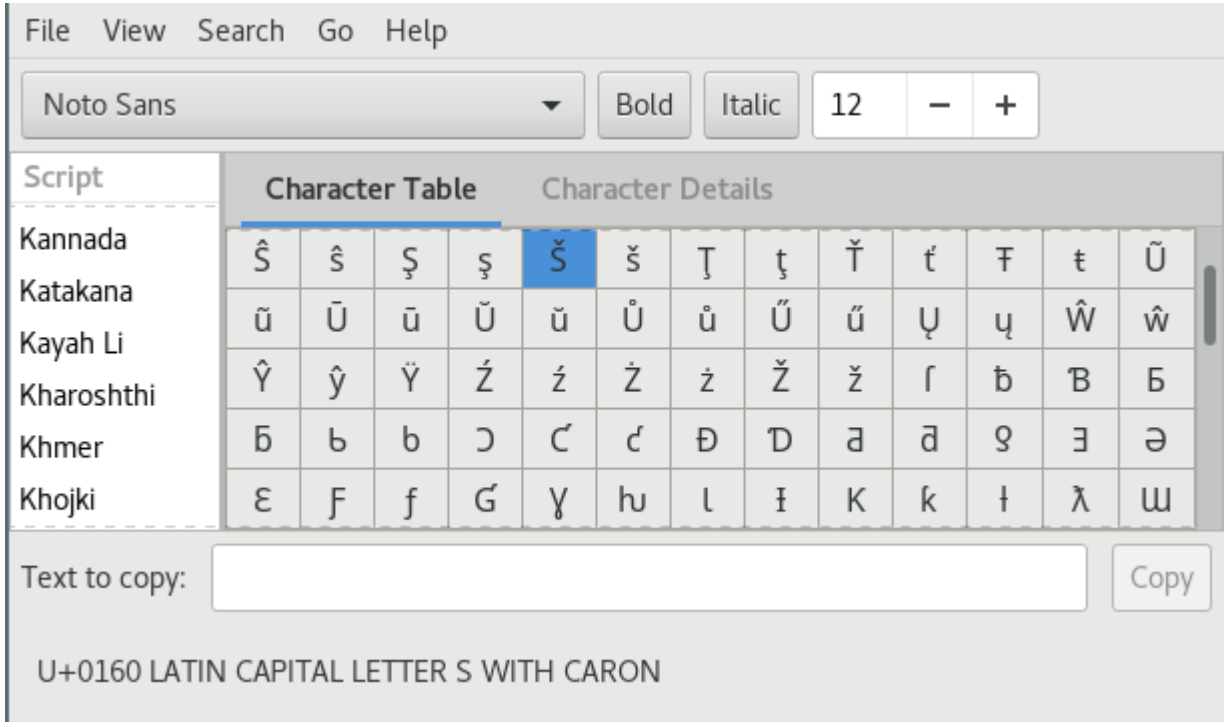
```
import unicodedata

for char in "aAäÄßßšŠ .☺":
    print(char,
          unicodedata.category(char),
          unicodedata.name(char))
```

```
a Ll LATIN SMALL LETTER A
A Lu LATIN CAPITAL LETTER A
ä Ll LATIN SMALL LETTER A WITH DIAERESIS
Ä Lu LATIN CAPITAL LETTER A WITH DIAERESIS
ß Ll LATIN SMALL LETTER SHARP S
ẞ Lu LATIN CAPITAL LETTER SHARP S
š Ll LATIN SMALL LETTER S WITH CARON
Š Lu LATIN CAPITAL LETTER S WITH CARON
  Zs SPACE
. Po FULL STOP
☺ So WHITE SMILING FACE
```

```
Cc   Control
Cf   Format
Co   Private Use
Cs   Surrrogate
Ll   Lowercase Letter
Lm   Modifier Letter
Lo   Other Letter
Lt   Titlecase Letter
Lu   Uppercase Letter
Mc   Spacing Mark
Me   Enclosing Mark
Mn   Nonspacing Mark
Nd   Decimal Number
Nl   Letter Number
No   Other Number
Pc   Connector Punctuation
Pd   Dash Punctuation
Pe   Close Punctuation
Pf   Final Punctuation
Pi   Initial Punctuation
Po   Other Punctuation
Ps   Open Punctuation
Sc   Currency Symbol
Sk   Modifier Symbol
Sm   Math Symbol
So   Other Symbol
Zl   Line
Zp   Paragraph
Zs   Space Separator
```

Character maps



Case folding

```
"a ä š".upper() == "A Ä Š"
"a ä š"         == "A Ä Š".lower()
```

Case folding

```
"a ä š".upper() == "A Ä Š"
"a ä š"         == "A Ä Š".lower()
```

```
"ß".upper()     == "SS"
```

Case folding

```
"a ä š".upper() == "A Ä Š"
"a ä š"         == "A Ä Š".lower()
```

```
"ß".upper()     == "SS"
```

```
"ß"             == "ẞ".lower()
```

Case folding

```
"a ä š".upper() == "A Ä Š"
"a ä š"         == "A Ä Š".lower()
```

```
"ß".upper()     == "SS"
```

```
"ß"             == "ẞ".lower()
```

```
"i".upper()     == "I"
```

Case folding

```
"a ä š".upper() == "A Ä Š"
"a ä š"         == "A Ä Š".lower()
```

```
"ß".upper()     == "SS"
```

```
"ß"             == "ẞ".lower()
```

```
"i".upper()     == "I"
```

i → İ, ı → I

Case folding

```
"a ä š".upper() == "A Ä Š"
"a ä š"         == "A Ä Š".lower()
```

```
"ß".upper()     == "SS"
```

```
"ß"             == "ẞ".lower()
```

```
"i".upper()     == "I"
```

i → İ, ı → I

```
>>> import icu  # International Components for Unicode
>>> tr = icu.Locale('tr')
>>> str(icu.UnicodeString('i').toUpper(tr))
'İ'
```

Normalize

```
>>> word1 = 'Süß'
>>> word2 = unicodedata.normalize('NFD', word)
```

Normalize

```
>>> word1 = 'Süß'
>>> word2 = unicodedata.normalize('NFD', word)
```

```
word1:
  0  S   83  Lu  LATIN CAPITAL LETTER S
  1  ü  252  Ll  LATIN SMALL LETTER U WITH DIAERESIS
  2  ß  223  Ll  LATIN SMALL LETTER SHARP S

word2:
  0  S    83  Lu  LATIN CAPITAL LETTER S
  1  u   117  Ll  LATIN SMALL LETTER U
  2  ¨   776  Mn  COMBINING DIAERESIS
  3  ß   223  Ll  LATIN SMALL LETTER SHARP S
```

21 Answers

oldest newest **votes**

1811

You can't parse [X]HTML with regex. Because HTML can't be parsed by regex. Regex is not a tool that can be used to correctly parse HTML. As I have answered in HTML-and-regex questions here so many times before, the use of regex will not allow you to consume HTML. Regular expressions are a tool that is insufficiently sophisticated to understand the constructs employed by HTML. HTML is not a regular language and hence cannot be parsed by regular expressions. Regex queries are not equipped to break down HTML into its meaningful parts. so many times but it is not getting to me. Even enhanced irregular regular expressions as used by Perl are not up to the task of parsing HTML. You will never make me crack. HTML is a language of sufficient complexity that it cannot be parsed by regular expressions. Even Jon Skeet cannot parse HTML using regular expressions. Every time you attempt to parse HTML with regular expressions, the unholy child weeps the blood of virgins, and Russian hackers pwn your webapp. Parsing HTML with regex summons tainted souls into the realm of the living. HTML and regex go together like love, marriage, and ritual infanticide. The cannot hold it is too late. The force of regex and HTML together in the same conceptual space will destroy your mind like so much watery putty. If you parse HTML with regex you are giving in to Them and their blasphemous ways which doom us all to inhuman toil for the One whose Name cannot be expressed in the Basic Multilingual Plane, he comes. HTML-plus-regexp will liquify the nerves of the sentient whilst you observe, your psyche withering in the onslaught of horror. Regex-based HTML parsers are the cancer that is killing StackOverflow *it is too late it is too late we cannot be saved* the trangession of a child ensures regex will consume all living tissue (except for HTML which it cannot, as previously prophesied) *dear lord help us how can anyone survive this scourge* using regex to parse HTML has doomed humanity to an eternity of dread torture and security holes *using regex* as a tool to process HTML establishes a breach *between this world* and the dread realm of corrupt entities (like SGML entities, but *more corrupt) a mere glimpse* of the world of reg **ex parsers for HTML will ins**tantly transport a *programmer's consciousness* into a world of ceaseless screaming, he comes~~, the pestilent sli~~thy regex-infection will **devour your HT**ML parser, application and existence for all time like Visual Basic only worse *he comes he comes do not fight* h**e comes, his** unholy radiance *destroying all enlightenment, HTML tags* ***leaking from your eyes like liq****uid pain*, the song of regular expr~~ession parsing~~ will ext*inguish the voices of mor****tal man from the sp****here I can see it can you see it it is beautiful* the f`inal snuf` fing *of the lie****s of Man ALL IS LOST ALL IS L***OST the *pony he com*~~es~~ he co~~mes he~~i~~comes the ich***or permeates *all* MY FACE MY FACE *oh god n****o NO NOOOO N***Θ stop t*he an*~~gles~~ `are` **not real ZALGO IS TONY THE PONY HE COMES**

Have you tried using an XML parser instead?

link | edit | flag edited Nov 14 at 0:18 community wiki

Sorting (“alphabetic”)

```
>>> ''.join(sorted('aAoOuUäÄöÖüÜßẞšŠ'))
'AOUaouÄÖÜßäöüŠšẞ'
```

Sorting (“alphabetic”)

```
>>> ''.join(sorted('aAoOuUäÄöÖüÜßβšŠ'))
'AOUaouÄÖÜßäöüŠšß'
```

```
>>> import locale

>>> locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAäÄbB'
```

Sorting (“alphabetic”)

```
>>> ''.join(sorted('aAoOuUäÄöÖüÜßβšŠ'))
'AOUaouÄÖÜßäöüŠšβ'
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```
>>> import locale

>>> locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAäÄbB'
```

```
>>> locale.setlocale(locale.LC_ALL, 'sv_SE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAbBäÄ'
```

Sorting (“alphabetic”)

```
>>> ''.join(sorted('aAoOuUäÄöÖüÜßβšŠ'))
'AOUaouÄÖÜßäöüŠšβ'
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>>> import locale

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>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAäÄbB'
```

```
>>> locale.setlocale(locale.LC_ALL, 'sv_SE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAbBäÄ'
```

- Hungarian: `cékla, cvikli, csípős`

Sorting (“alphabetic”)

```
>>> ''.join(sorted('aAoOuUäÄöÖüÜßβšŠ'))
'AOUaouÄÖÜßäöüŠšβ'
```

```
>>> import locale

>>> locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAäÄbB'
```

```
>>> locale.setlocale(locale.LC_ALL, 'sv_SE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAbBäÄ'
```

- Hungarian: `cékla, cvikli, csípős`
- Czech & Slovak: `c, č, d, …, h, ch, i, …, s, š, t`

Sorting (“alphabetic”)

```
>>> ''.join(sorted('aAoOuUäÄöÖüÜßβšŠ'))
'AOUaouÄÖÜßäöüŠšβ'
```

```
>>> import locale

>>> locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAäÄbB'
```

```
>>> locale.setlocale(locale.LC_ALL, 'sv_SE.UTF-8')
>>> ''.join(sorted('abABäÄ', key=locale.strxfrm))
'aAbBäÄ'
```

- Hungarian: `cékla, cvikli, csípős`
- Czech & Slovak: `c, č, d, …, h, ch, i, …, s, š, t`
- French: `cote, côte, coté, côté`

Locale is connected to the process ☹

```
import locale

locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
sorted(words, key=locale.strxfrm))
```

Locale is connected to the process ☹

```
import locale

locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
sorted(words, key=locale.strxfrm))
```

```
import icu

collator = icu.Collator.createInstance(icu.Locale('de_DE.UTF-8'))
sorted(words, key=collator.getSortKey)
```

Locale is connected to the process ☹

```
import locale

locale.setlocale(locale.LC_ALL, 'de_DE.UTF-8')
sorted(words, key=locale.strxfrm))
```

```
import icu

collator = icu.Collator.createInstance(icu.Locale('de_DE.UTF-8'))
sorted(words, key=collator.getSortKey)
```

```
import pyuca

collator = pyuca.Collator()
sorted(words, key=collator.sort_key)
```

Unicode regular expressions

```
>>> text = 'München 123'
```

Unicode regular expressions

```
>>> text = 'München 123'
```

```
>>> import re
>>> re.findall(r'[a-zA-Z]+', text)

['M', 'nchen']
```

Unicode regular expressions

```
>>> text = 'München 123'
```

```
>>> import re
>>> re.findall(r'[a-zA-Z]+', text)

['M', 'nchen']
```

```
>>> re.findall(r'\w+', text)

['München', '123']
```

Unicode regular expressions

```
>>> text = 'München 123'
```

```
>>> import re
>>> re.findall(r'[a-zA-Z]+', text)

['M', 'nchen']
```

```
>>> re.findall(r'\w+', text)

['München', '123']
```

```
>>> import regex
>>> regex.findall(r'\p{L}+', text)

['München']
```

I came for Python, stayed for the names

I came for Python, stayed for the names

```
First name:         _
Last name:          _
```

I came for Python, stayed for the names

```
First name:         _
Last name:          _

First name:         _
Middle name:        _
Last name:          _
```

I came for Python, stayed for the names

```
First name:          _
Last name:           _

First name:          _
Middle name:         _
Last name:           _

First name:          _
Patronymic surname: _
Matronymic surname: _
```

I came for Python, stayed for the names

```
First name:          _
Last name:           _

First name:          _
Middle name:         _
Last name:           _

First name:          _
Patronymic surname:  _
Matronymic surname:  _

Last name:           _
First name:          _
```

I came for Python, stayed for the names

```
First name:          _
Last name:           _

First name:          _
Middle name:         _
Last name:           _

First name:          _
Patronymic surname:  _
Matronymic surname:  _

Last name:           _
First name:          _

Name:                _
Number:              _
```

I came for Python, stayed for the names

```
First name:          _
Last name:           _

First name:          _
Middle name:         _
Last name:           _

First name:          _
Patronymic surname:  _
Matronymic surname:  _

Last name:           _
First name:          _

Name:                _
Number:              _

Name:                _
```

I came for Python, stayed for the names

```
First name:          _
Last name:           _

First name:          _
Middle name:         _
Last name:           _

First name:          _
Patronymic surname:  _
Matronymic surname:  _

Last name:           _
First name:          _

Name:                _
Number:              _

Name:                _
```

von und zu, de/d', van/de/ter, z/ze, di/de/da/degli/dalla, of, …

I came for Python, stayed for the names

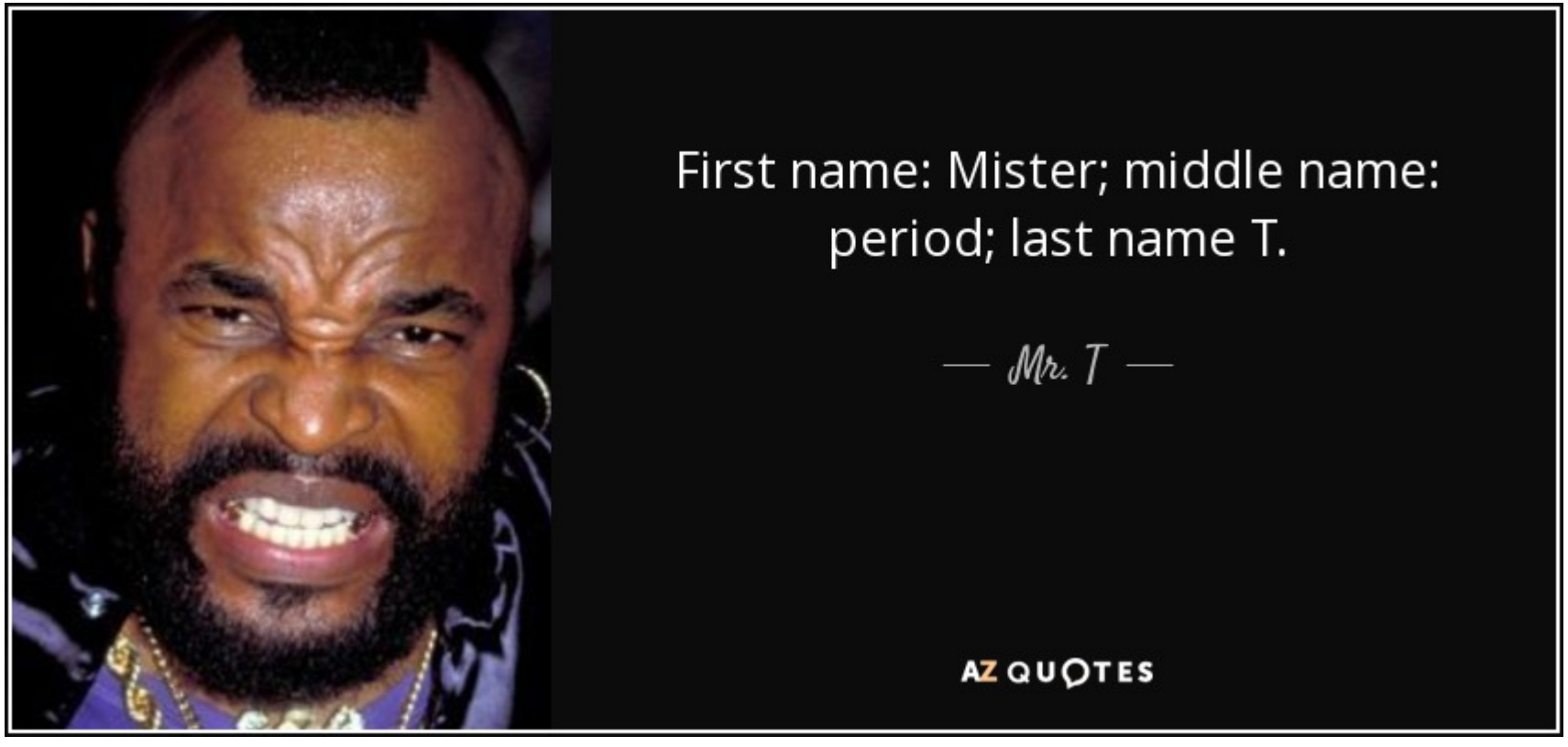
```
First name:          _
Last name:           _

First name:          _
Middle name:         _
Last name:           _

First name:          _
Patronymic surname:  _
Matronymic surname:  _

Last name:           _
First name:          _

Name:                _
Number:              _

Name:                _

von und zu, de/d', van/de/ter, z/ze, di/de/da/degli/dalla, of, …

Dr., PhD.,
```

Use one field for the full name

```
Full name:                _
How should we call you: _
```

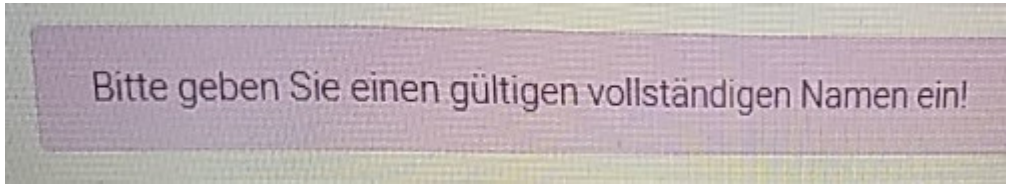
Use one field for the full name

```
Full name:                _
How should we call you: _
```



“Please enter characters from the European character set only.”

“Please enter characters from the European character set only.”



“Please enter a full valid name.”

Don't assume anything

Don't assume anything

- don't put random limit on their length

Don't assume anything

- don't put random limit on their length
  - *Pippilotta Delicatessa Windowshade Mackrelmint Ephraim's Daughter Longstocking*

Don't assume anything

- don't put random limit on their length
  - *Pippilotta Delicatessa Windowshade Mackrelmint Ephraim's Daughter Longstocking*
  - *Karl-Theodor Maria Nikolaus Johann Jacob Philipp Franz Joseph Sylvester Buhl-Freiherr von und zu Guttenberg*

Don't assume anything

- don't put random limit on their length
  - *Pippilotta Delicatessa Windowshade Mackrelmint Ephraim's Daughter Longstocking*
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- family members don't have necessarily the same family name (*Šedivý* / *Šedivá*)

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- all printable (`codepoint > 32`) are probably fine, 🍻

- **Christopher Null**: *Hello, I'm Mr. Null. My Name Makes Me Invisible to Computers*

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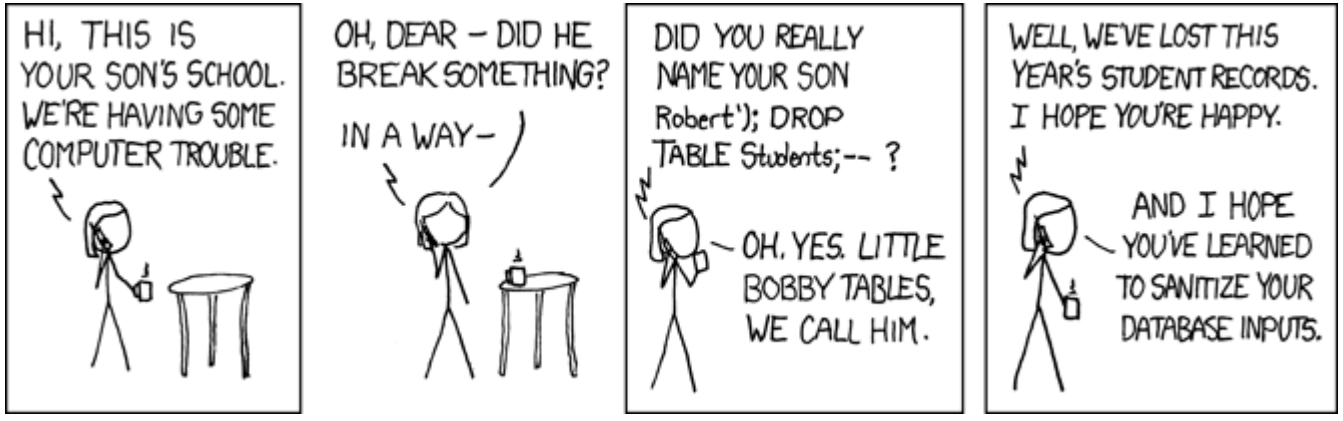

xkcd.com/327

Addresses: streets, cities

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Hauptstraße != HauptstraBe


Å


D 15
Y

Hint question*

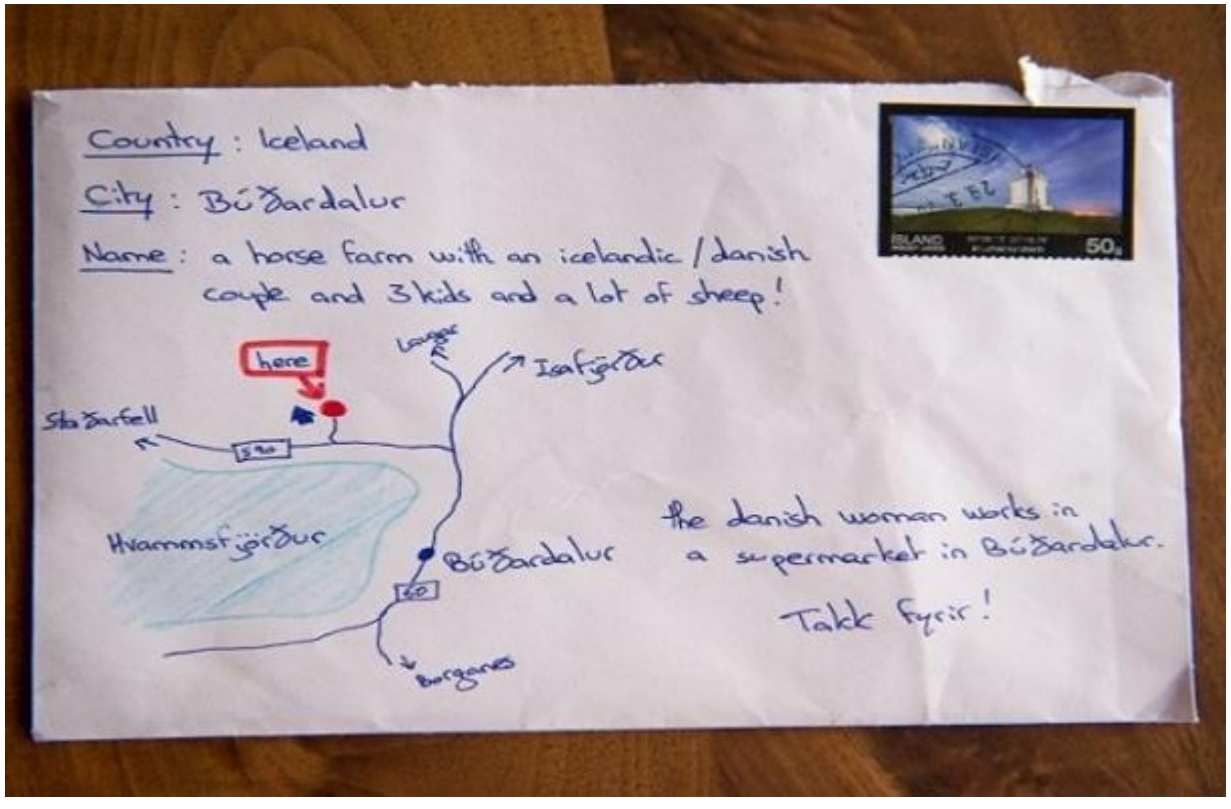
What is your mother's maiden name

Answer (at least 6 characters)*

Smith


LLANFAIRPWLLGWYNGYLLGOGERYCHWYRNDROBWLLLLANTYSILIOGOGOGOCH
Llan-vire-pooll-guin-gill-go-ger-u-queern-drob-ooll-llandus-ilio-gogo-goch
Way Out


Grzegorz
Brzęczyszczykiewicz.
Chrząszczyrzewoszczyce.
Powiat Łękołody.
ZNALEZIONO NA JEJA.PL


Country : Iceland
City : Búðardalur
Name : a horse farm with an icelandic / danish couple and 3 kids and a lot of sheep!
here
Ísafjörður
Stykkishólmur
Hvammsfjörður
Búðardalur
Borgarnes
the danish woman works in a supermarket in Búðardalur.
Takk fyrir!

Patrick McKenzie: **Falsehoods Programmers Believe About Names**

https://www.kalzumeus.com/2010/06/17/falsehoods-programmers-believe-about-names/

- People have exactly one canonical full name.
- People have exactly one full name which they go by.
- People have, at this point in time, exactly one canonical full name.
- People have, at this point in time, one full name which they go by.
- People have exactly N names, for any value of N.
- People's names fit within a certain defined amount of space.
- People's names do not change.
- People's names change, but only at a certain enumerated set of events.

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- People's names are written in ASCII.
- People's names are written in any single character set.
- People's names are all mapped in Unicode code points.
- People's names are case sensitive.
- People's names are case insensitive.
- People's names sometimes have prefixes or suffixes, but you can safely ignore those.
- People's names do not contain numbers.
- People's names are not written in ALL CAPS.

Patrick McKenzie: **Falsehoods Programmers Believe About Names**

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- People's names are not written in all lower case letters.
- People's names have an order to them. Picking any ordering scheme will automatically result in consistent ordering among all systems, as long as both use the same ordering scheme for the same name.
- People's first names and last names are, by necessity, different.
- People have last names, family names, or anything else which is shared by folks recognized as their relatives.
- People's names are globally unique.
- People's names are almost globally unique.
- Alright alright but surely people's names are diverse enough such that no million people share the same name.
- My system will never have to deal with names from China.

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- Or Japan.
- Or Korea.
- Or Ireland, the United Kingdom, the United States, Spain, Mexico, Brazil, Peru, Russia, Sweden, Botswana, South Africa, Trinidad, Haiti, France, or the Klingon Empire, all of which have “weird” naming schemes in common use.
- That Klingon Empire thing was a joke, right?
- Confound your cultural relativism! People in my society, at least, agree on one commonly accepted standard for names.
- There exists an algorithm which transforms names and can be reversed losslessly. (Yes, yes, you can do it if your algorithm returns the input. You get a gold star.)
- I can safely assume that this dictionary of bad words contains no people’s names in it.
- People’s names are assigned at birth.

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- OK, maybe not at birth, but at least pretty close to birth.
- Alright, alright, within a year or so of birth.
- Five years?
- You're kidding me, right?
- Two different systems containing data about the same person will use the same name for that person.
- Two different data entry operators, given a person's name, will by necessity enter bitwise equivalent strings on any single system, if the system is well-designed.
- People whose names break my system are weird outliers. They should have had solid, acceptable names, like 田中太郎.
- **People have names.**

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Miroslav Šedivý