UTF-8 was originally defined with a codespace up to 31 bits, and therefore with up to 6 bytes per character. Since quite a few years ago, it has been reduced in all the relevant definitions (ISO, Unicode, IETF) to a codespace up to 0x10FFFF and a maximum of 4 bytes per character. Many places in the Ruby code base are updated to this 4 byte limit (e.g. EncLen_UTF8 in enc/utf_8.c). But other places in the Ruby code base are not yet updated to this limit (e.g. code_to_mbclen in enc/utf_8.c). This should be fixed.

[I have classified this as a feature because I wasn't able to find a way to expose this problem in Ruby code, but this should be reclassified as a bug if such a problem can be found.]

Related issues:
- Related to Ruby trunk - Bug #13353: Backport stringio fixes
- Related to Ruby trunk - Bug #13590: Change max byte length of UTF-8 to 4 byte...
- Related to Ruby trunk - Feature #13588: Add Encoding#min_char_size, #max_char...

Associated revisions
- Revision 8598683 - 04/25/2015 10:36 PM - nobu (Nobuyoshi Nakada)
  - `enc/utf_8.c: limit UTF-8`
    - `enc/utf_8.c (code_to_mbclen, code_to_mbc): reject values larger than UTF-8 max codepoints. [Feature #11094]`
  - `git-svn-id: svn+ssh://ci.ruby-lang.org/ruby/trunk@50392 b2dd03c8-39d4-4d8f-98ff-823fe69b080e`

Revision 50392 - 04/25/2015 10:36 PM - nobu (Nobuyoshi Nakada)
- `enc/utf_8.c: limit UTF-8`
  - `enc/utf_8.c (code_to_mbclen, code_to_mbc): reject values larger than UTF-8 max codepoints. [Feature #11094]`

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History
- #1 - 04/25/2015 04:42 AM - nobu (Nobuyoshi Nakada)
  - File 0001-enc-utf_8.c-pack.c-limit-UTF-8.patch added

And pack("U") and unpack("U")?

Also rubyspec seems to fail.

Array#pack with format 'U' encodes values larger than UTF-8 max codepoints ERROR
RangeError: pack(U): value out of range
enc/utf_8.c: limit UTF-8

- enc/utf_8.c (code_to_mbc, code_to_mbc): reject values larger than UTF-8 max codepoints. [Feature #11094]

#3 - 03/22/2017 06:14 AM - nobu (Nobuyoshi Nakada)
- Related to Bug #13353: Backport stringio fixes added

#4 - 05/23/2017 09:11 AM - duerst (Martin Dürst)
- Related to Bug #13590: Change max byte length of UTF-8 to 4 bytes to conform to definition of UTF-8 added

#5 - 05/23/2017 09:12 AM - duerst (Martin Dürst)
- Related to Feature #13588: Add Encoding#min_char_size, #max_char_size, #minmax_char_size added

Files

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