

Proposed enhancements for emoji characters: background

To: UTC
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Live Doc <http://goo.gl/g3lBiQ>

Emoji characters have become extremely popular. Yet the choice of emoji to be represented in Unicode has left many people confused or disappointed. People also misunderstand how long it takes to encode characters (and support them on operating systems), and what terms like WHITE in character names mean. (For more on this see the Unicode FAQ and the working draft tr51 “[Unicode Emoji](#)”.) Yet it is clear that the Unicode Consortium needs to address more quickly some of the issues that have come up.

This proposal attempts to address several issues related to emoji-like characters in Unicode:

- Concerns about the lack of diversity in the representation of the people and body part emoji.
- Concerns about apparent bias in the selection of encoded characters, and/or notable gaps in the current set.
- Popular requests for emoji additions.

This document is one of a set which should be read and considered together:

- [L2/14-172](#) Proposed enhancements for emoji characters: background
- [L2/14-173](#) Selectors for Emoji skin tone
- [L2/14-174](#) Emoji Additions

Note: The ‘R’ versions of the documents include updates per UTC discussions.

It is also recommended that people read the working draft *Unicode Emoji* at unicode.org/reports/tr51/ before continuing.

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A. Sources of input

- Concerns and requests expressed directly to the Unicode Consortium and to member organizations
- Existing sets of pictographs used in email and messaging.
- Popular petitions and campaigns related to emoji, notably:
 - Campaigns for more diversity (see details in diversity section below).
 - Campaigns for specific food items: taco and hot dog (see details in food section below).
- Websites with collections of requests for new emoji (some surprising consistency among these and other requests), e.g.:
 - [Life Won't Be Complete Until We Get These Emojis](#) (NYmag)
 - [19 Emoji That Really Should Exist](#) (Business Insider)
 - [18 Emojis That Should Exist But Don't](#) (Buzzfeed)
- Other factors listed in [D. Additional characters](#)
- **Note:** *these were input sources, but **not** requirements: many were meant ironically, and not considered seriously for encoding.*

B. Long-term direction: embedded graphics

Unicode will never be able to encode all of the wide variety of emoji-like images that people seem to want to use in message, documents, and social media. The longer-term solution is to facilitate including these as embedded graphics (aka “stickers”). However:

- There are protocol and other restrictions that limit where these can be used (e.g. not currently in e-mail subject lines, SMS messages, domain names or filenames (images can be included in a Twitter message via a URL that references the image on an external server)).
- The user interface for entering images is typically much more cumbersome than an emoji keyboard or palette.
- Such images do not necessarily scale automatically to match adjacent text.

Platform vendors and protocol developers need to work on improving those issues. However, Unicode should address the highest-priority concerns using encoding-based approaches, not

only to provide a quicker solution, but to avoid the appearance of preferred treatment for certain characters within some potentially larger sets.

For more about this, see the working draft *Unicode Emoji* at unicode.org/reports/tr51/

C. People & body part emoji, default appearance and diversity

The physical appearance of people may differ in skin tone, hair style & color, facial hair, eye color & shape, use of prescription glasses, body size and shape, etc. Presenting the generic people and body part emoji such as WOMAN or NOSE with a single set of specific features appears to privilege those particular features; presenting emoji for occupations (CONSTRUCTION WORKER, INFORMATION DESK PERSON) with a particular gender may be seen as reflecting traditional biases. (Note, here “body part” includes the hand symbols).

Furthermore, people do seem to want to use and reliably interchange emoji that reflect at least some of the appearance variation present in real people.

Some related links:

- [Apple and Google: Support Equality. Make Diverse Emojis!](#)
- [Apple: Add More Diversity to the Emoji Keyboard](#)
- [Unicode Unveils 250 New Emoji. Gets Thumbs Down For Diversity](#)
- [iDiversicons](#)

Let us consider each of the related issues in turn.

C1. Default presentation for generic people & body part emoji

The emoji characters in Unicode were not meant to be specific to race, etc.

As much as possible, the generic people and body part emoji should be drawn by default—in Unicode charts and in vendor fonts—to avoid identification with specific physical features other than those that are part of the character name (as in PERSON WITH BLOND HAIR)—perhaps closer to outlines or silhouettes, or to the emoticons. The charts (and the Android and Windows fonts) already do this for, e.g., FAMILY, MAN AND WOMAN HOLDING HANDS, etc. When these are shown in color, they should preferably use a non-realistic skin tone (such as yellow-orange). The people emoji should be drawn as gender-neutral if the character name does not designate gender (e.g. POLICE OFFICER, KISS, COUPLE WITH HEART). Interoperability suffers if POLICE OFFICER is shown as female on one platform and male on another.

→ *Proposal*: Consensus on a goal to change glyphs in the chart fonts as necessary.

C2. Supporting and interchanging multiple presentations for existing people & body part emoji

On the other hand, people want to be able to use and interchange emoji with more specific physical appearance; merely making the generic emoji look generic (i.e. like no real person) does not provide any diversity of appearance, it just avoids privileging certain physical

characteristics.

An encoding-based approach is not suitable for conveying all of the variations that people might want to represent, and supporting too many specific-appearance variations of each generic emoji could have a huge negative impact on both font size and complexity of input. A reasonable compromise would be to support a few more-specific appearance variations for each generic emoji. Of course, any move toward encoding some physical appearance variants can raise issues about why other variants are not being encoded, but the argument about font size and input complexity is a compelling response.

Based on direct requests, public discussion, and existing “diverse emoji” apps, the aspect of physical appearance which seems most important by far for people to specify is skin tone. For this there are two sets of considerations:

a) How many skin tone variants are needed, and what are the tones?

- The [Fitzpatrick Scale](#) uses 6 tones, though it is focused on how skin types react to sun; however, it is also used for cosmetology and fashion design. It does have the advantage of being a recognized standard without negative associations. The names and specific hues for each tone are not completely consistent across all usages of this scale.
 - For examples, see <http://www.arpansa.gov.au/pubs/RadiationProtection/FitzpatrickSkinType.pdf>
- Some other dermatologic scales are listed [here](#), though none seem as relevant
- Wikipedia has entries for 4 skin tone categories including Albino, which map to ranges of the Fitzpatrick Scale approximately as follows: Albino (I.) Light/White/Fair (I–III.) Olive-Brown/Beige/Pardo (IV–V.) Dark/Black (V–VI.)
- The iDiversicons images use 5 tones, see [L2/14-204](#). These are partly based on artistic practice in representation of skin tones (as taught in art school).
- The most minimal classification schemes use 3 (light,medium,dark or white,brown,black). These correspond to the Wikipedia category entries if Albino is merged with Light/White/Fair.
- Fewer/broader groupings may simplify the user interface for selecting skin tone variants and may be less costly to implement.
- An important issue is inclusiveness: Ensuring that everyone in the world feels that they can be represented by the offered selection of skin tones. It is not clear whether this is better addressed by broader (but fewer) groupings, or more (but narrower) groupings.

The specific tones chosen must be representative of people around the world, not just those in a specific region such as the U.S. In UTC discussion there was a consensus on using 5 tones based on the Fitzpatrick scale, with the lightest corresponding to Fitzpatrick I-II and the others each corresponding to one of the remaining Fitzpatrick tones.

Also note that regardless of how many tones are chosen, any implementation is free to display fewer tones by collapsing two or more specified tones into a single tone for display.

b) What mechanism is used to encode them?

Two mechanisms were considered:

1. Variation selectors (FE00..FE0F, Mn, default ignorable, TR46 ignored => deleted):
define one variation selector for each skin tone.
 - No new characters to define
 - Variation selectors could automatically imply emoji presentation style
 - Variation selectors are default ignorable and could be ignored by implementations that are older or choose not to support the selectors.
 - Variation selectors are not extensible and cannot be cascaded (only one selector per character, per current specification and per OpenType requirements).
Maximum of 16 variation sequences for any non-Han character, which limits the number of appearance variations that could be specified.
 - These variation selectors would apply to many characters with effectively an inherent interpretation (as with the text/emoji style selectors), which is not really how variation selectors are intended to be used.
 - There is already a mechanism to designate what they apply to
2. Define several new “emoji modifier” characters, one for each of the skin tones. If these follow a person or body part emoji, the sequence could either result in the person or body part emoji being displayed with the specified tone, or in a sequence of two glyphs (one for the person or body part emoji, and one corresponding to the modifier character); the choice is up to the implementation. If applied to something other than a person or body part emoji, The modifier character would always display separately if applied to something for which skin tone is not relevant.
 - This requires new characters, but it may be possible for these to be accepted quickly.
 - These would not automatically imply emoji presentation style for the preceding non-modifier emoji character.
 - These characters would *not* be default ignorable, the idea being that the presence of a skin-tone indicator should always be indicated in some way, even if only as an empty box (for missing character). Likely general category Sk (modifier symbol), like spacing modifiers such as U+00AF MACRON.
 - These would have an inherent semantic, unlike variation selectors.
 - Other emoji modifiers could be defined in the future (to select gender or hair color, for example), and multiple such modifiers could be applied to a single emoji character.
 - There is no mechanism to define what they are intended to be used with, nor to limit what they may be used with. We could document a list of the intended base characters, or we could add data, such as in TR51.

The range of possible presentations for say WHITE SMILING FACE + SKIN-TONE-DARK would thus include:

1. WHITE SMILING FACE (text style) followed by empty box (tofu)
2. WHITE SMILING FACE (emoji style) followed by empty box (tofu)
3. WHITE SMILING FACE (text style) followed by color swatch for skin tone dark
4. WHITE SMILING FACE (emoji style) followed by color swatch for skin tone dark
5. WHITE SMILING FACE (emoji style) with dark skin tone

The choice depends partly on the importance of the following usage domains:

- e-mail subject lines
- SMS text messages
- domain names (note, emoji are not allowed per IDNA2008 but are allowed per UTR46; variation selectors are ignored in all IDNA handling—deleted in nameprep—and do not affect the mapped domain name)
- server names
- file names

UTC discussion indicated a strong preference for non-default-ignorable characters and mechanism 2 above.

c) Proposal

→ *Proposal*: Allow designation of 5 skin tones for people and body part emoji, using new modifier symbol characters. For details, including the characters with which these are intended to be used, see [L2/14-173](#) *Selectors for Emoji skin tone*.

C3. Note: Multi-person groupings and skin tone selector

There are several emoji for multi-person groups:

- KISS (two people kissing)
- COUPLE WITH HEART
- FAMILY (two parents and child[ren])
- MAN AND WOMAN HOLDING HANDS
- TWO MEN HOLDING HANDS
- TWO WOMEN HOLDING HANDS

The mechanism described in C2 for specifying skin tone applies to all of the people depicted in these multi-person groupings.

However, real multi-person groupings include many in which various members have different skin tones. For representing such groupings, users can employ techniques already found in current emoji practice, in which a sequence of emoji is intended to be read together as a unit, with each emoji in the sequence contributing some piece of information about the unit as a whole. Users can simply enter separate emoji characters for each member of the group, each with their own skin tone e.g.: MAN + light tone, WOMAN + olive tone, BOY + dark tone, possibly preceded by a generic FAMILY character to indicate that the individuals depicted are intended to be interpreted as a family. This requires no special encoding or display support.

C4. Summary Q&A

- What are the most important changes needed for default appearance and diversity?
 - The default presentation for people and body part emoji should avoid indicating any particular physical appearance (skin tone, hair color) or gender except as suggested by the character name (though even that may not be definitive, as in the case of e.g. GUARDSMAN or BLACK LEFT-POINTING INDEX: see working draft *Unicode Emoji* at unicode.org/reports/tr51/).

- There is strong demand to be able to interchange people and body part emoji with diverse physical appearance characteristics, with the most important characteristic being skin tone
- Why choose the Fitzpatrick scale as the basis for identifying skin tone?
 - This is a recognized classification system without negative associations, developed for dermatological use but also used in cosmetology and fashion design
- Why not encode separate characters for each appearance variant?
 - There are potentially more than 170 Unicode characters that might need appearance variants for skin tone and possibly other aspects of physical appearance; this number may also grow in the future, as well. Just for skin tone variants, this would imply more than 850 new characters. This would also place more limitations on how implementations could choose to support appearance variants. With the modified symbols, some implementations may choose to simply display a separate color swatch.
- How can an implementation support input of these appearance variants without significantly complicating the user interface?
 - There are multiple approaches. On touch keyboards, a long press on a generic version of a person emoji could bring up a pop-up palette displaying versions with specific skin tones.
 - On general palettes for input of emoji, a separate palette (which may appear only when a person emoji is selected) could display color swatches.

D. Additional characters

As emoji have become more popular, the selection process for new emoji (aka “pictographs that could have an emoji representation”) has puzzled and disappointed people. Up until now, most of the emoji characters have been encoded “reactively”, based on existing sets. To some extent, however, we have also encoded characters that “flesh out a set” rather than simply incorporating characters in existing sets: see unicode.org/reports/tr51/#Encoding .

The [L2/14-174](#) *Emoji Additions* document proposes new characters in various categories. The focus is on addressing perceptions of bias, filling in notable gaps, and responding to highly popular requests. As always, adding some characters can prompt questions about why other potential candidates were not added. There are several factors that went into the selection of these proposed characters.

1. Does the proposed pictograph fill in a perceived gap in existing types of emoji? Does the proposed pictograph “fill in a hole” among that type of character? For example, we have TIGER, but not LION.
2. Do we appear right now to be “playing favorites”? For example, Unicode has a CHURCH but no MOSQUE.
3. Is there a clearly recognizable image that could serve as a paradigm, standing for a range of possible images?

4. Is the expected frequency of use at least as high as current emoji characters of the same type? We've looked at various measures of this, such as frequency of associated words in web pages.
5. Is it often requested (eg HOT DOG or UNICORN)?
6. Is it just one of many types, with no special reason to favor it? For example, there are thousands of occupations: is there a special reason to favor particular ones of them? (DOCTOR, DENTIST, JANITOR, etc.)
7. Are these needed for compatibility with high-use emoji in existing systems, such as Gmail?

The number of characters proposed for first set of such additions has intentionally been kept small to address concerns about font size and input complexity. As noted above, the preferred long-term solution is better support of embedded graphics; the proposed additions are just intended to address some high-priority needs during the transition to that long-term approach.

This is an initial proposal, and we can refine it further based on feedback.

There are some categories where we don't foresee adding characters in the near future, such as occupations. There is a [wide range of occupations](#), and unlike other cases, there doesn't seem to be a smaller set of very-high frequency use, so there doesn't seem to be a good reason to favor some over others. Moreover, it is difficult to come up with images that distinguish (say) ECONOMIST from ACCOUNTANT. People can serially list objects (BUS, FLOWER, etc.) next to person or face emoji (to indicate *bus driver*, or *angry florist*, etc.), so it might be better to have more objects instead.

The specific proposed additions are discussed in a separate document: [L2/14-174 Emoji Additions](#).