

# Positional category of Javanese pengkal

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## Proposal

We propose to change the Indic positional category of U+A9BE JAVANESE CONSONANT SIGN PENGKAL from "Right" to "Bottom\_And\_Right".

## Error report

This proposal takes up an [error report](#) that R.S. Wihananto sent to the Unicode Consortium on 2015-04-09:

Positional Category of U+A9BE JAVANESE CONSONANT SIGN PENGKAL and U+A9BF JAVANESE CONSONANT SIGN CAKRA

The positional category of U+A9BE JAVANESE CONSONANT SIGN PENGKAL should be corrected from 'Right' to 'Bottom\_And\_Right'.

The positional category of U+A9BF JAVANESE CONSONANT SIGN CAKRA should be corrected from 'Right' to 'Bottom\_And\_Left'; but I can't find this category in the Indic Positional Category data. This character is similar to U+103C MYANMAR CONSONANT SIGN MEDIAL RA. U+103C is not found/categorized in the Indic Positional Category data.

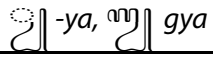
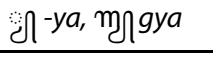
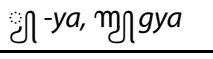


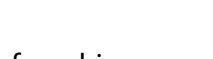
The second part of this error report has been addressed in the meantime based on [L2/17-038](#); the Indic positional category of U+A9BF JAVANESE CONSONANT SIGN CAKRA has been "Bottom\_And\_Left" since Unicode 10. This proposal therefore only covers the first part of the error report.

## Evaluation









We agree with R.S. Wihananto that the Indic positional category of U+A9BE JAVANESE CONSONANT SIGN PENGKAL should be corrected from "Right" to "Bottom\_And\_Right".

Usage in current digital fonts, in colonial-era metal type, and in manuscripts agrees that *pengkal* begins to the lower right of the consonant (baseline or subjoined) that it attaches to, has a partial loop that extends below the consonant, then has an arm that goes up to the right of the consonant and drops back down to the baseline. It is somewhat similar to U+A9C0 JAVANESE PANGKON, which already has the positional category Bottom\_And\_Right.







Here is *pengkal* rendered by several digital fonts, attached first to the dotted circle, then to the consonant *ga*.

Font	Designer	Pengkal clusters
Tuladha Jejeg 2.0	R.S. Wihananto	 - <i>ya</i> ,  <i>gya</i>
Noto Sans Javanese 1.0	Jo De Baerdemaeker	 - <i>ya</i> ,  <i>gya</i>
Noto Sans Javanese 2.0	Aditya Bayu Perdana	 - <i>ya</i> ,  <i>gya</i>

Here is *pengkal* as provided by colonial-era type foundries.

Type face	Foundry/printer	Pengkal clusters
Javaansch Letterschrift	E.J. Brill	  <i>kya</i>
Javaansch Cursief	Lettergieterij „Amsterdam“ Voorheen N. Tetterode	  <i>pyur</i>
?	Serampore Mission Press	  <i>lya</i>
Javaansch cursief	Joh. Enschedé	  <i>bdya</i>

Finally, *pengkal* in manuscripts that are now in the British Library:

Origin	Manuscript	Pengkal clusters
Surakarta	Add MS 45273 folio 25r	  <i>dya</i>
Sedayu	Add MS 45273 folio 82r	  <i>lya</i>
Yogyakarta	MSS Jav 24 folio 24r	  <i>lya</i>

## Impact on Universal Shaping Engine

The specification of the [Universal Shaping Engine](#), which relies on Unicode data including the Indic positional category, has not yet been updated to Unicode 10, and doesn't support multi-side positional categories such as Bottom\_And\_Right or Bottom\_And\_Left for medial consonants yet. It needs to be updated. At the same time, the definition of a standard cluster should be updated to allow for multiple MBlw, as combinations of *cakra* and *pengkal* are known to occur and combinations of *keret* (whose Indic positional category will be corrected to Bottom based on [L2/19-004](#)) and *pengkal* are at least theoretically possible. 