Step 1

Tokenizer Vocabulary Transliteration

vocab table

ID	Token	Score
0	<s>	0.0
1	<pad>	0.0
…	…	…
63040	太陽	-12.97
…	…	…
99328	太阳	-13.39
…	…	…
320866	_ଯୋଗା	-13.85
…	…	…
339775	_যোগা	-14.03

transliteration

triplet set

v	w	Score
<s>	<s>	0.0
<pad>	<pad>	0.0
…	…	…
taiyang	太陽	-12.97
…	…	…
taiyang	太阳	-13.39
…	…	…
_yogaa	_ଯୋଗା	-13.85
…	…	…
_yogaa	_যোগা	-14.03

Step 2

Merge New Vocabulary

filter triplets

taiyang	太陽	-12.97
taiyang	太阳	-13.39
_yogaa	_ଯୋଗା	-13.85
_yogaa	_যোগা	-14.03

Min-Merge

add the token-score pairs (**minimum scores**) to the vocab table of the mPLM tokenizer

taiyang	-13.39
_yogaa	-14.03

Max-Merge

add the token-score pairs (**maximum scores**) to the vocab table of the mPLM tokenizer

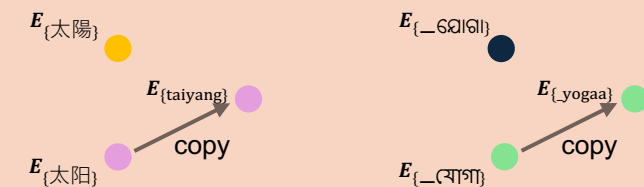| taiyang	-12.97
_yogaa	-13.85

Average-Merge

add the token-score pairs (**average scores**) to the vocab table of the mPLM tokenizer
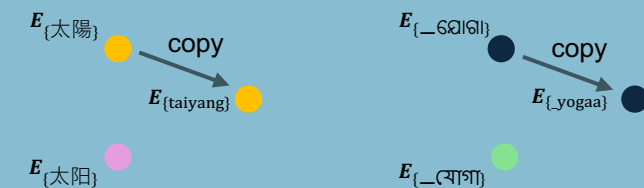
taiyang	-13.18
_yogaa	-13.94

Step 3

Subword Embedding Initialization

Min-Merge

$E_{\{太陽\}}$ $E_{\{\_ଯୋଗା\}}$

$E_{\{taiyang\}}$ $E_{\{\_yogaa\}}$

$E_{\{太阳\}}$ copy $E_{\{\_যোগা\}}$ copy

Max-Merge

$E_{\{太陽\}}$ copy $E_{\{\_ଯୋଗା\}}$ copy

$E_{\{taiyang\}}$ $E_{\{\_yogaa\}}$

$E_{\{太阳\}}$ $E_{\{\_যোগা\}}$

Average-Merge

$E_{\{太陽\}}$ average $E_{\{\_ଯୋଗା\}}$ average

$E_{\{taiyang\}}$ $E_{\{\_yogaa\}}$

$E_{\{太阳\}}$ $E_{\{\_যোগা\}}$