

Data entry procedures for Arabic and Urdu.
Special considerations when typing in double consonants
and forms involving the "Hamza".

The IITM r2leditor works on the principle of generating syllables from the keystrokes. In Arabic, syllables involving consonants which are non-connectors require that the following consonant be shown in the initial form.

Also when the long vowel corresponding to "a" is a part of the syllable, the next consonant will be shown in the "initial" form eventhough the syllable may be in the middle of a word.

The IITM r2leditor takes into account most of the requirements for correctly rendering the shapes but in the first version, there have been some problems. To handle the problem situations and also to provide a forced shape for some consonants, the data entry method uses two specific ideas. The first one is an invisible special character which will act as a special delimiter following a syllable to retain the shape without modification. The second is an invisible consonant which has an initial, medial, final and standalone form for all the combinations with vowels and modifiers. First we will introduce the special character and then the invisible consonant.

This special character is obtained by typing in the "{" key. When this keystroke is entered, the editor thinks that the last syllable entered must retain its shape as such and not change depending on the succeeding consonant. usually, when a space is entered, the editor will change the shape to the final form. Otherwise, the intital form or the middle form will be retained except when a non-connecting consonant is involved.

Let us see some examples.

مَرَكَّ ٱل

In the first word, "ma" is shown in the middle form which is

incorrect and in the second, "lam" is shown in final form. To get the correct shapes shown below, one can use the special character "{" in the sequence of entered keystrokes.

X{mqruk(sp) and a{l(sp)

مَرَكٌ اَلٌ

This is a trick to get the right shapes and should be used only when needed. The second method involves the use of the invisible consonant which corresponds to the key "V".

The use of this consonant will show up only with the vowel marks. This is useful for typing in double consonants. Under the rules for data entry, only one vowel can end a syllable. The

"shadda" sign is viewed as a modifier and so it will not be possible to type in a consonant with anyone of the vowels, if

the shadda has been typed in (the key "e" is used for the shadda sign). So to get only the vowel marks on a double

consonant, one can type in a "v" followed by the required vowel.

The following example illustrates this.

نَزَلٌ.

The string above was entered as "nzeVl" with the special character included between V and l. This forces the lam to take the standalone shape.

Here is another example.

صَبِيٌّ

In the above case, the shadda is on the last consonant. Hence the data entry requires that a space be typed in after the double "ya" resulting in the final form. Now the V with # (for un) may be typed in to get the desired form.

By trial users will be able to guess the correct sequence of keystrokes for handling these cases.

