**Azhagi Arabic-script Keyboard Layout** {Draft version: 2017/07/20}

*Azhagi is software that is very easy to learn, use and demonstrate, but difficult to explain in text, which is why this document is so long. I’m sorry about that.  
Please read the Azhagi Introduction document first. That explains the basics. I am trying to make the various layouts as consistent as possible, so that users can switch languages easily.  
This Arabic/Persian/Urdu/etc keyboard mapping is a first draft. It is rough and ready. If you find any bugs, please say so.   
It is also experimental: if any design decisions are wrong, they can be changed. Comments and suggestions would be gratefully received. Alec McAllister, t.a.mcallister@leeds.ac.uk*

This keyboard is for all languages that are written with the Arabic script: the user can type Arabic, Urdu, Persian, etc., all with this single keyboard layout.

This layout can type all the Arabic-script characters and vowel and other marks specified in Unicode ranges "Arabic 0600-06FF"[[1]](#footnote-1), "Arabic Supplement 0750-077F", and "Arabic Extended-A 08A0-08FF"[[2]](#footnote-2). It also types the Ornate Parentheses (FD3E and FD3F) from “Arabic Presentation Forms-A FB50-FDFF”. If any other characters are needed, I will try to add them.

This keyboard is based upon the standard UK layout, and is likely to be most useful to people who cannot already touch-type with one of the national standard layouts of Egypt, Iran, Pakistan, etc.

Azhagi is portable software, i.e. it does not need to be installed on the computer. It can be run directly from a memory stick or other device. Therefore, the user does not need to have any Arabic-script keyboard installed or active on the computer. (Installing or activating such keyboards normally requires Administrator rights, which the user might not have, especially when using someone else’s computer.)

**Design Principles**

* All characters are typed in a consistent way that is easy to learn, remember and use.
* All characters are accessible to people with restricted movement: i.e. no more than two keys need to be pressed simultaneously.
* Characters and signs are mapped according to what they **look** like, not what they sound like. For example, the user first types the basic shape ٮ , then adds whatever dots or other marks are necessary to turn it into ب ت ٺ ٻ ث ݒ ٽ پ ݐ ݖ ݕ ٹ ټ ݓ etc, exactly as in handwriting. The basic shape ٮ is always on the same key, and each of the dots and other marks is always on the same key.
* Unless the user presses one of the Compose keys (currently # , @ and £) **immediately** after typing the string of characters, the user gets exactly what s/he types, without alteration.
* If the user types a combination of signs for which there is no precomposed character, s/he just gets exactly what was typed. For example, no language uses a precomposed character for س with a ط above it, so, if the user types س then ط then #, s/he just gets سط# .

**Compose keys**

# puts the sign **above** the base character ٮ..# = ت

## puts the sign **below** the base character ٮ.## = ب

@ puts the sign **inside** the base character ح.@ = ج

£ puts the **small high** variant of a sign above the base character س£ = ۜ

££ puts the **small low** variant of a sign above the base character س££ = ۣ

` after any character produces **Alternative Form** of that character ى`# = ۍ

**Shifted keys**

Common signs have their own keys

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Name | Arabic character | QWERTY Key |  | Name | Arabic character | QWERTY Key |
| Fatha  064E | َ | e |  | Small Fatha  0618 | ؘ | E |
| Kasra  0650 | ِ | i |  | Small Kasra  061A | ؚ | I |
| Damma  064F | ُ | u |  | Small Damma  0619 | ؙ | U |
| Sukun  0652 | ْ | o |  | Small High Dotless Head Of Khah = Sukun  06E1 | ۡ | O |
| Arabic Full Stop  06D4 | ۔ | ¬ |  |  |  |  |

**Oddities**

There are too many signs to put them all on keys painted with appropriate characters, so I had to make arbitrary decisions. See the attached keyboard map for full details.

Examples are arbitrary.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Name** | **Shortcut** | **Example** | **Result** |
|  |  |  |  |  |
|  | **Dot Within** | **.@** | ح.**@** | ج |
|  |  |  |  |  |
|  | **Dot Above** | **.#** | j.**#** | خ |
|  | **Two Dots Above** | **..#** | b..**#** | ت |
|  | **Two Dots Above (Vertical)** | **:#** | b:**#** | ٺ |
|  | **Three Dots Above (pointing upwards)** | **X#** | bX**#** | ث |
|  | **Three Dots Above (pointing downwards)** | **x#** | bx**#** | ٽ |
|  | **Four Dots Above** | **::#** | b::**#** | ٿ |
|  |  |  |  |  |
|  | **Dot Below** | **.##** | b.**##** | ب |
|  | **Two Dots Below** | **..##** | d..**##** | ڍ |
|  | **Two Dots Below (Vertical)** | **:##** | b:**##** | ٻ |
|  | **Three Dots Below** | **…##** | b...**#** | ݐ |
|  | **Four Dots Below** | **::##** | b::**##** | ڀ |
|  |  |  |  |  |
|  | **Hamza** | **c** | ac | اء |
|  | **Hamza Above** | **c#** | ac**#** | أ |
|  | **Hamza Below** | **c##** | ac#**#** | إ |
|  |  |  |  |  |
|  | **Inverted V Above** | **^#** | d^**#** | ۮ |
|  | **Inverted V Below** | **^##** | d^#**#** | ݚ |
|  | **V Above** | **V#** | rV**#** | ڒ |
|  | **V Below** | **V##** | rV#**#** | ڕ |
|  | **Tah Above** | **t#** | bt**#** | ٹ |
|  | **Ring Below** | **0##** | d0#**#** | ډ |
|  |  |  |  |  |
|  | **Small character Above** | **£** | ys£ | ىۜ |
|  | **Small character Below** | **££** | ys££ | ىۣ |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

1. Except 0673 "ALEF WITH WAVY HAMZA BELOW", which is a deprecated character, i.e. to be avoided. [↑](#footnote-ref-1)
2. Except 08D4 and 08DA-08DF. [↑](#footnote-ref-2)