

NasX

Arabic literal symbols font

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1 Introduction

NasX is a first core of an Arabic mathematical font, conceived in the observation of rules of the Arabic calligraphy of the Arabic literal symbols. It's used by the packages **RyDArab** and **CurExt** to compose some Arabic mathematical expressions with the expandable curvilinear symbols. It's a package that can be used in a \TeX system.

The **NasX** font, offer to the user several literal symbol choices, of shape to be used in the different situations and domains of the Arabic scientific document and in the different Arabic regions.

Some objectives of the Arabic mathematical font **NasX** developed in **METAFONT** and respected Naskh style are:

- the production of symbols literal Arabic of tidy calligraphy and that defer the Arabic letters used in the text of Arabic font **xnsh** of Arab \TeX ;
- the confection of font without recourse to the scanner. It drove us to the survey of rules of the calligraphy of the Naskh style in view of a formulation of these rules;
- bets it to disposition of the user of other shapes of Arabic letter glyphs for the Arabic literal symbols. For example, the drawn letters with only their contour and/or those with a tail;

- takes it in consideration of the kashida;
- the confection of static parts of the Arabic expandable symbols.

\TeX is a system of document treatment developed initially by D. E. Knuth of the Stanford university. It is conceived for the exchange and the transmission of text, a real, language of communication, and the formatting, an excellent capacity of composition, of document. It contains families of fonts **Computer Modern** developed in **METAFONT**. \TeX is a set down mark of American Mathematical Society. **METAFONT** is a set down mark of Addison-Wesley Inc. The format **plain \TeX** has been developed by D. E. Knuth.

Arab \TeX is an extension of \TeX conceived by K. Lagally of the Stuttgart university. It permits to generate the Arabic writing, from an ASCII transliteration, of text of different, languages using the Arabic alphabet. It permits to encrust a text in Arabic in a Romance text, and vice versa. It also permits to introduce a Romance mathematical expression in an Arabic text. **Arab \TeX** contains the **xnsh** font developed in **METAFONT**. **Arab \TeX** is protected by copyright and set down under the LPPL (*\LaTeX Project Public License*) of \LaTeX 3 Project.

Ω is an extension of \TeX developed by J. Plaice and Y. Haralambous. It allows generating multilingual texts using the Unicode coding system.

The \LaTeX format has been developed initially by L. Lamport. \LaTeX is protected by a free license that is LPPL (*\LaTeX Project Public License*) of \LaTeX 3 Project.

2 Package

2.1 Files

The package **NasX** is distributed as:

nasx.zip: file compressed in ZIP format for Windows or Linux platform.

The decompression package gives the following directory tree:

readmenx.tex: this file in **TEX** format for a preliminary description.

readmenx.pdf: this file in **PDF** format for a preliminary description.

lpp1.txt: license information of the \LaTeX Project Public License.

tex: the subdirectory of files for **plain \TeX** composed of:

`nasx.tex`: the file of font definition.

`latex`: the subdirectory of files for L^AT_EX composed of:

`nasx.sty`: the extension of font.

`unasx.fd`: the file of font definition.

`nasxfnt.tex`: the file of font declarations.

`mf`: the subdirectory of files in METAFONT composed of:

`font.mf`: the file of font generalized.

`param.mf`: the file of parameters.

`base.mf`: the file of basis.

`nasx10.mf`: the file of font call.

`carnasx.mf`: the file of glyphs of font characters.

2.2 Installation

To install this package, one can put it into a folder intended to be the usual one.

3 Versions

3.1 Historic

- 2002/03/01 v1.1: the version used to compose the manuscript of the thesis [1].
- 2003/03/03 v1.2: includes:
 - a new transliteration:
 - * the adaptation for plain T_EX;
 - * the change of `\reh` and `\rreh` by `\zain` and `\zzain` respectively;
 - * the change of `\sheen`, `\Sheen`, `\ssheen`, `\SSheen`, `\SHEEN` and `\SSHEEN` by `\seen`, `\Seen`, `\sseen`, `\SSeen`, `\SEEN` and `\SSEEN` respectively.

- 2003/11/03 v1.3: includes:
 - more characters;
- the future version will include:
 - more characters;
 - the improvement of glyphs;
 - etc.

3.2 Compatibility

There is a compatibility between the first versions.

The **NasX** extension is compatible with all extensions that we had the opportunity to use jointly. It can happen that incompatibilities are generated at the time of the utilization of **NasX** together with other extensions.

4 Preamble

To generate the Arabic literal symbols of the **NasX** font with the \LaTeX format, the user must insert, in the preamble document, the following command:

```
\usepackage{nasx}
```

or in plain T_EX:

 nasx

5 Commands

(Cf. Table 1) (Cf. Table 1)

غظ و خشت شوق دي ز جـب

\$
\SSAD
\BBEHM
\JJEEEM
\HHEHM
\TTAHM
\KKAFM

\MMEEEM
\SSEENM
\AAINM
\FFEHM
\SSADM
\hheh
\pointarv
\bbehp
\jjeemp
\zzainp
\yyehp
\nnoomp
\ffehp
\qqafp
\ssheen
\tteh
\ttheh
\kkhah
\tthal
\ddad
\zzah
\gghain
\$

6 Documentation

In [1], we have give a large presentation for this font and a manual of utilization. In [2] we have present a study for an Arabic mathematical font in Unicode.

7 Copyright

NasX is copyrighted. The system and its source program's are in the public domain. That will encourage its use in one hand, and in the other hand, it allow its extension and improvement. The system is copyright only in order to forbid unauthorized copies.

However, you may use it freely for any scientific, experimental and strictly personal, non-commercial purposes if you give proper credit to the author. All other uses require a separate written license from the author.

	0	1	2	3	4	5	6	7	8	9
0x	,	,	,	,	,	,	,	,	,	
1x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
2x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
3x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
4x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
5x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
6x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
7x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
8x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
9x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
10x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
11x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
12x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
13x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
14x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
15x	٠	١	٢	٣	٤	٥	٦	٧	٨	٩
16x										
17x										
18x										
19x										
20x										

Figure 1: NasX Arabic literal symbols font

Code	Command	Glyph	Code	Command	Glyph	Code	Command	Glyph	Code	Command	Glyph
0	\snb	ا	32	\alef	ا	64	\aalef	ا	96		
1	\snn	ب	33	\beh	ب	65	\bbeh	ب	97	\BEH	ب
2	\sns	ج	34	\jeem	ج	66	\jjeem	ج	98	\JEEM	ج
3	\dailb	د	35	\dal	د	67	\ddal	د	99		
4	\dailn	ن	36	\waw	و	68	\wwaw	و	100		
5	\kasn	ز	37	\zain	ز	69	\zzain	ز	101		
6	\kasq	ط	38	\tah	ط	70	\ttah	ط	102	\TAH	ط
7	\rond	ي	39	\yeh	ي	71	\yyeh	ي	103		
8	\ras	ل	40	\lam	ل	72	\llam	ل	104	\LAM	ل
9	\alefrs	م	41	\meem	م	73	\mmeem	م	105	\MEEM	م
10	\queue	ن	42	\noon	ن	74	\nnoon	ن	106		
11	\kashidab	س	43	\seen	س	75	\sseen	س	107	\SEEN	س
12	\kashidaf	ع	44	\ain	ع	76	\aain	ع	108	\AIN	ع
13	\pointar	ف	45	\feh	ف	77	\ffeh	ف	109	\FEH	ف
14	\mgmue	ص	46	\sad	ص	78	\ssad	ص	110	\SAD	ص
15	\gdaad	ظ	47	\qaf	ق	79	\qqaf	ق	111		
16	\gdaaf	ح	48	\hamza	هـ	80	\hhamza	هـ	112	\HEH	هـ
17	\nhaytd	ذ	49	\lamalef	لا	81	\llamalef	لا	113	\KAF	ك
18	\nhaytf	ل	50	\Yeh	ل	82	\YYeh	ل	114	\TTAH	ط
19			51	\Noon	ن	83	\NNoon	ن	115		
20			52	\Zain	ز	84	\ZZain	ز	116		
21			53	\MEem	م	85	\MMEem	م	117		
22			54	\Beh	ب	86	\BBeh	ب	118	\BBEH	ب
23			55	\Jeem	ج	87	\JJeem	ج	119	\JJEEM	ج
24			56	\Heh	هـ	88	\HHeh	هـ	120	\HHEH	هـ
25			57	\Kaf	ك	89	\KKaf	ك	121	\KKAF	ك
26			58	\Lam	ل	90	\LLam	ل	122	\LLAM	ل
27			59	\Meem	م	91	\MMeem	م	123	\MMEEM	م
28			60	\Seen	س	92	\SSeen	س	124	\SSEEN	س
29			61	\Ain	ع	93	\AAin	ع	125	\AAIN	ع
30			62	\Feh	ف	94	\FFeh	ف	126	\FFEHEH	ف
31			63	\Sad	ص	95	\SSad	ص	127	\SSAD	ص

Table 1: Arabic literal symbols font **NasX**

This program may be distributed and/or modified under the conditions of the L^AT_EX Project Public License, either version 1.2 of this license or any later version.

The latest version of this license is in:

<http://www.latex-project.org/lppl.txt>

and version 1.2 or later is part of all distributions of L^AT_EX version 1999/12/01

or later.

This program consists of all files listed in this file `readmenx.tex`.

The **NasX** project is far from finished. It supposed to change without prior notice.

8 Acknowledgements

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9 Author

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References

- [1] Azzeddine Lazrek, *Vers un système de traitement du document scientifique arabe*, Thèse d'État ès-Science, Université Cadi Ayyad (2002), Marrakech.
- [2] Azzeddine Lazrek and Khalid Sami, *Arabic script in Unicode*, Submitted (2003).