Hebrew font encodings for use with LaTeX 2ε

Boris Lavva   Udi Fogiel

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1 Hebrew font encodings

The file `hebfontenc.fdd`[1] contains the Local Hebrew Encoding (`LHE`) definition, the external font information needed to use the Hebrew 7-bit fonts (old code fonts) and `hebfont` package that provides Hebrew font switching commands.

Using this file as an input, `lheenc.def` encoding definition file, all `.fd` files (font definition files) and font switching package for available Hebrew fonts are generated. We chose to use 7-bit encoding as default font encoding, because:

1. There are many 7-bit encoded Hebrew fonts available, more then for any other encoding.

2. Available TeX Hebrew fonts do not include latin alphabet, and we can safely map Hebrew glyphs to the `ASCII` positions $(0 - 127)$.

Current definition of the `LHE` encoding supports only Hebrew letters (`\hebalef`–`\hebtav`), but not Hebrew points, such as `\dagesh`, `\qamats`, `\patah`, `\shindot`, etc. We are working now on such addition.

2 The DOCSTRIP modules

The following modules are used in the implementation to direct DOCSTRIP in generating external files:

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[1] The files described in this section have version number v1.3 and were last revised on 2023/08/21.

driver	produce a documentation driver file
HE8enc	produce the encoding definition for CodePage 1255 (`HE8`)
HE8OmegaHebrew	Hebrew font from the Omega project (by ???)
HE8CourierShalom	Hebrew Shalom (Courier) font (by IBM)
HE8HelveticaNarkissTam	Hebrew NarkisTam (Helvetica) (by Zvi Narkis)
HE8TimesNarkissim	Hebrew Narkissim (Times) (by Zvi Narkis)
HE8mfdavid	Hebrew David font (by ???)
HE8mffrank	Hebrew Frank-Ruehl font (by ??)
HE8mffrankthick	Hebrew Frank-Ruehl (thick) font (by ??)
HE8mffrankthin	Hebrew Frank-Ruehl (thin) font (by ??)
HE8mfmiriam	Hebrew Miriam font (by ???)
HE8mfmiriamwide	Hebrew Miriam (wide) font (by ???)
HE8mfnarkistam	Hebrew Narkis Tam font (by ???)
LHEenc	produce the encoding definition for Local Hebrew Encoding (`LHE`)
LHEcmr	make Hebrew default font in `LHE`
LHEcmss	make Hebrew sans-serif font in `LHE`
LHEcmtt	make Hebrew typewriter font in `LHE`
LHEclas	make Hebrew classic font (by Joel M. Hoffman) in `LHE`
LHEshold	make Hebrew shalom old font (by Jonathan Brecher) in `LHE`
LHEshscr	make Hebrew shalom script font (by Jonathan Brecher) in `LHE`
LHEshstk	make Hebrew shalom stick font (by Jonathan Brecher) in `LHE`
LHEfr	make Hebrew frank-ruehl font in `LHE`
LHEcrml	make Hebrew carmel font (by Dr. Samy Zafrany) in `LHE`
LHEredis	make Hebrew redis font (by Prof. Jacques J. Goldberg) in `LHE`
nowarn	option for font definition files, that used to produce "silent" font substitutions without giving warnings
hebfont	create Hebrew font switching commands package

A typical DOCSTRIP command file would then have entries like:

```
\generateFile{lhecmr.fd}{t}{\from{hebfontenc.fdd}{LHEcmr,nowarn}}
```

3 The `LHE`encoding definition file

The Hebrew font encoding `LHE` is based upon the old-code encoding also known as the Israeli Standard SI-960. Many Hebrew TeX fonts from the Hebrew University of Jerusalem are encoded in this encoding. It only uses the lower 128 positions of the font table. As local encoding its name start with the letter 'L'.

First we define the Local Hebrew Encoding and specify a default for the font substitution process for the `LHE` encoding.

```
1 ⟨∗LHEenc⟩
2 \DeclareFontEncoding{LHE}{}{}
3 \DeclareFontSubstitution{LHE}{cmr}{m}{n}
4 ⟨/LHEenc⟩
```

Then we define a few commands in the `LHE` encoding.

```
5 ⟨∗LHEenc⟩
6 \ProvideTextCommand{\textcopyright}{LHE}{\textcircled{\@latin{c}}}
```

2

```
7 \ProvideTextCommand{\textregistered}{LHE}{\textcircled{\scshape%
8                                         \@latin{r}}}
9 \ProvideTextCommand{\texttrademark}{LHE}{\textsuperscript{\@latin{TM}}}
10 ⟨/LHEenc⟩
```

Because not everyone can input Hebrew input text directly from the keyboard
we need to define control sequences for all the Hebrew glyphs in the fonts. In
addition, we want to support many input encodings for Hebrew and to keep the
language definition file (`hebrew.ldf`) independent of the encoding. Therefore, we
exploit the standard LaTeX 2_ε font encoding mechanism to define control sequences
for all the Hebrew glyphs in the fonts in encoding-specific way. The language
definition file uses only the control sequences and doesn't need to check the current
font or input encoding.

In the `LHE` encoding (7-bit encoding) all the Hebrew glyphes reside in the *lower*
half of the font. Currently, only the Hebrew letters are supported. They use the
same positions as the latin small letters in `ASCII` encoding and the position of `‘`.

The symbol `‘` (glyph 96) is used by Hebrew letter *Alef*, so we need to define its
`lccode` to allow hyphenation. All other letters retain the same `lccode`s as their
latin counterparts.

```
11 ⟨+LHEenc⟩\lccode‘‘=‘‘
```

Hebrew letters occupy the positions 96–122 in `LHE` encoding:

```
12 ⟨*LHEenc⟩
13 \DeclareTextSymbol{\hebalef}{LHE}{96}
14 \DeclareTextSymbol{\hebbet}{LHE}{97}
15 \DeclareTextSymbol{\hebgimel}{LHE}{98}
16 \DeclareTextSymbol{\hebdalet}{LHE}{99}
17 \DeclareTextSymbol{\hebhe}{LHE}{100}
18 \DeclareTextSymbol{\hebvav}{LHE}{101}
19 \DeclareTextSymbol{\hebzayin}{LHE}{102}
20 \DeclareTextSymbol{\hebhet}{LHE}{103}
21 \DeclareTextSymbol{\hebtet}{LHE}{104}
22 \DeclareTextSymbol{\hebyod}{LHE}{105}
23 \DeclareTextSymbol{\hebfinalkaf}{LHE}{106}
24 \DeclareTextSymbol{\hebkaf}{LHE}{107}
25 \DeclareTextSymbol{\heblamed}{LHE}{108}
26 \DeclareTextSymbol{\hebfinalmem}{LHE}{109}
27 \DeclareTextSymbol{\hebmem}{LHE}{110}
28 \DeclareTextSymbol{\hebfinalnun}{LHE}{111}
29 \DeclareTextSymbol{\hebnun}{LHE}{112}
30 \DeclareTextSymbol{\hebsamekh}{LHE}{113}
31 \DeclareTextSymbol{\hebayin}{LHE}{114}
32 \DeclareTextSymbol{\hebfinalpe}{LHE}{115}
33 \DeclareTextSymbol{\hebpe}{LHE}{116}
34 \DeclareTextSymbol{\hebfinaltsadi}{LHE}{117}
35 \DeclareTextSymbol{\hebtsadi}{LHE}{118}
36 \DeclareTextSymbol{\hebqof}{LHE}{119}
37 \DeclareTextSymbol{\hebresh}{LHE}{120}
38 \DeclareTextSymbol{\hebshin}{LHE}{121}
39 \DeclareTextSymbol{\hebtav}{LHE}{122}
40 ⟨/LHEenc⟩
```

Letter `\hebsin` is defined as a synonym of `\hebshin`:

```
41 ⟨+LHEenc⟩\let\hebsin=\hebshin
```

4   The font definition files (in LHE encoding)

4.1   Hebrew default font

It uses *Jerusalem* font for regular font, *Old Jaffa* font for italic shape and small-caps, *Dead Sea* font for bold face, and *Tel-Aviv* for bold-italic

```
42 ⟨∗LHEcmr⟩
43 \DeclareFontFamily{LHE}{cmr}{\hyphenchar\font45}
44 \DeclareFontShape{LHE}{cmr}{m}{n}
45       {<-> jerus10 }{}
46 %%%%%% Italicized shape
47 \DeclareFontShape{LHE}{cmr}{m}{it}
48       {<-> oldjaf10 }{}
49 \DeclareFontShape{LHE}{cmr}{m}{sl}
50       {<-> oldjaf10 }{}
51 \DeclareFontShape{LHE}{cmr}{m}{sc}
52       {<-> oldjaf10 }{}
53 %%%%%% Bold extended series
54 \DeclareFontShape{LHE}{cmr}{bx}{n}
55       {<-> deads10 }{}
56 \DeclareFontShape{LHE}{cmr}{b}{n}
57       {<-> deads10 }{}
58 %%%%%% Bold extended (Italic)  series
59 \DeclareFontShape{LHE}{cmr}{bx}{sl}
60       {<-> telav10 }{}
61 \DeclareFontShape{LHE}{cmr}{bx}{it}
62       {<-> telav10 }{}
63 ⟨/LHEcmr⟩
```

4.2   Hebrew sans-serif font

We use *Tel Aviv* font for the Sans family. *Old Jaffa* font is used for italic shape and *Dead Sea* used for bold face.

```
64 ⟨∗LHEcmss⟩
65 \DeclareFontFamily{LHE}{cmss}{\hyphenchar\font45}
66 \DeclareFontShape{LHE}{cmss}{m}{n}
67       {<-> telav10 }{}
68 %%%%%% Font/shape undefined, therefore substituted
69 \DeclareFontShape{LHE}{cmss}{m}{sc}
70 ⟨-nowarn⟩   {<->sub * cmss/m/n}{}
71 ⟨+nowarn⟩   {<->ssub * cmss/m/n}{}
72 %%%%%% Italicized shape
73 \DeclareFontShape{LHE}{cmss}{m}{it}
74       {<-> oldjaf10 }{}
75 %%%%%% Font/shape undefined, therefore substituted
76 \DeclareFontShape{LHE}{cmss}{m}{sl}
77 ⟨-nowarn⟩   {<->sub * cmss/m/it}{}
78 ⟨+nowarn⟩   {<->ssub * cmss/m/it}{}
79 %%%%%% Bold extended series
80 \DeclareFontShape{LHE}{cmss}{bx}{n}
81       {<-> deads10 }{}
82 %%%%%% Font/shape undefined, therefore substituted
83 \DeclareFontShape{LHE}{cmss}{b}{n}
```

```
 84 ⟨-nowarn⟩  {<->sub * cmss/bx/n}{}
 85 ⟨+nowarn⟩  {<->ssub * cmss/bx/n}{}
 86 %%%%%% Font/shape undefined, therefore substituted
 87 \DeclareFontShape{LHE}{cmss}{bx}{sl}
 88 ⟨-nowarn⟩  {<->sub * cmss/bx/n}{}
 89 ⟨+nowarn⟩  {<->ssub * cmss/bx/n}{}
 90 %%%%%% Font/shape undefined, therefore substituted
 91 \DeclareFontShape{LHE}{cmss}{bx}{it}
 92 ⟨-nowarn⟩  {<->sub * cmss/bx/n}{}
 93 ⟨+nowarn⟩  {<->ssub * cmss/bx/n}{}
 94 ⟨/LHEcmss⟩
```

4.3   Hebrew typewriter font

We use *Tel Aviv* font as the typewriter font. *Old Jaffa* font is used for italic shape
and *Dead Sea* used for bold face.

```
 95 ⟨*LHEcmtt⟩
 96 \DeclareFontFamily{LHE}{cmtt}{\hyphenchar \font\m@ne}
 97 \DeclareFontShape{LHE}{cmtt}{m}{n}
 98      {<-> telav10 }{}
 99 %%%%%% Font/shape undefined, therefore substituted
100 \DeclareFontShape{LHE}{cmtt}{m}{sc}
101 ⟨-nowarn⟩  {<->sub * cmtt/m/n}{}
102 ⟨+nowarn⟩  {<->ssub * cmtt/m/n}{}
103 %%%%%% Italicized shape
104 \DeclareFontShape{LHE}{cmtt}{m}{it}
105      {<-> oldjaf10 }{}
106 %%%%%% Font/shape undefined, therefore substituted
107 \DeclareFontShape{LHE}{cmtt}{m}{sl}
108 ⟨-nowarn⟩  {<->sub * cmtt/m/it}{}
109 ⟨+nowarn⟩  {<->ssub * cmtt/m/it}{}
110 %%%%%% Bold extended series
111 \DeclareFontShape{LHE}{cmtt}{bx}{n}
112      {<-> deads10 }{}
113 %%%%%% Font/shape undefined, therefore substituted
114 \DeclareFontShape{LHE}{cmtt}{bx}{it}
115 ⟨-nowarn⟩  {<->sub * cmtt/bx/n}{}
116 ⟨+nowarn⟩  {<->ssub * cmtt/bx/n}{}
117 ⟨/LHEcmtt⟩
```

4.4   Hebrew classic font

Hclassic and *hcaption* fonts are distributed freely from CTAN sites and copy-
righted by Joel M. Hoffman, of 19 Hillcrest Lane, Rye, NY 10580 USA, e-mail:
72700.402@compuserve.com.

Hclassic is a modernized Classical Hebrew font (in the same way that Knuth's
cmr family is a modernized Roman font — but his fonts are much nicer). Hcaption
is a slanted version of hclassic font. Both fonts contain all of the Hebrew conso-
nants, the (rarely used) ligature *alef-lamed* and two versions of the letter *ayin* for
use with and without vowels. Hclassic also contains all of the vowels found in
Hebrew, a symbol for *meteg*, and dots for use as a *dagesh* and for differentiating
shin and *sin* letters.

Currently, only the Hebrew consonants (*hebalef – hebtav*) from these fonts are supported by LaTeX 2$_\varepsilon$, however one can use vowels and dots directly with PLAIN TeX macros. We are working on generic vowels and dots support for LaTeX 2$_\varepsilon$.

```
118 ⟨∗LHEclas⟩
119 \DeclareFontFamily{LHE}{clas}{}
120 \DeclareFontShape{LHE}{clas}{m}{n}
121     {<-> s * [0.83345] hclassic }{}
122 %%%%%% Font/shape undefined, therefore substituted
123 \DeclareFontShape{LHE}{clas}{m}{sc}
124 ⟨-nowarn⟩   {<->sub * clas/m/n}{}
125 ⟨+nowarn⟩   {<->ssub * clas/m/n}{}
126 %%%%%% Slanted shape
127 \DeclareFontShape{LHE}{clas}{m}{sl}
128     {<-> s * [0.69389] hcaption }{}
129 %%%%%% Font/shape undefined, therefore substituted
130 \DeclareFontShape{LHE}{clas}{m}{it}
131 ⟨-nowarn⟩   {<->sub * clas/m/sl}{}
132 ⟨+nowarn⟩   {<->ssub * clas/m/sl}{}
133 ⟨/LHEclas⟩
```

4.5   Hebrew shalom fonts

All three shalom fonts (*ShalomScript10*, *ShalomStick10* and *ShalomOldStyle10*) have been created by Jonathan Brecher, of 9 Skyview Road, Lexington, MA 02173-1112 USA, e-mail: `brecher@husc.harvard.edu`.

All shalom fonts have been written in POSTSCRIPT via Fontographer on a Mac. The fonts have been converted to METAFONT by Rama Porrat (e-mail: `rama@cc.huji.ac.il`), using the utility typo, a font editor + converter between font formats (a commercial product). `ShalomScript10.mf` is the METAFONT equivalent of `ShalomScript.ps`, `ShalomStick10.mf` came from `ShalomStick.ps` and `ShalomOldStyle10.mf` originated in `ShalomOldStyle.ps`.

The fonts differ in the letters' style. ShalomScript10 contains hand writing Hebrew letters; ShalomStick10 contains sans-serif letters, and ShalomOldStyle10 contains old style letters. All three fonts contain vowels and dots (nikud). While converting to METAFONT, letters and symbols within the fonts have been arranged so as to get a usable font for writing Hebrew documents in TeX or LaTeX, with as well as without vowels.

Currently, only the Hebrew consonants (*hebalef – hebtav*) from these fonts are supported by LaTeX 2$_\varepsilon$, however one can use vowels and dots directly with PLAIN TeX macros. We are working on generic vowels and dots support for LaTeX 2$_\varepsilon$.

```
134 ⟨∗LHEshold⟩
135 \DeclareFontFamily{LHE}{shold}{}
136 \DeclareFontShape{LHE}{shold}{m}{n}
137     {<-> shold10 }{}
138 ⟨/LHEshold⟩
139 ⟨∗LHEshscr⟩
140 \DeclareFontFamily{LHE}{shscr}{}
141 \DeclareFontShape{LHE}{shscr}{m}{n}
142     {<-> shscr10 }{}
```

```
143 ⟨/LHEshscr⟩
144 ⟨∗LHEshstk⟩
145 \DeclareFontFamily{LHE}{shstk}{}
146 \DeclareFontShape{LHE}{shstk}{m}{n}
147        {<-> shstk10 }{}
148 ⟨/LHEshstk⟩
```

4.6   Hebrew frank-ruehl font

Frank Ruehl font was written in METAFONT and includes three shapes: regular, bold extaneded and slanted.

```
149 ⟨∗LHEfr⟩
150 \DeclareFontFamily{LHE}{fr}{}
151 \DeclareFontShape{LHE}{fr}{m}{n}
152        {<-> fr }{}
153 %%%%%% Font/shape undefined, therefore substituted
154 \DeclareFontShape{LHE}{fr}{m}{sc}
155 ⟨-nowarn⟩   {<->sub * fr/m/n}{}
156 ⟨+nowarn⟩   {<->ssub * fr/m/n}{}
157 %%%%%% Slanted shape
158 \DeclareFontShape{LHE}{fr}{m}{sl}
159        {<-> frsl }{}
160 %%%%%% Font/shape undefined, therefore substituted
161 \DeclareFontShape{LHE}{fr}{m}{it}
162 ⟨-nowarn⟩   {<->sub * fr/m/sl}{}
163 ⟨+nowarn⟩   {<->ssub * fr/m/sl}{}
164 %%%%%% Bold extended series
165 \DeclareFontShape{LHE}{fr}{bx}{n}
166        {<-> frbx }{}
167 %%%%%% Font/shape undefined, therefore substituted
168 \DeclareFontShape{LHE}{fr}{b}{n}
169 ⟨-nowarn⟩   {<->sub * fr/bx/n}{}
170 ⟨+nowarn⟩   {<->ssub * fr/bx/n}{}
171 %%%%%% Font/shape undefined, therefore substituted
172 \DeclareFontShape{LHE}{fr}{bx}{sl}
173 ⟨-nowarn⟩   {<->sub * fr/bx/n}{}
174 ⟨+nowarn⟩   {<->ssub * fr/bx/n}{}
175 %%%%%% Font/shape undefined, therefore substituted
176 \DeclareFontShape{LHE}{fr}{bx}{it}
177 ⟨-nowarn⟩   {<->sub * fr/bx/n}{}
178 ⟨+nowarn⟩   {<->ssub * fr/bx/n}{}
179 ⟨/LHEfr⟩
```

4.7   Hebrew carmel font

Carmel font includes regular and slanted shapes. It was created by Dr. Samy Zafrany of the Technion, Haifa, Israel with the intention of making nice fonts for headers and emphasized text.

```
180 ⟨∗LHEcrml⟩
181 \DeclareFontFamily{LHE}{crml}{}
182 \DeclareFontShape{LHE}{crml}{m}{n}
183        {<-> crml10 }{}
184 %%%%%% Font/shape undefined, therefore substituted
```

```
185 \DeclareFontShape{LHE}{crml}{m}{sc}
186 ⟨-nowarn⟩  {<->sub * crml/m/n}{}
187 ⟨+nowarn⟩  {<->ssub * crml/m/n}{}
188 %%%%%% Slanted shape
189 \DeclareFontShape{LHE}{crml}{m}{sl}
190        {<-> crmlsl10 }{}
191 %%%%%% Font/shape undefined, therefore substituted
192 \DeclareFontShape{LHE}{crml}{m}{it}
193 ⟨-nowarn⟩  {<->sub * crml/m/sl}{}
194 ⟨+nowarn⟩  {<->ssub * crml/m/sl}{}
195 ⟨/LHEcrml⟩
```

4.8   Hebrew redis font

Redis font has been created by Prof. Jacques J. Goldberg of the Technion. Haifa, Israel. The font is available in regular, slanted and bold extanded shapes. This font contains a full set of Hebrew letters in a "sans-serif vectorized" style, and selected punctuation.

```
196 ⟨∗LHEredis⟩
197 \DeclareFontFamily{LHE}{redis}{}
198 \DeclareFontShape{LHE}{redis}{m}{n}{%
199    <5> <6> redis7
200    <7> <8> <9> <10> <12> gen * redis
201    <10.95> redis10
202    <14.4> redis12
203    <17.28> <20.74> <24.88> redis17}{}
204 %%%%%% Font/shape undefined, therefore substituted
205 \DeclareFontShape{LHE}{redis}{m}{sc}
206 ⟨-nowarn⟩  {<->sub * redis/m/n}{}
207 ⟨+nowarn⟩  {<->ssub * redis/m/n}{}
208 %%%%%% Slanted shape
209 \DeclareFontShape{LHE}{redis}{m}{sl}{%
210    <5> <6> <7> rediss8
211    <8> <9> <10> <12> gen * rediss
212    <10.95> rediss10
213    <14.4> <17.28> <20.74> <24.88> rediss12}{}
214 %%%%%% Font/shape undefined, therefore substituted
215 \DeclareFontShape{LHE}{redis}{m}{it}
216 ⟨-nowarn⟩  {<->sub * redis/m/sl}{}
217 ⟨+nowarn⟩  {<->ssub * redis/m/sl}{}
218 %%%%%% Bold extended series
219 \DeclareFontShape{LHE}{redis}{bx}{n}{%
220    <5> <6> <7> <8> <9> <10> <10.95> <12>
221    <14.4> <17.28> <20.74> <24.88> redisb10}{}
222 %%%%%% Font/shape undefined, therefore substituted
223 \DeclareFontShape{LHE}{redis}{b}{n}
224 ⟨-nowarn⟩  {<->sub * redis/bx/n}{}
225 ⟨+nowarn⟩  {<->ssub * redis/bx/n}{}
226 %%%%%% Font/shape undefined, therefore substituted
227 \DeclareFontShape{LHE}{redis}{bx}{sl}
228 ⟨-nowarn⟩  {<->sub * redis/bx/n}{}
229 ⟨+nowarn⟩  {<->ssub * redis/bx/n}{}
230 %%%%%% Font/shape undefined, therefore substituted
```

```
231 \DeclareFontShape{LHE}{redis}{bx}{it}
232 ⟨-nowarn⟩    {<->sub * redis/bx/n}{}
233 ⟨+nowarn⟩    {<->ssub * redis/bx/n}{}
234 ⟨/LHEredis⟩
```

5   The HE8encoding definition file

The Hebrew font encodings HE8 and NHE8 are based upon an extention by Microsoft to the ISO-8859-8 standard. This is an 8bit encoding. The extentions include hebrew points ("Nikud").

First we define the NHE8 encoding;

```
235 ⟨∗NHE8enc⟩
236 \DeclareFontEncoding{NHE8}{}{}
237 \DeclareFontSubstitution{NHE8}{cmr}{m}{n}
238
239 \DeclareTextSymbol{\quotesinglbase}{NHE8}{13}
240 \DeclareTextSymbol{\textquoteleft}{NHE8}{14}
241 \DeclareTextSymbol{\textquoteright}{NHE8}{39}
242 \DeclareTextSymbol{\textquotedblleft}{NHE8}{16}
243 \DeclareTextSymbol{\textquotedblright}{NHE8}{17}
244 \DeclareTextSymbol{\quotedblbase}{NHE8}{18}
245 \DeclareTextSymbol{\textquotedbl}{NHE8}{34}
246 \DeclareTextSymbol{\textquotesingle}{NHE8}{39}
247 \DeclareTextSymbol{\textdollar}{NHE8}{36}
248 \DeclareTextSymbol{\textgreater}{NHE8}{60}
249 \DeclareTextSymbol{\textless}{NHE8}{62}
250 \DeclareTextSymbol{\textbackslash}{NHE8}{92}
251 \DeclareTextSymbol{\textasciicircum}{NHE8}{94}
252 \DeclareTextSymbol{\textbraceleft}{NHE8}{123}
253 \DeclareTextSymbol{\textbraceright}{NHE8}{125}
254 \DeclareTextSymbol{\textasciitilde}{NHE8}{126}
255 \DeclareTextSymbol{\shekel}{NHE8}{165}
256 \DeclareTextSymbol{\pounds}{NHE8}{191}
257 \DeclareTextSymbol{\sheva}{NHE8}{192}
258 \DeclareTextSymbol{\hatafsegol}{NHE8}{193}
259 \DeclareTextSymbol{\hatafpatah}{NHE8}{194}
260 \DeclareTextSymbol{\hatafqamats}{NHE8}{195}
261 \DeclareTextSymbol{\hiriq}{NHE8}{196}
262 \DeclareTextSymbol{\tsere}{NHE8}{197}
263 \DeclareTextSymbol{\segol}{NHE8}{198}
264 \DeclareTextSymbol{\patah}{NHE8}{199}
265 \DeclareTextSymbol{\qamats}{NHE8}{200}
266 \DeclareTextSymbol{\holam}{NHE8}{201}
267 \DeclareTextSymbol{\qubuts}{NHE8}{203}
268 \DeclareTextSymbol{\dagesh}{NHE8}{204}
269 \DeclareTextSymbol{\meteg}{NHE8}{205}
270 \DeclareTextSymbol{\maqaf}{NHE8}{206}
271 \DeclareTextSymbol{\rafe}{NHE8}{207}
272 \DeclareTextSymbol{\paseq}{NHE8}{208}
273 \DeclareTextSymbol{\shindot}{NHE8}{209}
274 \DeclareTextSymbol{\sindot}{NHE8}{210}
275 \DeclareTextSymbol{\sofpasuq}{NHE8}{211}
```

```
276 \DeclareTextSymbol{\doublevav}{NHE8}{212}
277 \DeclareTextSymbol{\vavyod}{NHE8}{213}
278 \DeclareTextSymbol{\doubleyod}{NHE8}{214}
279 \DeclareTextSymbol{\hebgeresh}{NHE8}{215}
280 \DeclareTextSymbol{\hebgershayim}{NHE8}{216}
281 \DeclareTextSymbol{\hebalef}{NHE8}{224}
282 \DeclareTextSymbol{\hebbet}{NHE8}{225}
283 \DeclareTextSymbol{\hebgimel}{NHE8}{226}
284 \DeclareTextSymbol{\hebdalet}{NHE8}{227}
285 \DeclareTextSymbol{\hebhe}{NHE8}{228}
286 \DeclareTextSymbol{\hebvav}{NHE8}{229}
287 \DeclareTextSymbol{\hebzayin}{NHE8}{230}
288 \DeclareTextSymbol{\hebhet}{NHE8}{231}
289 \DeclareTextSymbol{\hebtet}{NHE8}{232}
290 \DeclareTextSymbol{\hebyod}{NHE8}{233}
291 \DeclareTextSymbol{\hebfinalkaf}{NHE8}{234}
292 \DeclareTextSymbol{\hebkaf}{NHE8}{235}
293 \DeclareTextSymbol{\heblamed}{NHE8}{236}
294 \DeclareTextSymbol{\hebfinalmem}{NHE8}{237}
295 \DeclareTextSymbol{\hebmem}{NHE8}{238}
296 \DeclareTextSymbol{\hebfinalnun}{NHE8}{239}
297 \DeclareTextSymbol{\hebnun}{NHE8}{240}
298 \DeclareTextSymbol{\hebsamekh}{NHE8}{241}
299 \DeclareTextSymbol{\hebayin}{NHE8}{242}
300 \DeclareTextSymbol{\hebfinalpe}{NHE8}{243}
301 \DeclareTextSymbol{\hebpe}{NHE8}{244}
302 \DeclareTextSymbol{\hebfinaltsadi}{NHE8}{245}
303 \DeclareTextSymbol{\hebtsadi}{NHE8}{246}
304 \DeclareTextSymbol{\hebqof}{NHE8}{247}
305 \DeclareTextSymbol{\hebresh}{NHE8}{248}
306 \DeclareTextSymbol{\hebshin}{NHE8}{249}
307 \DeclareTextSymbol{\hebtav}{NHE8}{250}
308 \let\hebsin=\hebshin
309 ⟨/NHE8enc⟩
```

Now the definition of HE8;

```
310 ⟨*HE8enc⟩
311 \DeclareFontEncoding{HE8}{}{}
312 \DeclareFontSubstitution{HE8}{cmr}{m}{n}
313 ⟨/HE8enc⟩
```

Then we define a few commands in the HE8 encoding.

```
314 ⟨*HE8enc⟩
315 \ProvideTextCommand{\textcopyright}{HE8}{\textcircled{\@latin{c}}}
316 \ProvideTextCommand{\textregistered}{HE8}{\textcircled{\scshape%
317                                          \@latin{r}}}
318 \ProvideTextCommand{\texttrademark}{HE8}{\textsuperscript{\@latin{TM}}}
319 ⟨/HE8enc⟩
```

5.1   CHECK HERE FOR HE8 UPDATES

Because not everyone can input Hebrew input text directly from the keyboard we
need to define control sequences for all the Hebrew glyphs in the fonts. In addition,
we want to support many input encodings for Hebrew and to keep the language

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definition file (`hebrew.ldf`) independent of the encoding. Therefore, we exploit the standard LaTeX 2_ε font encoding mechanism to define control sequences for all the Hebrew glyphs in the fonts in encoding-specific way. The language definition file uses only the control sequences and doesn't need to check the current font or input encoding.

In the `LHE` encoding (7-bit encoding) all the Hebrew glyphes reside in the *lower* half of the font. Currently, only the Hebrew letters are supported. They use the same positions as the latin small letters in `ASCII` encoding and the position of '.

Some general symbols:

```
320 ⟨*HE8enc⟩
321 \ProvideTextCommand{\textcopyright}{HE8}{\textcircled{\@latin{c}}}
322 \ProvideTextCommand{\textregistered}{HE8}{\textcircled{\scshape%
323                                         \@latin{r}}}
324 \ProvideTextCommand{\texttrademark}{HE8}{\textsuperscript{\@latin{TM}}}
325 ⟨/HE8enc⟩
```

The hebrew points:

```
326 ⟨*HE8enc⟩
327 \DeclareTextSymbol{\sheva}{HE8}{192}
328 \DeclareTextSymbol{\hatafsegol}{HE8}{193}
329 \DeclareTextSymbol{\hatafpatah}{HE8}{194}
330 \DeclareTextSymbol{\hatafqamats}{HE8}{195}
331 \DeclareTextSymbol{\hiriq}{HE8}{196}
332 \DeclareTextSymbol{\tsere}{HE8}{197}
333 \DeclareTextSymbol{\segol}{HE8}{198}
334 \DeclareTextSymbol{\patah}{HE8}{199}
335 \DeclareTextSymbol{\qamats}{HE8}{200}
336 \DeclareTextSymbol{\holam}{HE8}{201}
337 \DeclareTextSymbol{\qubuts}{HE8}{203}
338 \DeclareTextSymbol{\dagesh}{HE8}{204}
339 \DeclareTextSymbol{\meteg}{HE8}{205}
340 \DeclareTextSymbol{\maqaf}{HE8}{206}
341 \DeclareTextSymbol{\rafe}{HE8}{207}
342 \DeclareTextSymbol{\paseq}{HE8}{208}
343 \DeclareTextSymbol{\shindot}{HE8}{209}
344 \DeclareTextSymbol{\sindot}{HE8}{210}
345 \DeclareTextSymbol{\sofpasuq}{HE8}{211}
346 \DeclareTextSymbol{\doublevav}{HE8}{212}
347 \DeclareTextSymbol{\vavyod}{HE8}{213}
348 \DeclareTextSymbol{\doubleyod}{HE8}{214}
349 \DeclareTextSymbol{\hebgeresh}{HE8}{215}
350 \DeclareTextSymbol{\hebgershayim}{HE8}{216}
351 ⟨/HE8enc⟩
```

Hebrew letters occupy the positions 224–250 in `HE8` encoding [WHAT ABOUT OTHER MARKS]:

```
352 ⟨*HE8enc⟩
353 \DeclareTextSymbol{\hebalef}{HE8}{224}
354 \DeclareTextSymbol{\hebbet}{HE8}{225}
355 \DeclareTextSymbol{\hebgimel}{HE8}{226}
356 \DeclareTextSymbol{\hebdalet}{HE8}{227}
357 \DeclareTextSymbol{\hebhe}{HE8}{228}
358 \DeclareTextSymbol{\hebvav}{HE8}{229}
359 \DeclareTextSymbol{\hebzayin}{HE8}{230}
```

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```
360 \DeclareTextSymbol{\hebhet}{HE8}{231}
361 \DeclareTextSymbol{\hebtet}{HE8}{232}
362 \DeclareTextSymbol{\hebyod}{HE8}{233}
363 \DeclareTextSymbol{\hebfinalkaf}{HE8}{234}
364 \DeclareTextSymbol{\hebkaf}{HE8}{235}
365 \DeclareTextSymbol{\heblamed}{HE8}{236}
366 \DeclareTextSymbol{\hebfinalmem}{HE8}{237}
367 \DeclareTextSymbol{\hebmem}{HE8}{238}
368 \DeclareTextSymbol{\hebfinalnun}{HE8}{239}
369 \DeclareTextSymbol{\hebnun}{HE8}{240}
370 \DeclareTextSymbol{\hebsamekh}{HE8}{241}
371 \DeclareTextSymbol{\hebayin}{HE8}{242}
372 \DeclareTextSymbol{\hebfinalpe}{HE8}{243}
373 \DeclareTextSymbol{\hebpe}{HE8}{244}
374 \DeclareTextSymbol{\hebfinaltsadi}{HE8}{245}
375 \DeclareTextSymbol{\hebtsadi}{HE8}{246}
376 \DeclareTextSymbol{\hebqof}{HE8}{247}
377 \DeclareTextSymbol{\hebresh}{HE8}{248}
378 \DeclareTextSymbol{\hebshin}{HE8}{249}
379 \DeclareTextSymbol{\hebtav}{HE8}{250}
380 ⟨/HE8enc⟩
```

Letter `\hebsin` is defined as a synonym of `\hebshin`:

```
381 ⟨+HE8enc⟩\let\hebsin=\hebshin
```

6 The font definition files (in HE8 encoding)

more definition files can be found in the culmus package

6.1 8Bit OmegaHebrew font

OmegaHebrew is a serif hebrew font created by the omega project [FILL IN CREDITS] [FILL IN GENERAL SHAPE DESCRIPTION] shapes: [FILL IN]

```
382 ⟨*HE8OmegaHebrew⟩
383 \def\OmegaHebrewscale{0.9}
384 \DeclareFontFamily{HE8}{OmegaHebrew}{\hyphenchar\font45}
385 \DeclareFontShape{HE8}{OmegaHebrew}{m}{n}{<-> [\OmegaHebrewscale] OmegaHebrew }{}
386 ⟨/HE8OmegaHebrew⟩
```

6.2 Hebrew font switching commands

The hebfont package defines a number of high-level commands (all starting with `\text..` similar to the standard LaTeX 2_ε font-change commands, for example `\textbf`) that have one argument and typeset this argument in the requested way. These commands are defined for all available Hebrew fonts defined above and change only font parameters but not direction.

For example, to use Hebrew Classic font family, the following sequence of commands should be included in a LaTeX 2_ε document:

```
\sethebrew
\textclas{Hebrew text printed with Classic fonts}
```

or to use Hebrew with Classic fonts locally:

Command	Corresponds to	Font family
\textjm{..}	\rmfamily	Jerusalem font
\textds{..}	\bfseries	Dead Sea font
\textoj{..}	\itshape	Old Jaffa font
	\slshape	
	\emph	
\textta{..}	\sffamily	Tel-Aviv font
	\ttfamily	
\textcrml{..}	\fontfamily{crml}	Carmel fonts
\textfr{..}	\fontfamily{fr}	Frank-Ruehl fonts
\textredis{..}	\fontfamily{redis}	Redis fonts
\textclas{..}	\fontfamily{redis}	Classic fonts
\textshold{..}	\fontfamily{shold}	Shalom Old Style font
\textshscr{..}	\fontfamily{shscr}	Shalom Script font
\textshstk{..}	\fontfamily{shstk}	Shalom Stick font

Table 1: Hebrew font-change commands with arguments

The font change commands provided here all start with `\text..` to emphasize that they are for use in normal text and to be easily memorable.

    \R{\textclas{Hebrew text printed with Classic fonts}}

We declare LaTeX 2$_\varepsilon$ font commands, e.g. `\textjm{...}` for all available fonts. Table 1 shows the meanings of all these new high-level commands.

\textjm Switches to *Jerusalem* font which is default regular Hebrew font ("roman" family). Commands `\textrm{...}` and old-style `{\rm ...}` will produce the same result.

```
387 ⟨∗hebfont⟩
388 \def\ivritex@tmp{HE8}
389 \ifx\ivritex@tmp\HeblatexEncoding %
390   % compatibility with hebfonts:
391   \DeclareTextFontCommand{\textjm}{\rmfamily\selectfont}
392   \DeclareTextFontCommand{\textds}{\bfseries\selectfont}
393   \DeclareTextFontCommand{\textoj}{\itshape\selectfont}
394   \DeclareTextFontCommand{\textta}{\sffamily\selectfont}
395
396   % an attempt to give some replacements to the original hebfonts:
397   %
398   \DeclareTextFontCommand{\textcrml}{\fontfamily{david}\selectfont}
399   \DeclareTextFontCommand{\textfr}{\fontfamily{frank}\selectfont}
400   \DeclareTextFontCommand{\textredis}{\fontfamily{aharoni}\selectfont}
401   \DeclareTextFontCommand{\textclas}{\fontfamily{drugulin}\selectfont}
402   \DeclareTextFontCommand{\textshold}{\fontfamily{frank}\selectfont}
403   \DeclareTextFontCommand{\textshscr}{\fontfamily{yad}\selectfont}
404   \DeclareTextFontCommand{\textshstk}{\fontfamily{aharoni}\selectfont}
405   % note that redis is larger than shstk
406
```

```
407
408    \DeclareTextFontCommand{\textaha}{\fontfamily{aharoni}\selectfont}
409    \DeclareTextFontCommand{\textdav}{\fontfamily{david}\selectfont}
410    \DeclareTextFontCommand{\textdru}{\fontfamily{drugulin}\selectfont}
411    \DeclareTextFontCommand{\textel} {\fontfamily{ellinia}\selectfont}
412    % \textfr is already declared above
413    \DeclareTextFontCommand{\textmir}{\fontfamily{miriam}\selectfont}
414    \DeclareTextFontCommand{\textna} {\fontfamily{nachlieli}\selectfont}
415    % is this necessary:
416    \DeclareTextFontCommand{\textyad} {\fontfamily{yad}\selectfont}
417
418 \else%
419 \DeclareTextFontCommand{\textjm}{\rmfamily\selectfont}
```

\textds Switches to *Dead Sea* font which is default bold font in Hebrew. Commands
\textbf{...} and old-style {\bf ...} will produce the same result.

```
420 \DeclareTextFontCommand{\textds}{\bfseries\selectfont}
```

\textoj Switches to *Old Jaffa* font which is default italic font in Hebrew. Commands
\textit{...}, \textsl{...}, \emph{...} and old-style {\it ...} or {\em ...}
will produce the same result.

```
421 \DeclareTextFontCommand{\textoj}{\itshape\selectfont}
```

\textta Switches to *Tel-Aviv* font which is default sans-serif font in Hebrew. Commands
\textsf{...}, \texttt{...} and old-style {\sf ...} or {\tt ...} will produce
the same result (because sans-serif is used as typewriter font when in Hebrew
mode).

```
422 \DeclareTextFontCommand{\textta}{\sffamily\selectfont}
```

\textcrml Switches to *Carmel* font. Regular and slanted variants of carmel font will be used..

```
423 \DeclareTextFontCommand{\textcrml}{\fontfamily{crml}\selectfont}
```

\textfr Switches to *Frank-Ruehl* font family. Regular, bold and slanted frank ruehl fonts
will be used.

```
424 \DeclareTextFontCommand{\textfr}{\fontfamily{fr}\selectfont}
```

\textredis Switches to *Redis* font family. Regular, bold and slanted redis fonts of various
sizes will be used.

```
425 \DeclareTextFontCommand{\textredis}{\fontfamily{redis}\selectfont}
```

\textclas Switches to *Classic* font family. The normal font will be hclassic and slanted —
hcaption.

```
426 \DeclareTextFontCommand{\textclas}{\fontfamily{clas}\selectfont}
```

\textshold Switches to *Shalom Old Style* font.

```
427 \DeclareTextFontCommand{\textshold}{\fontfamily{shold}\selectfont}
```

\textshscr Switches to *Shalom Script* font.

```
428 \DeclareTextFontCommand{\textshscr}{\fontfamily{shscr}\selectfont}
```

\textshstk Switches to *Shalom Stick* font.

```
429 \DeclareTextFontCommand{\textshstk}{\fontfamily{shstk}\selectfont}
430 \fi
```

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Old font command	Font name	Comment
{\jm ..}	Jerusalem	default regular (roman) font
{\ds ..}	Dead Sea	default bold font
{\oj ..}	Old Jaffa	default italic and slanted font
		used also to emphasize text
{\ta ..}	Tel-Aviv	default sans-serif and typewriter font

Table 2: Hebrew old font-change commands for compatibility mode

Finally, for backward compatibility with LaTeX2.09. four old font commands, e.g. {\jm ...} are defined too (see Table 2).

```
431 \if@compatibility
432   \DeclareOldFontCommand{\jm}{\normalfont\rmfamily\selectfont}%
433                          {\@nomath\jm}
434   \DeclareOldFontCommand{\ds}{\normalfont\bfseries\selectfont}%
435                          {\@nomath\ds}
436   \DeclareOldFontCommand{\oj}{\normalfont\itshape\selectfont}%
437                          {\@nomath\oj}
438   \DeclareOldFontCommand{\ta}{\normalfont\sffamily\selectfont}%
439                          {\@nomath\ta}
440 \fi
441 ⟨/hebfont⟩
```