

高亮 $\text{T}_{\text{E}}\text{X}$ 和 $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}3$ 代码——使用 `texhigh` 宏包

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`texhigh` 宏包是专用来高亮 $\text{T}_{\text{E}}\text{X}$ 文件的宏包。基于由 Rust 编写的命令行工具 `texhigh`¹，处理 1.2M 左右（37000 余行）的 `expl3-code.tex` 只需不到 0.4s，处理速度是 `minted` 宏包使用的 `pygmentize` 的 6 倍左右。对于普通大小的 $\text{T}_{\text{E}}\text{X}$ 代码，处理它们所需的时间相比于 $\text{T}_{\text{E}}\text{X}$ 文件本身编译所需的时间，已经可以忽略不计。

`texhigh` 主要是在 $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ 中为 `texhigh` 命令行工具提供交互接口。这要求在编译 $\text{T}_{\text{E}}\text{X}$ 文件时启用 `--shell-escape`。

`texhigh` 提供 `\texhighverb`、`\texhighfile`、`\texhighinput` 这几个命令以及一个 `texhigh` 环境用于高亮 $\text{T}_{\text{E}}\text{X}$ 代码。

`texhigh` 还有很强的可配置性。

为了实现处理 $\text{T}_{\text{E}}\text{X}$ 源码与输出结果的分离，`texhigh` 使用“类型”和“类别”来区分不同的记号。字符和控制序列是不同的“类型”，控制序列之间可以有不同的“类别”，例如是原语、 $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}3$ 函数等。类型不可改变，而“类别”可以自由修改。

每个类型都有一些命令用于更改它们的“类别”的显示效果，如，对于一个控制序列，可以使用 `\THSetClassCS` 改变显示效果。可以为它们设置前景色、背景色，甚至渐变色和底纹等等。实际上普通文字可以显示成什么效果，它们就可以做到同样的效果。具体修改方式可以参考文末 `basic` 样式的源码。

`texhigh` 利用 `tikz` 实现了渐变和底纹效果，同时也可直接集成到 `tcolorbox` 宏包中。只需要在加载 `texhigh` 之前加载这几个宏包。

```
\usepackage{tikz}
\usepackage{tcolorbox}
\usepackage{texhigh}
\tcbset{listing engine=texhigh} % 使用这个即可切换至 texhigh
若使用 xeCJK，即在 XeLaTeX 中使用 ctex，最好设置
\SetKeys[texhigh]{
```

代码 1

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¹<https://github.com/Sophanatprime/texhigh-rs>

```
font=\ttfamily\XeCJKsetup{CJKecglue={\hskip 0pt plus 0.08\baselineskip}}
```

这样可避免在显示代码时中英文之间出现不必要的空格。

识别行内数学公式：

```
\texhighverb!公式 $ \int_a^b x^2 dx = \frac{1}{3} x^3 |_a^b $!。
```

代码 2

```
公式 $ \int_a^b x^2 dx = \frac{1}{3} x^3 |_a^b $ 。
```

渐变：

```
\texhighverb[style=tikz.gradient, use-ctab=latex3, ↵  
↵ config-file=config.cfg]|\sys_get_shell:nnNTF|
```

代码 3

```
\sys_get_shell:nnNTF
```

底纹：

```
\makeatletter  
\def\myshadetext#1#2{\texhigh@shadetext{#1}{\bfseries #2}}  
\makeatother  
\LARGE  
% 在加载 texhigh 之前加载 tikz 宏包!  
% 使用 grass.png 作为文字底纹, 依赖 tikz 的 fill.image 库, 会自动加载这个库。  
\texhighverb[use-ctab=latex3, this-cs=\myshadetext{fill stretch ↵  
↵ image=grass.png}]  
|\sys_get_shell:nnNTF|  
}
```

代码 4

```
\sys_get_shell:nnNTF
```

中文命令识别 (T_EX 原语带有下划线)：

```
\begin{texhigh}[output=\jobname.texhigh, use-ctab=cjk]  
  \def\好好好{中文 Good}  
  \好好好\relax  
\end{texhigh}
```

代码 5

```
\def\好好好{中文 Good}  
\好好好\relax
```

```
%%% 以下输出本文源码 %%%  
% !TEX program=xelatex
```

```
% !TEX options=-synctex=1 -shell-escape -interaction=nonstopmode ←
↪ -file-line-error "%DOC%"
\documentclass[zihao=-4]{ctexart}
\usepackage[hmargin=2cm,vmargin=2.4cm]{geometry}
\usepackage[many]{tcolorbox}
\usepackage[color,tikz]{texhigh}
\SetKeys[texhigh]{
  font=\ttfamily\xeCJKsetup{CJKecglue={\hskip 0pt plus 0.08\baselineskip}}
}
\tcbset{listing engine=texhigh}
\newcounter{example}
\newtcblisting[use counter=example, number format=\arabic]
  {examcode}[2][{}]{listing and text,
  title=代码 \thetcbcounter, enhanced,
  comment={#2},
  sharp corners=downhill, arc=12pt, %skin=bicolor,
  fontupper=\linespread{1}\selectfont, left=6pt,
  colback=blue!1!white, colframe=blue!75!black,colbacklower=white,
  segmentation style={draw=blue,thick,solid},
  attach boxed title to top right={yshift=-\tcboxedtitleheight},
  boxed title style={
    colframe=blue!75!black,colback=blue!15!white,
    sharp corners=downhill,arc=12pt,
  },
  coltitle=blue!90!black, fonttitle=\bfseries,
  before skip balanced=2bp plus .5\baselineskip,
  after skip balanced=2bp plus .5\baselineskip,
  breakable,
  #1
}
\begin{document}

\title{高亮 \TeX 和 \LaTeX3 代码——使用\textsf{texhigh} 宏包}
\author{雾月\thanks{longaster@163.com}}
\maketitle
```

`\textsf{texhigh}` 宏包是专用来高亮 `\TeX` 文件的宏包。基于由 Rust 编写的命令行工具 `texhigh``\footnote{https://github.com/Sophanatprime/texhigh-rs}`，处理 1.2M 左右（37000 余行）的 `\texttt{expl3-code.tex}` 只需不到 0.4s，处理速度是 `\textsf{minted}` 宏包使用的 `pygmentize` 的 6 倍左右。对于普通大小的 `\TeX` 代码，处理它们所需的时间相比于 `\TeX` 文件本身编译所需的时间，已经可以忽略不记。

`\textsf{texhigh}` 主要是在 `\LaTeX` 中为 `texhigh` 命令行工具提供交互接口。这要求在编译 `\TeX`

文件时启用 `\texttt{--shell-escape}`。

`\textsf{texhigh}` 提供
`\texhighverb| \texhighverb、 \texhighfile、 \texhighinput|`
 这几个命令以及一个 `\textsf{texhigh}` 环境用于高亮 `\TeX` 代码。

`\textsf{texhigh}` 还有很强的可配置性。

为了实现处理 `\TeX` 源码与输出结果的分离, `\textsf{texhigh}` 使用“类型”和“类别”来区分不同的记号。

字符和控制序列是不同的“类型”, 控制序列之间可以有不同的“类别”, 例如是原语、`\LaTeX3` 函数等。

类型不可改变, 而“类别”可以自由修改。

每个类型都有一些命令用于更改它们的“类别”的显示效果, 如, 对于一个控制序列, 可以使用 `\texhighverb| \THSetClassCS|` 改变显示效果。可以为它们设置前景色、背景色, 甚至渐变色和底纹等等。实际上普通文字可以显示成什么效果, 它们就可以做到同样的效果。具体修改方式可以参考文末 `\texttt{basic}` 样式的源码。

`\textsf{texhigh}` 利用 `\textsf{tikz}` 实现了渐变和底纹效果, 同时也可直接集成到 `\textsf{tcolorbox}` 宏包中。只需要在加载 `\textsf{texhigh}` 之前加载这几个宏包。

```
\begin{examcode}[listing only]{}
\usepackage{tikz}
\usepackage{tcolorbox}
\usepackage{texhigh}
\tcbset{listing engine=texhigh} % 使用这个即可切换至 texhigh
若使用 xeCJK, 即在 XeLaTeX 中使用 ctex, 最好设置
\SetKeys[texhigh]{
  font=\ttfamily\XeCJKsetup{CJKecglue={\hskip 0pt plus 0.08\baselineskip}}
}
```

这样可避免在显示代码时中英文之间出现不必要的空格。

```
\end{examcode}
```

识别行内数学公式:

```
\begin{examcode}{}
\texhighverb!公式 $ \int_a^b x^2 dx = \frac{1}{3} x^3 |_a^b $!。
\end{examcode}
```

渐变:

```
\begin{examcode}[texhigh options={use-ctab=latex3}]{}
\texhighverb[style=tikz.gradient, use-ctab=latex3, config-file=config.cfg]| ←
↪ \sys_get_shell:nnNTF|
\end{examcode}
```

底纹:

```

\begin{examcode}[texhigh options={use-ctab=latexcode}]{}
\makeatletter
\def\myshadetext#1#2{\texhigh@shadetext{#1}{\bfseries #2}}
\makeatother
{\LARGE
% 在加载 texhigh 之前加载 tikz 宏包!
% 使用 grass.png 作为文字底纹, 依赖 tikz 的 fill.image 库, 会自动加载这个库。
\texhighverb[use-ctab=latex3, this-cs=\myshadetext{fill stretch ←
→ image=grass.png}]
|\sys_get_shell:nnNTF|
}
\end{examcode}

```

中文命令识别 (`\TeX` 原语带有下列线):

```

\begin{examcode}[texhigh use ctab=cjk]{}
\begin{texhigh}[output=\jobname.texhigh, use-ctab=cjk]
  \def\好好好{中文 Good}
  \好好好\relax
\end{texhigh}
\end{examcode}

\bigskip
\noindent\texhighverb|%% 以下输出本文源码 %%%|
\texhighfile[style=tikz.gradient, use-ctab=cjkl3]{\jobname.tex}
\noindent\texhighverb|%% 以上是本文源码 %%%|

\vspace{1cm}
\noindent\texhighverb|%%---- File: texhigh.sty ----%%|
\texhighfile[use-ctab=latex3code, config-file=config.cfg]{texhigh.sty}

\vspace{1cm}
\noindent\texhighverb|%%---- File: texhigh.prelude.ths ----%%|
\texhighfile[use-ctab=latexcode, config-file=config.cfg]{texhigh.prelude.ths}

\end{document}
%% 以上是本文源码 %%%

%%---- File: texhigh.sty ----%%
\ProvidesExplPackage{texhigh}{2024-10-20}{0.1.1}{highlight TeX string}
\def\texhigh@style@ext{ths}
\cs_new_protected:Npn \texhigh@inputstyle #1#2#3 % style, options, date
{ \@onefilewithoptions {#1}[{#2}][{#3}]\texhigh@style@ext }
\NewDocumentCommand \texhighloadstyle { 0{} 0{} m }

```

```

{ \clist_map_inline:nn {#3} { \texhigh@inputstyle {##1}{#1}{#2} } }

\cs_new_protected:Npn \THnl { \TH@nl } %: new line;
\cs_new_protected:Npn \THnlPlain { \TH@nl }
\cs_new_protected:Npn \THin #1 { \TH@in {#1} } %: indent;
\cs_new_protected:Npn \THinPlain #1 { \TH@in {#1} } %: indent;
\cs_new_protected:Npn \THbp #1 { \use:c { TH@bp@\texhigh@fallback{bp}{#1} } ←
→ } %: break point;
\cs_new_protected:Npn \THbpPlain #1 { \TH@bp@PLAIN } %: break point;
\cs_new_protected:Npn \THcs #1#2#3 %: control sequence;
{
  \exp_last_unbraced:Ne \use:c
    { { TH@cs@\texhigh@fallback{cs}{#1} } { \texhigh@normalize@cs {#2} } { ←
→ \texhigh@normalize@cs {#3} } } }
}
\cs_new_protected:Npn \THcsPlain #1#2#3
{ \exp_args:Nee \TH@cs@PLAIN { \texhigh@normalize@cs {#2} } { ←
→ \texhigh@normalize@cs {#3} } }
\cs_new_protected:Npn \THch #1#2 %: character;
{ \exp_args:Nee \use:c { TH@ch@\texhigh@fallback{ch}{#1} } { ←
→ \texhigh@normalize@cs {#2} } }
\cs_new_protected:Npn \THchPlain #1#2
{ \exp_args:Ne \TH@ch@PLAIN { \texhigh@normalize@cs {#2} } } %: character;
\cs_new_protected:Npn \THrs #1 { \use:c { TH@rs@\texhigh@fallback{rs}{#1} } ←
→ } %: range start;
\cs_new_protected:Npn \THrsPlain #1 { \TH@rs@PLAIN }
\cs_new_protected:Npn \THre #1 { \use:c { TH@re@\texhigh@fallback{re}{#1} } ←
→ } %: range end;
\cs_new_protected:Npn \THrePlain #1 { \TH@re@PLAIN }
\cs_new_protected:Npn \THst #1#2 { \use:c { TH@st@\texhigh@fallback{st}{#1} ←
→ } {#2} } %: string (Letters and Others)
\cs_new_protected:Npn \THstPlain #1 { \TH@st@PLAIN }
\cs_new_protected:Npn \THes #1 { \use:c { TH@es@\texhigh@fallback{es}{#1} } ←
→ } %: escaped start;
\cs_new_protected:Npn \THesPlain #1 { \TH@es@PLAIN }
\cs_new_protected:Npn \THEe #1 { \use:c { TH@ee@\texhigh@fallback{ee}{#1} } ←
→ } %: escaped end;
\cs_new_protected:Npn \THEePlain #1 { \TH@ee@PLAIN }
\cs_new_protected:Npn \THpn #1#2 { \use:c { TH@pn@\texhigh@fallback{pn}{#1} ←
→ } {#2} } %: punctuation;
\cs_new_protected:Npn \THpnPlain #1#2 { \TH@pn@PLAIN {#2} } %: punctuation;
\cs_new:Npn \texhigh@fallback #1#2
{

```

```

\cs_if_exist:cTF { TH@#1@#2 } {#2}
{
  \seq_if_exist:cT { l__texhigh_#1/#2_seq }
  { \seq_map_tokens:cn { l__texhigh_#1/#2_seq } { \__texhigh_find:nn ←
→ {#1} } }
  \use:n { \__texhigh_dotted_fallback:nn {#1} {#2} }
}
}

\cs_new:Npn \__texhigh_find:nn #1#2
{ \cs_if_exist:cT { TH@#1@#2 } { \seq_map_break:n { \use_i:nnn {#2} } } }
\cs_new:Npn \__texhigh_dotted_fallback:nn #1#2 { ? }
\cs_new:Npx \texhigh@normalize@cs #1
{
  \exp_not:N \__texhigh_normalize_cs:w #1 "
  \exp_not:N \q_recursion_tail
  \c_space_tl
  \exp_not:N \q_recursion_stop
}
\cs_new:Npn \__texhigh_normalize_cs:w #1 "#2~%
{
  #1
  \quark_if_recursion_tail_stop:n {#2}
  \char_generate:nn { "#2 } { 12 }
  \__texhigh_normalize_cs:w
}

\cs_new_eq:NN \texhigh@replicate \prg_replicate:nn
\cs_new_protected:Npn \texhigh@pdfliteral { \__kernel_backend_literal_pdf:e }
\cs_new_eq:NN \TH@letcs \cs_set_eq:cc

\NewDocumentCommand \texhighsetclassfallback { s m m m } % type, class, fallback
{
  \bool_if:nTF {#1}
  { \seq_set_from_clist:cn { l__texhigh_#2/#3_seq } {#4} }
  {
    \seq_if_exist:cF { l__texhigh_#2/#3_seq } { \seq_clear:c { ←
→ l__texhigh_#2/#3_seq } }
    \seq_set_from_clist:Nn \l__texhigh_tmp_seq {#4}
    \seq_concat:ccc { l__texhigh_#2/#3_seq } { l__texhigh_#2/#3_seq } { ←
→ l__texhigh_tmp_seq }
  }
}

\protected\long\def\THSaveStyle #1 {
  \expandafter\relax\csname texhigh@savestyle\expanded{\endcsname{#1}}
}

```



```

\def\texhigh@savestyle#1#2 {
  \tl_set:cn {texhigh@style/#1}{
    \let\texhigh@saved@name\@currname \let\@currname\@empty #2\let\@currname ←
    \texhigh@saved@name
  }
}

\def\texhigh@curr@style{}

\protected\long\def\THUseSavedStyle #1
  {\expandafter\relax\csname texhigh@usesavedstyle\expanded{\endcsname{#1}}\expanded{}}
\long\def\texhigh@usesavedstyle#1{
  \@ifundefined{texhigh@style/#1}
  {\PackageWarning{texhigh}{Unknown texhigh style #1.}}
  {\def\texhigh@curr@style{#1}\@nameuse{texhigh@style/#1}}
}

\cs_new_protected:Npn \THSetPlainStyle #1
{
  \str_if_eq:eeTF { #1 } { * }
  { \clist_map_inline:nn { bp,cs,ch,rs,re,st,es,ee,pn } { } }
  { \clist_map_inline:nn {#1} { } }
  { \cs_set_eq:cc { TH ##1 } { TH ##1 Plain } }
}

```

\ExplSyntaxOff

```

\newcommand\THSetClassBP[3][\@currname]{\@namedef{TH@bp#1@#2}{#3}}
\newcommand\THLetClassBP[3][\@currname]{\TH@letcs{TH@bp#1@#2}{TH@bp#1@#3}}
\newcommand\THSetClassCS[3][\@currname]{\@namedef{TH@cs#1@#2}##1##2{#3}}
\newcommand\THLetClassCS[3][\@currname]{\TH@letcs{TH@cs#1@#2}{TH@cs#1@#3}}
\newcommand\THSetClassCH[3][\@currname]{\@namedef{TH@ch#1@#2}##1{#3}}
\newcommand\THLetClassCH[3][\@currname]{\TH@letcs{TH@ch#1@#2}{TH@ch#1@#3}}
\newcommand\THSetClassRS[3][\@currname]{\@namedef{TH@rs#1@#2}{#3}}
\newcommand\THLetClassRS[3][\@currname]{\TH@letcs{TH@rs#1@#2}{TH@rs#1@#3}}
\newcommand\THSetClassRE[3][\@currname]{\@namedef{TH@re#1@#2}{#3}}
\newcommand\THLetClassRE[3][\@currname]{\TH@letcs{TH@re#1@#2}{TH@re#1@#3}}
\newcommand\THSetClassST[3][\@currname]{\@namedef{TH@st#1@#2}{#3}}
\newcommand\THLetClassST[3][\@currname]{\TH@letcs{TH@st#1@#2}{TH@st#1@#3}}
\newcommand\THSetClassES[3][\@currname]{\@namedef{TH@es#1@#2}{#3}}
\newcommand\THLetClassES[3][\@currname]{\TH@letcs{TH@es#1@#2}{TH@es#1@#3}}
\newcommand\THSetClassEE[3][\@currname]{\@namedef{TH@ee#1@#2}{#3}}
\newcommand\THLetClassEE[3][\@currname]{\TH@letcs{TH@ee#1@#2}{TH@ee#1@#3}}
\newcommand\THSetClassPN[3][\@currname]{\@namedef{TH@pn#1@#2}##1{#3}}
\newcommand\THLetClassPN[3][\@currname]{\TH@letcs{TH@pn#1@#2}{TH@pn#1@#3}}

```



```

\long\def\TH@nl{\leavevmode\par}
\long\@namedef{TH@in}#1{\texhigh@replicate{#1}{ }}
\long\@namedef{TH@bp@?}{\hskip\z@skip}
\long\def\TH@bp@PLAIN{\hskip\z@skip}
\long\@namedef{TH@cs@?}#1#2{\mbox{#1#2}}
\long\def\TH@cs@PLAIN#1#2{\mbox{#1#2}}
\long\@namedef{TH@ch@?}#1{\mbox{#1}}
\long\def\TH@ch@PLAIN#1{\mbox{#1}}
\long\@namedef{TH@rs@?}{\begingroup}
\long\def\TH@rs@PLAIN{\begingroup}
\long\@namedef{TH@re@?}{\endgroup}
\long\def\TH@re@PLAIN{\endgroup}
\long\@namedef{TH@st@?}#1{{#1}}
\long\def\TH@st@PLAIN#1{{#1}}
\long\@namedef{TH@es@?}{\begingroup}
\long\def\TH@es@PLAIN{\begingroup}
\long\@namedef{TH@ee@?}{\endgroup}
\long\def\TH@ee@PLAIN{\endgroup}
\long\@namedef{TH@pn@?}#1{\expandafter\@gobble\string#1}
\long\def\TH@pn@PLAIN#1{\expandafter\@gobble\string#1}

\RequirePackage{verbatim}
\ExplSyntaxOn

\iow_new:N \g__texhigh_verb_iow
\cs_new_protected:Npn \__texhigh_verb_text:nn #1#2
{
  \iow_open:Nn \g__texhigh_verb_iow {#1}
  \iow_now:Nn \g__texhigh_verb_iow {#2}
  \iow_close:N \g__texhigh_verb_iow
}
\cs_new_protected:Npn \__texhigh_verb_start:n #1
{
  \@bsphack
  \iow_open:Nn \g__texhigh_verb_iow {#1}
  \let\do\@makeother \dospecials
  \catcode`\~M\active
  \def\verbatim@processline
  { \iow_now:NV \g__texhigh_verb_iow \verbatim@line }
  \verbatim@start
}
\cs_new_protected:Npn \__texhigh_verb_end:
{
  \iow_close:N \g__texhigh_verb_iow
  \@esphack

```

```

}

\cs_new_protected:Npn \texhighdefstyle #1#2
{ \keys_define:nn { texhigh } { #1 .meta:nn = { texhigh } {#2} } }
\keys_define:nn { texhigh }
{
  filename .tl_set:N = \l__texhigh_fn_tl ,
  filename .initial:n = \jobname.texhigh.verb ,
  filename .groups:n = command ,
  banner .bool_set:N = \l__texhigh_banner_bool ,
  banner .groups:n = command ,
  use-ctab .clist_set:N = \l__texhigh_current_ctab_clist ,
  use-ctab .groups:n = command ,
  ctab-file .clist_set:N = \l__texhigh_ctab_file_clist ,
  ctab-file .groups:n = command ,
  __config .clist_set:N = \l__texhigh_config_clist ,
  config-file .clist_set:N = \l__texhigh_config_file_clist ,
  config-file .groups:n = command ,
  output .tl_set:N = \l__texhigh_output_tl ,
  output .groups:n = command ,

  font .tl_set:N = \l__texhigh_font_tl ,
  font .initial:n = \ttfamily ,
  style .code:n = \clist_map_inline:nn {#1} { \THUseSavedStyle {##1} } ,
  style .groups:n = format ,
  this-cs .code:n = {
    \clist_put_right:Nn \l__texhigh_config_clist { { cs_categories.this ←
→ ~ '.' } }
    \THSetClassCS[] {this} {#1} {##1} {##2} } % #1=tokens, ##1=escape char, ←
→ ##2=cs name
  },
  this-cs .groups:n = format ,
}

\cs_new_protected:Npn \__texhigh_options:
{
  \l__texhigh_font_tl
}

\NewDocumentCommand\texhighverb{ s +0{} +v }
{
  \group_begin:
  \keys_set:nn { texhigh } {#2}
  \__texhigh_options:
  \__texhigh_get_text:n {#3}
  \group_end: \ignorespaces
}

```

```

\NewDocumentCommand\texhighfile{ +0{} m }
{
  \par
  \group_begin:
  \__texhigh_env_init:
  \tl_clear:N \l__texhigh_output_tl
  \keys_set:nn { texhigh } {#1}
  \__texhigh_options:
  \tl_set:Nn \l__texhigh_fn_tl {#2}
  \__texhigh_get_last:
  \par
  \group_end:
}

\NewDocumentCommand\texhighinput{ +0{} m }
{
  \par
  \group_begin:
  \__texhigh_env_init:
  \keys_set:nn { texhigh } {#1}
  \__texhigh_options:
  \file_input:n {#2}
  \par
  \group_end:
}

\NewDocumentEnvironment{texhigh}{+0{}}
{
  \par \__texhigh_env_init:
  \keys_set:nn { texhigh } {#1}
  \group_begin: \__texhigh_verb_start:n \l__texhigh_fn_tl
}
{
  \__texhigh_verb_end: \group_end:
  \__texhigh_options: \__texhigh_get_last: \par
}

\cs_new_protected:Npn \__texhigh_env_init:
{
  \sloppy \hbadness\@M
  \dim_set:Nn \parindent { 0pt }
  \linespread{1} \selectfont
}

\cs_new_protected:Npn \__texhigh_get_text:n #1
{
  \str_if_in:nnTF {#1} { " }
  {

```

```

    \__texhigh_verb_text:nn \l__texhigh_fn_tl {#1}
    \tex_input:D | " \__texhigh_args_with_file:n \l__texhigh_fn_tl "
  }
  { \tex_input:D | " \__texhigh_args_with_text:n {#1} " }
}
\cs_new_protected:Npn \__texhigh_get_last:
{
  \tl_if_empty:NTF \l__texhigh_output_tl
  {
    \tex_input:D | " \__texhigh_args_with_file:n \l__texhigh_fn_tl "
  }
  {
    \sys_shell_now:e { \__texhigh_args_with_file:n \l__texhigh_fn_tl }
    \file_input:V \l__texhigh_output_tl
  }
}
\cs_new:Npn \__texhigh_args_with_text:n #1
{
  texhigh \c_space_tl
  \__texhigh_args:
  --text \c_space_tl '#1'
}
\cs_new:Npn \__texhigh_args_with_file:n #1
{
  texhigh \c_space_tl
  \__texhigh_args:
  --file \c_space_tl #1
}
\cs_new:Npn \__texhigh_args:
{
  \bool_if:NF \l__texhigh_banner_bool { --no-banner \c_space_tl }
  \clist_if_empty:NF \l__texhigh_current_ctab_clist
  {
    --current-ctab \c_space_tl
    \clist_use:Nn \l__texhigh_current_ctab_clist { --current-ctab ~ }
    \c_space_tl
  }
  \clist_if_empty:NF \l__texhigh_ctab_file_clist
  {
    --ctab-file \c_space_tl
    \clist_use::Nn \l__texhigh_ctab_file_clist { --ctab-file ~ }
    \c_space_tl
  }
  \clist_if_empty:NF \l__texhigh_config_file_clist
  {

```

```

    --config-file \c_space_tl
    \clist_use:Nn \l__texhigh_config_file_clist { --config-file ~ }
    \c_space_tl
  }
\clist_if_empty:NF \l__texhigh_config_clist
{
  --config \c_space_tl
  \clist_use:Nn \l__texhigh_config_clist { --config ~ }
  \c_space_tl
}
\tl_if_empty:NF \l__texhigh_output_tl
{ --output \c_space_tl \l__texhigh_output_tl \c_space_tl }
}

\DeclareKeys[texhigh/options/prelude]{
  color .if = @texhighload@color ,
  tikz .if = @texhighload@tikz ,
}

\keys_define:nn { texhigh/options }
{
  color .meta:n = { prelude/color } ,
  tikz .meta:n = { prelude/tikz } ,
}

\ProcessKeyOptions[texhigh/options]

\texhighloadstyle{texhigh.prelude}

%%%---- File: texhigh.prelude.ths ----%%%
\ProcessKeyOptions[texhigh/prelude]

\texhighsetclassfallback{cs}{primitive.luatex}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.xetex}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.uptex}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.pdfTeX}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.etex}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.knuthTeX}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.widely}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.sometex}{primitive, tex, latex}
\texhighsetclassfallback{cs}{primitive.luametateX}{context}
\texhighsetclassfallback{cs}{plaintex}{tex}
\texhighsetclassfallback{cs}{latex.document}{latex}

```

```

\texhighsetclassfallback{cs}{latex.programming}{latex}
\texhighsetclassfallback{cs}{latex.internal}{internal, latex}
\texhighsetclassfallback{cs}{latex.public}{latex}
\texhighsetclassfallback{cs}{latex3.primitive}{latex3.function.kernel, ←
→ latex3.function, latex3, primitive}
\texhighsetclassfallback{cs}{latex3.variable}{latex3, latex}
\texhighsetclassfallback{cs}{latex3.function}{latex3, latex}
\texhighsetclassfallback{cs}{latex3.variable.kernel}{latex3.kernel, ←
→ latex3.variable, latex3}
\texhighsetclassfallback{cs}{latex3.function.kernel}{latex3.kernel, ←
→ latex3.function, latex3}
\texhighsetclassfallback{cs}{latex3.variable.internal}{internal, ←
→ latex3.variable, latex3}
\texhighsetclassfallback{cs}{latex3.variable.public}{latex3.variable, latex3}
\texhighsetclassfallback{cs}{latex3.function.internal}{internal, ←
→ latex3.function, latex3}
\texhighsetclassfallback{cs}{latex3.function.public}{latex3.function, latex3}
\texhighsetclassfallback{cs}{math}{tex, latex}
\texhighsetclassfallback{cs}{symbol}{tex, latex}
\texhighsetclassfallback{rs}{math.inline}{math}
\texhighsetclassfallback{re}{math.inline}{math}

\@ifpackageloaded{xcolor}{}{\RequirePackage{xcolor}}
\RequirePackage{ninecolors}

\THSaveStyle{basic}{%
  \THSetClassBP{?}
  {\discretionary
    {\hbox{{\color{gray8}\_ $\hookleftarrow$}}}
    {\hbox{{\color{gray8}$\hookrightarrow$\_ }}}{}}%
  \THSetClassCS{texhigh}{\fboxsep\z@ % for texhigh package itself
    \fcolorbox{yellow9}{yellow9}{\strut\color{black}\bfseries#1#2}}}%
  \THSetClassCS{latex3.primitive}{\mbox{\color{red4}\bfseries#1#2}}% ←
→ #1=escape char, #2=cs name
  \THSetClassCS{latex3.kernel}{\mbox{\color{red4}\bfseries#1#2}}%
  \THSetClassCS{latex3.variable}{\mbox{\color{azure6}#1#2}}%
  \THSetClassCS{latex3.function}{\mbox{\color{green5}#1#2}}%
  \THSetClassCS{internal}{\mbox{\color{brown3}#1#2}}%
  \THSetClassCS{latex.document}{\mbox{\color{magenta4}\bfseries#1#2}}%
  \THSetClassCS{latex.programming}{\mbox{\color{yellow7}#1#2}}%
  \THSetClassCS{latex}{\mbox{\color{yellow8}#1#2}}%
  \THSetClassCS{primitive}{\texhigh@underline{\color{purple5}\bfseries#1#2}}%
  \THSetClassCS{?}{\mbox{\color{magenta5}#1#2}}%

```

```

\THSetClassCH{group}{\mbox{\color{purple3}#1}}%
\THSetClassCH{?}{\mbox{#1}}%
\THSetClassRS{comment}{\begingroup\color{gray}\THSetPlainStyle{cs}}%
\THSetClassRE{comment}{\endgroup}%
\THSetClassRS{parameter}{\begingroup\color{magenta2}}%
\THSetClassRE{parameter}{\endgroup}%
\THSetClassRS{math}{\begingroup\color{cyan7}}%
\THSetClassRE{math}{\endgroup}%
}
\THUseSavedStyle{basic}

\long\def\texhigh@underline#1{\leavevmode\setbox\z@\hbox{#1}}%
\hb@xt@\wd\z@{\rlap{\unhcopy\z@}%
  \kern.05em\vrule height-.25ex depth.4ex width\dimexpr\wd\z@-.1em\relax ←
→ \kern.05em}}

\if@texhighload@color
  \relax
\fi
\@ifpackageloaded{tikz}{\@texhighload@tikztrue}{}
\newbox\texhigh@picturebox
\if@texhighload@tikz
  \RequirePackage{tikz}
  \usetikzlibrary{shadings}
  \usetikzlibrary{fill.image}
  \protected\def\texhigh@shadetext#1#2{%
    \setbox\texhigh@picturebox=\hbox{{\texhigh@pdfliteral{7 Tr }#2}}%
    \tikz[baseline=0,line width=0pt]\path\pgfextra{\rlap{\copy ←
→ \texhigh@picturebox}}
      [#1] (0,-\dp\texhigh@picturebox) rectangle (\wd\texhigh@picturebox,\ht ←
→ \texhigh@picturebox);}

\tikzset{texhigh/.is family,
  texhigh/gradient primitive/.style={left color=blue,right color=cyan},
  texhigh/gradient ?/.style={left color=red,right color=blue},
  texhigh/gradient-style/.style={texhigh/gradient #1}}
\THSaveStyle{tikz.gradient}{%
  \THSetClassCS{latex}{\texhigh@underline{\color{purple}\bfseries#1#2}}
  \THSetClassCS{primitive}
    {\texhigh@shadetext{texhigh/gradient-style=primitive}{\bfseries #1#2}}%
  \THSetClassCS{?}{\texhigh@shadetext{texhigh/gradient-style=?}{#1#2}}%
}

```


\fi

```

\@ifpackageloaded{tcolorbox}{
  \tcbuselibrary{listings@core}
  \def\tcb@texhigh@file#1#2{%
    {\edef\tcb@temp{\texhighfile[{\unexpanded\expandafter{#1}}]}\tcb@temp{#2}}}
  \def\tcb@texhigh@uselistlisting{\tcb@texhigh@file\kvtcb@texhighoptions ←
→ \kvtcb@listingfile}
  \def\tcb@texhigh@usetemplisting{\tcb@texhigh@file\kvtcb@texhighoptions ←
→ \kvtcb@tempfile}
  \def\tcb@texhigh@doc@usetemplisting{\tcb@texhigh@file ←
→ \kvtcb@doctexhighoptions\kvtcb@tempfile}
%
  \tcbset{
    texhigh options/.store in=\kvtcb@texhighoptions,
    texhigh options=,
    texhigh config file/.style={texhigh options={config-file={#1}}},
    texhigh ctab file/.style={texhigh options={ctab-file={#1}}},
    texhigh use ctab/.style={texhigh options={use-ctab={#1}}},
    texhigh style/.style={texhigh options={style={#1}}},
    listing engine/texhigh/.code={\let\tcbuselistlisting ←
→ \tcb@texhigh@uselistlisting
    \let\tcbusetemplisting\tcb@texhigh@usetemplisting
    \let\tcb@doc@usetemplisting\tcb@texhigh@doc@usetemplisting},
  }
}{\fi}

```