

Listings Experiments with Minimal Parameters

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January 26, 2019

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1 basicstyle

Teletype font set with `basicstyle=\ttfamily` matches the font family of `verbatim` environment.

1.1 default (roman font, i.e., rmfamily)

```
0123456789
0000 0000
|||| | ||||
|||| .. ||||
0000..0000
```

1.2 rmfamily

```
\lstset{basicstyle=\rmfamily}
```

```
0123456789
0000 0000
|||| | ||||
|||| .. ||||
0000..0000
```

1.3 ttfamily

```
\lstset{basicstyle=\ttfamily}
```

```
0123456789
0000 0000
|||| | ||||
|||| .. ||||
0000..0000
```

1.4 compare with verbatim

```
0123456789
0000 0000
|||| | ||||
|||| .. ||||
0000..0000
```

2 columns

Full flexible columns set with `columns=fullflexible` least disturb the natural width and alignment of characters.

2.1 default (fixed columns)

```
0123456789
0000 0000
||||  ||||
||||  ||||
0000..0000
```

2.2 fixed

```
\lstset{columns=fixed}
```

```
0123456789
0000 0000
||||  ||||
||||  ||||
0000..0000
```

2.3 flexible

```
\lstset{columns=flexible}
```

```
0123456789
0000 0000
|||  |||
|||..|||
0000..0000
```

2.4 spaceflexible

```
\lstset{columns=spaceflexible}
```

```
0123456789
0000 0000
|||  |||
|||..|||
0000..0000
```

2.5 fullflexible

```
\lstset{columns=fullflexible}
```

```
0123456789
0000 0000
|||  |||
|||..|||
0000..0000
```

3 ttfamily + columns

Ignoring the dropped spaces, teletype font with flexible columns is pretty close to the output of `verbatim` environment. We fix the dropped spaces in the next section.

3.1 ttfamily only (fixed columns by default)

```
\lstset{basicstyle=\ttfamily}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

3.2 ttfamily + flexible

```
\lstset{basicstyle=\ttfamily, columns=flexible}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

3.3 ttfamily + spaceflexible

```
\lstset{basicstyle=\ttfamily, columns=spaceflexible}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

3.4 ttfamily + fullflexible

```
\lstset{basicstyle=\ttfamily, columns=fullflexible}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

3.5 compare with verbatim

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

4 ttfamily + columns + keepspaces

Teletype font with flexible columns and spaces intact matches the output of `verbatim`. The spaces are kept intact with `keepspaces=true`.

4.1 ttfamily + keepspaces only (fixed columns by default)

```
\lstset{basicstyle=\ttfamily, keepspaces=true}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

4.2 ttfamily + flexible + keepspaces

```
\lstset{basicstyle=\ttfamily, columns=flexible, keepspaces=true}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

4.3 ttfamily + spaceflexible + keepspaces

```
\lstset{basicstyle=\ttfamily, columns=spaceflexible, keepspaces=true}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

4.4 ttfamily + fullflexible + keepspaces

```
\lstset{basicstyle=\ttfamily, columns=fullflexible, keepspaces=true}
```

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

4.5 compare with verbatim

```
0123456789
0000 0000
||||  ||||
||||..||||
0000..0000
```

5 upquote

Quotes in code require special care because they are rendered as curved quotes by default. They are turned into straight quotes with `upquote=true`.

Note that the `listings` package requires commands like `\textasciigrave` and `\textquotesingle` which are available in `textcomp` package, so it must be used while using this parameter.

5.1 default (roman font)

```
'foo '  
"bar"  
'baz '
```

5.2 default (roman font) + upquote

```
\lstset{upquote=true}.  
'foo '  
"bar"  
`baz`
```

5.3 ttfamily

```
\lstset{basicstyle=\ttfamily}.  
'foo '  
"bar "  
'baz '
```

5.4 ttfamily + upquote

```
\lstset{basicstyle=\ttfamily, upquote=true}.  
'foo '  
"bar "  
`baz`
```

6 language + showstringspaces=false

Activating language syntax detection leads to visible spaces in strings (displayed as open box characters). They can be made invisible (blank) again with `showstringspaces=false`.

6.1 ttfamily + fullflexible + keepspaces only

```
\lstset{basicstyle=\ttfamily, columns=fullflexible, keepspaces=true}

#include <stdio.h>

int main()
{
    printf("hello, world\n");
    return 0;
}
```

6.2 ttfamily + fullflexible + keepspaces + language

```
\lstset{basicstyle=\ttfamily, columns=fullflexible, keepspaces=true, language=c}

#include <stdio.h>

int main()
{
    printf("hello, \_world\n");
    return 0;
}
```

6.3 ttfamily + fullflexible + keepspaces + language + showstringspaces=false

```
\lstset{basicstyle=\ttfamily, columns=fullflexible, keepspaces=true, language=c, showstringspaces=false}

#include <stdio.h>

int main()
{
    printf("hello, world\n");
    return 0;
}
```

6.4 compare with verbatim

```
#include <stdio.h>

int main()
{
    printf("hello, world\n");
    return 0;
}
```

7 minimal parameters

This section contains examples of minimal set of useful parameters while using the `listings` package to render code with or without syntax highlighting.

7.1 no syntax highlighting

```
\lstset{
  basicstyle=\ttfamily,
  columns=fullflexible,
  keepspaces=true,
  upquote=true
}

/* hello, world program */

#include <stdio.h>

int main()
{
  printf("hello, world");
  putchar('\n');
  return 0;
}
```

7.2 syntax highlighting

```
\lstset{
  basicstyle=\ttfamily,
  columns=fullflexible,
  keepspaces=true,
  upquote=true,
  language=c,
  showstringspaces=false,
  commentstyle=\color{darkgray},
  directivestyle=\color{teal},
  keywordstyle=\color{blue},
  identifierstyle=\color{violet},
  stringstyle=\color{magenta}
}

/* hello, world program */

#include <stdio.h>

int main()
{
  printf("hello, world");
  putchar('\n');
  return 0;
}
```