Listings Experiments
Fonts, Columns, and Spaces

Susam Pal

September 1, 2018

Contents

1 basicstyle

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

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

```
0123456789
OOOO   OOOO
||||   ||||
||||..||||
OOOO..OOOO
```

1.2 rmfamily

`\lstset{basicstyle=\rmfamily}`

```
0123456789
OOOO   OOOO
||||   ||||
||||..||||
OOOO..OOOO
```

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 `\lstset{columns=fullflexible}` least messes with the natural width and alignment of characters.

2.1 default (fixed columns)

```
0123456789
OOOO  OOOO
||||   ||||
||||..||||
OOOO...OOOO
```

2.2 fixed

`\lstset{columns=fixed}`

```
0123456789
OOOO  OOOO
||||   ||||
||||..||||
OOOO...OOOO
```

2.3 flexible

`\lstset{columns=flexible}`

```
0123456789
OOOO OOOO
||||   ||||
  ||||..||||
OOOO..OOOO
```

2.4 spaceflexible

`\lstset{columns=spaceflexible}`

```
0123456789
OOOO OOOO
||||   ||||
||||..||||
OOOO..OOOO
```

2.5 fullflexible

`\lstset{columns=fullflexible}`

```
0123456789
OOOO OOOO
|||| ||||
||||..||||
OOOO..OOOO
```

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 `\lstset{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 `\lstset{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=\ttyfamily}`.

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

5.4 ttfamily + upquote

`\lstset{basicstyle=\ttyfamily, 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 `\lstset{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 recommended parameters

This section contains examples of minimal set of recommended 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;
}
```