The `lstlisting` environment you are using comes from the **listings** package in LaTeX, which is designed for including source code with syntax highlighting and customization options.

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1. Required Package

To use `lstlisting`, you must include the `listings` package in your LaTeX document:

```
\usepackage{listings}
\usepackage{xcolor} % For custom colors (optional but useful)
```

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2. Understanding the Given Block

Your block:

```
\begin{lstlisting}[language=C++,rulecolor=\color{blue}]
```

Breakdown:

1. `language=C++` → Specifies C++ syntax highlighting.
2. `rulecolor=\color{blue}` → Changes the frame (rule) color to blue.

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3. Customizing `listings`

You can fully customize `lstlisting` with various options:

Basic Example:

```
\documentclass{article}
\usepackage{listings}
\usepackage{xcolor}

\begin{document}

\begin{lstlisting}[language=C++, rulecolor=\color{blue}, frame=single, basicstyle=\ttfamily]
#include <iostream>

int main() {
    std::cout << "Hello, World!" << std::endl;
    return 0;
}
\end{lstlisting}

\end{document}
```

Explanation of Options:

- `language=C++` → Enables syntax highlighting for C++.
- `rulecolor=\color{blue}` → Sets the frame color to blue.
- `frame=single` → Draws a frame around the listing.
- `basicstyle=\ttfamily` → Uses a monospaced font.

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4. More Customization

You can define a default style using:

```
\lstset{
    language=C++,
    frame=single,
    rulecolor=\color{blue},
    basicstyle=\ttfamily\small,
    keywordstyle=\color{red},
    commentstyle=\color{green},
    stringstyle=\color{orange},
    numbers=left,
    numberstyle=\tiny\color{gray},
    stepnumber=1
}
```

Then, whenever you use `lstlisting`, it will apply these styles automatically.

Let me know if you need more details! ⬚ The `\lstset{}` command in the `listings` package allows extensive customization of how code listings appear in your LaTeX document. Below is a comprehensive list of all the important options you can use with `\lstset{}`.

⬚ General Options

Option	Description	Example
`language`	Sets the programming language for syntax highlighting	`language=C++`
`frame`	Adds a border around the listing	`frame=single`, `frame=shadowbox`
`rulecolor`	Sets the color of the frame	`rulecolor=\color{blue}`
`basicstyle`	Changes the font style of the code	`basicstyle=\ttfamily\small`
`showstringspaces`	Shows spaces inside strings with underscores	`showstringspaces=false`
`tabsize`	Defines the number of spaces per tab	`tabsize=4`
`columns`	Adjusts column formatting	`columns=flexible`

⬚ Color and Styling

Option	Description	Example
`keywordstyle`	Style for keywords	`keywordstyle=\color{red}\bfseries`
`commentstyle`	Style for comments	`commentstyle=\color{green}\itshape`
`stringstyle`	Style for strings	`stringstyle=\color{orange}`
`numberstyle`	Style for line numbers	`numberstyle=\tiny\color{gray}`
`backgroundcolor`	Background color of the code block	`backgroundcolor=\color{lightgray}`
`emph`	Emphasizes specific words	`emph={int, float}`, `emphstyle=\color{blue}`

⬚ Line Numbering

Option	Description	Example
numbers	Enables line numbers	numbers=left
stepnumber	Sets line number interval	stepnumber=1
numbersep	Distance between code and line numbers	numbersep=5pt
firstnumber	Starts numbering from a specific line	firstnumber=100
resetmargins	Adjusts margins automatically	resetmargins=true

⬚ Formatting & Spacing

Option	Description	Example
breaklines	Wraps long lines automatically	breaklines=true
breakatwhitespace	Only breaks lines at spaces	breakatwhitespace=true
escapeinside	Allows inline LaTeX within code	escapeinside={(*}{*)}

⬚ Special Features

Option	Description	Example
caption	Adds a caption to the code block	caption=Example Code
label	Adds a reference label	label={lst:example}
morekeywords	Defines additional keywords	morekeywords={MyKeyword,AnotherKeyword}
firstline	Starts display from a specific line	firstline=5
lastline	Ends display at a specific line	lastline=20

⬚ Example Usage

```
 \documentclass{article}
\usepackage{listings}
\usepackage{xcolor}

\lstset{
    language=C++,
    frame=single,
    rulecolor=\color{blue},
    basicstyle=\ttfamily\small,
    keywordstyle=\color{red}\bfseries,
    commentstyle=\color{green}\itshape,
    stringstyle=\color{orange},
    numbers=left,
    numberstyle=\tiny\color{gray},
    stepnumber=1,
    backgroundcolor=\color{lightgray},
    breaklines=true,
    caption=Example C++ Code,
    label={lst:example}
}

\begin{document}

Here is an example of a C++ program:

\begin{lstlisting}
#include <iostream> // This is a comment

int main() {
    std::cout << "Hello, World!" << std::endl;
    return 0;
}
\end{lstlisting}

\end{document}
```

This will produce a nicely formatted C++ code block with:

- Syntax highlighting
- Custom colors
- Line numbers
- Automatic line wrapping
- A caption

Let me know if you need more customization!