

# Handout 5 — Informatik

## 1. Pseudocode

```
\usepackage{algpseudocode} aus \usepackage{algorithmicx}
\begin{algorithmic}[<step>] ... \end{algorithmic}
```

Package fuer pseudocode

Pseudocode Umgebung

**step** - Abstaende zwischen Zeilennummern

```
\begin{algorithm} ... \end{algorithm}
Algorithmen.
```

Erzeugt eine Floating Umgebung mit numerierten

Grundlegende Befehle der Pseudocode-Umgebung:

```
\STATE <text>
\IF{<condition>} \STATE{<text>} \ELSE \STATE{<text>} \ENDIF
\FOR{<condition>} \STATE{<text>} \ENDFOR
\FOR{<condition> \TO <condition> } \STATE{<text>} \ENDFOR
\FORALL{<condition>} \STATE{<text>} \ENDFOR
\WHILE{<condition>} \STATE{<text>} \ENDWHILE
\REPEAT \STATE{<text>} \UNTIL{<condition>}
\LOOP \STATE{<text>} \ENDLOOP
\REQUIRE <text>
\ENSURE <text>
\RETURN <text>
\PRINT <text>
\COMMENT{<text>}
\AND, \OR, \XOR, \NOT, \TO, \TRUE, \FALSE
```

## 2. Sourcecode

### Formatierter Text

```
\begin{verbatim} ... \end{verbatim} LaTeX Befehle werden ignoriert; Leerzeichen werden alle gedruckt
```

**Listing Umgebung** (Paket zum setzen von Quelltext)

```
\usepackage{listings}
\begin{listing}[<step>]><first line> ... \end{listing}
```

Package for Sourcecode

Listings Umgebung

**first line** - Startindex der Zeilennummern

**step** - Abstaende zwischen Zeilennummern

Quelltext aus Datei importieren

```
\lstinputlisting{<source-file>}
```

```
\lstinputlisting[language=<sprache>, firstline=<start>, lastline=<stop>]{<source-file>}
```

Code Highlighting mit Farben

```
\usepackage{color}
```

```
\definecolor{mygreen}{rgb}{0,0.6,0}
```

```
\definecolor{mygray}{rgb}{0.5,0.5,0.5}
```

```
\definecolor{mymauve}{rgb}{0.58,0,0.82}
```

### Einige Settings:

```
\lstset{ %  
  backgroundcolor=\color{white}, % choose the background color; you must add \usepackage{color}  
  basicstyle=\footnotesize, % the size of the fonts that are used for the code  
  breakatwhitespace=false, % sets if automatic breaks should only happen at whitespace  
  breaklines=true, % sets automatic line breaking  
  captionpos=b, % sets the caption-position to bottom  
  commentstyle=\color{mygreen}, % comment style  
  deletekeywords={...}, % if you want to delete keywords from the given language  
  escapeinside={\%*}{*}, % if you want to add LaTeX within your code  
  extendedchars=true, % lets you use non-ASCII characters; for 8-bits encodings only  
  frame=single, % adds a frame around the code  
  keepspaces=true, % keeps spaces in text, useful for keeping indentation of code  
  keywordstyle=\color{blue}, % keyword style  
  language=Octave, % the language of the code  
  otherkeywords={*,...}, % if you want to add more keywords to the set  
  numbers=left, % where to put the line-numbers; possible values(none, left, right)  
  numbersep=5pt, % how far the line-numbers are from the code  
  numberstyle=\tiny\color{mygray}, % the style that is used for the line-numbers  
  rulecolor=\color{black}, % if not set, frame-color can change on line-breaks to text-color  
  showspaces=false, % show spaces everywhere adding particular underscores;  
  showstringspaces=false, % underline spaces within strings only  
  showtabs=false, % show tabs within strings adding particular underscores  
  stepnumber=2, % the step between two line-numbers.  
  stringstyle=\color{mymauve}, % string literal style  
  tabsize=2, % sets default tabsize to 2 spaces  
  title=\lstname % show the filename of files included with \lstinputlisting;  
}
```