

# 1 Example Section

## 1.1 Example Subsection

### 1.1.1 Example Subsubsection

This is a template for cheatsheets that compiles with **PdLaTeX**. Please refer to the cheatsheet.sty file for style settings and the cheatsheet.tex or PDF file for the main document structure. In this cheatsheet, we demonstrate various features provided by the template.

## 2 Basic Text Formatting

This is **bold** text, this is *italic* text (*emph* text), this is underlined text, this is CAPS text, and this is `monospaced` text.

We use the `enumitem` package to make `itemize` lists and `enumerate` lists more compact.

- Item 1
- Item 2
  - Item 2.1
  - Item 2.2
    - Item 2.2.1
    - Item 2.2.2
- Item 3

1. First

2. Second

(a) Second.A

(b) Second.B

- i. Second.B.i
- ii. Second.B.ii

3. Third

## 3 Math Mode Example

Inline math:  $\text{Attention}(Q, K, V) = \text{Softmax}\left(\frac{QK^T}{\sqrt{d_k}}\right)V$ .

Display math:

$$\text{Attention}(Q, K, V) = \text{Softmax}\left(\frac{QK^T}{\sqrt{d_k}}\right)V$$

align environment:

$$\text{MultiHead}(Q, K, V) = \text{Concat}(\text{head}_1, \dots, \text{head}_h)W^O$$

where  $\text{head}_i = \text{Attention}(QW_i^Q, KW_i^K, VW_i^V)$

equation environment with numbering:

$$\text{FFN}(x) = \max(0, xW_1 + b_1)W_2 + b_2 \quad (1)$$

dcases environment:

$$f(x) = \begin{cases} e^{-1/x}, & x > 0 \\ 0, & x \leq 0 \end{cases}$$

Equation in box using `csbox` command:

$$\text{Attention}(Q, K, V) = \text{Softmax}\left(\frac{QK^T}{\sqrt{d_k}}\right)V \quad (2)$$

```
1 \csbox{equation}{%
2   \text{\texttt{\text{Attention}}}(Q, K, V) = \text{\texttt{\text{Softmax}}}\left(\frac{QK^T}{\sqrt{d_k}}\right)V
3 }
```

## 4 Code Listings

- Inline code (without colors):  
`\texttt{print("Hello World")}`
- Inline code (with colors, default Python):  
`\code{print("Hello World")}`  
`\code[python]{print("Hello World")}`  
`print("Hello World")`
- Code block using `lstlisting` environment:  
`\#include <stdio.h>`  
`int main() {`  
 `printf("Hello, World!\n");`  
 `return 0;`

5 }

- Code block using `codef` command to include from files (default Python):

```
1 import torch.nn as nn
2 import torch.nn.functional as F
3
4 class SimpleNN(nn.Module):
5     def __init__(self, input_size=10, hidden_size
6         =50, output_size=2):
7         super(SimpleNN, self).__init__()
8         self.fc1 = nn.Linear(input_size, hidden_size
9             )
10        self.fc2 = nn.Linear(hidden_size,
11            output_size)
12
13    def forward(self, x):
14        x = F.relu(self.fc1(x))
15        x = self.fc2(x)
16        return x
17
18 \codef{code-example.py}
19 % \codef[python]{code-example.py}
```

## 5 Tables & Figures

Use `cstable` to make tables.

Header 1	Header 2
Row 1, Col 1	This is some text in column 2 that will automatically wrap to fit the column width.
Row 2, Col 1	Another row with more text to demonstrate text wrapping in the table cell.

```
1 \cstable{ X}{%
2   \toprule
3   \textbf{Header 1} & \textbf{Header 2} \\
4   \midrule
5   Row 1, Col 1 & This is some text in column 2 that
6   will automatically wrap to fit the column
7   width. \\
8   \midrule
9   Row 2, Col 1 & Another row with more text to
10  demonstrate text wrapping in the table cell.
11  \\
12  \bottomrule
13 }
```

Use `csfig` to include figures.



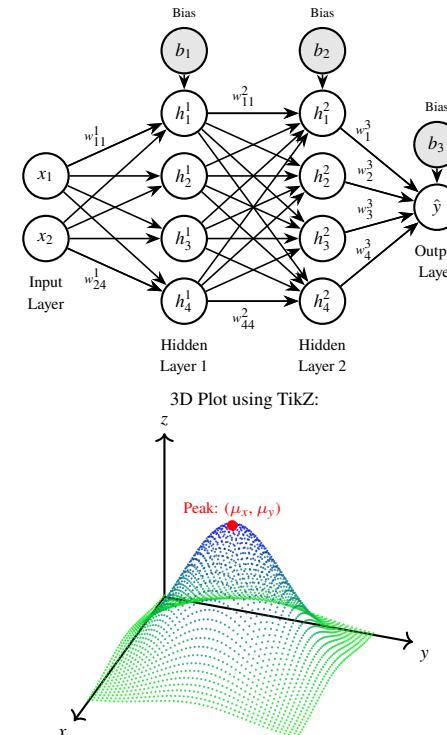
```
1 \csfig{fig-example.png}
```

## 6 Others

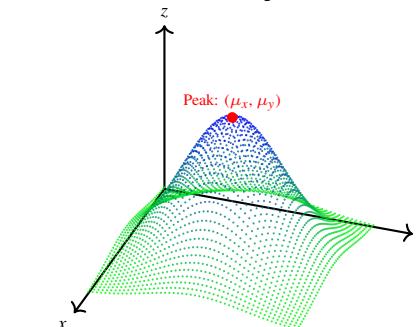
This is an example of a TODO note:

**TODO!** Finish writing this section.

TikZ example:



3D Plot using TikZ:



Header 1	Header 2	Header 3
Row 1	Data 1	Data 2
Row 2	Data 3	Data 4
Row 3	Data 5	Data 6

This is a blockquote example. You can use blockquotes to highlight important informations.

A horizontal rule follows:

The end of the markdown content for this cheatsheet template.

## 7 The Markdown File Input

### 8 The Second-level Heading

#### 8.1 This is a third-level heading

Here is some sample markdown content for the second part of the cheatsheet template. You can add more sections, lists, code snippets, and other markdown elements as needed.

##### Note:

- Enable the `markdown` package in the cheatsheet.sty file to use markdown features.
- The *detailed instructions* are provided in the cheatsheet.sty comments.
- A directory of `_markdown_<texfilename>` will be created to store intermediate files during compilation. You can safely delete this directory after compilation if needed.
- For the percentage signs (%) in Markdown, you may need to escape them as \% to avoid L<sup>A</sup>T<sub>E</sub>X compilation problems.

$$\text{Attention}(Q, K, V) = \text{softmax}\left(\frac{QK^T}{\sqrt{d_k}}\right)V$$

1. First ordered item  $\mathbf{W}_i^{(l)}$

2. Second ordered item

1. Subitem 2.1
2. Subitem 2.2

```
1 #include <stdio.h>
2 int main() {
3     printf("Hello, World!\n");
4     return 0;
5 }
```

Here is a simple table: