

# A L<sup>A</sup>T<sub>E</sub>X Document Templates

Ross

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# 1. Common Eenvironment

## 1.1 List

### 1.1.1 Unordered list

- Sth
- Sth
- ...

### 1.1.2 Ordered list

- (1) Sth
- (2) Sth
- (3) ...

More beautiful by using **1**

**12**

- Sth
- Sth
- ...

```
\begin{mybox}{12}
  \begin{itemize}[leftmargin = 10pt]
    \item Sth
    \item Sth
    \item $\cdots$
  \end{itemize}
\end{mybox}
```

Listing 1 *mybox*

## 1.2 Table

**Table 1** *This is a table*

NUMBER	NAME	AGE	ID	GENDER
001	*	*	*	*
002	*	*	*	*
003	*	*	*	*
004	*	*	*	*
005	*	*	*	*

```

\begin{table}[ht]
  \centering
  \begin{center}
    \caption{\em This is a table}
    \vskip 0.1in
    \label{table}
    \begin{tabular}{c|cccc}
      \hline
      \hline
      \rule{0pt}{3ex}
      NUMBER & NAME & AGE & ID & GENDER
      \rule[-1.2ex]{0pt}{0pt} \\ \hline
      001 & * & * & * & * \\
      002 & * & * & * & * \\
      003 & * & * & * & * \\
      004 & * & * & * & * \\
      005 & * & * & * & * \\
      \hline
      \hline
    \end{tabular}
  \end{center}
\end{table}

```

**Listing 2** *Table*

## 1.3 Figure

### 1.3.1 figure



Figure 1 *figure*

### 1.3.2 subfigure



(a) *subfigure 1*



(b) *subfigure 2*

Figure 2 *subfigure*

```
\begin{figure}[H]
  \centering
  \begin{subfigure}{.48\textwidth}
    \centering
    % include first image
    \includegraphics[width=.5\linewidth]{google.png}
    \caption{\em subfigure 1}
    \label{fig:v21}
  \end{subfigure}
  \begin{subfigure}{.48\textwidth}
    \centering
    % include second image
    \includegraphics[width=.5\linewidth]{google.png}
    \caption{\em subfigure 2}
    \label{fig:v22}
  \end{subfigure}
  \caption{\em subfigure}
  \label{fig:v2}
\end{figure}
```

Listing 3 *Subfigure*

## 2. Theorem Class Environments

### Definition 2.1

### Lemma 2.1

### Theorem 2.1

*Case 1.*

*Case 2.*

*Remark 2.1.*

### Corollary 2.1

**Example 2.1.**

**Proof.**

■

### 3. Math Equations

To prove  $a = b$ , we need to prove

**No number**

$$a < b + \epsilon, b < a + \epsilon.$$

**Numbered**

$$a < b + \epsilon, b < a + \epsilon. \tag{3.1}$$

PNP/Stokes equations

$$\left\{ \begin{array}{l} \partial_t - \nabla \cdot [D_i(\nabla C_i + q_i \nabla \Phi C_i) - \mathbf{u} C_i] = F_i, \\ - \nabla \cdot (\epsilon \nabla \Phi) = (C_1 - C_2) + F_3, \\ \partial_t \mathbf{u} - \Delta \mathbf{u} + \nabla p = -(C_1 - C_2) \nabla \Phi + F_4, \\ \nabla \cdot \mathbf{u} = 0. \end{array} \right. \tag{3.2}$$

$$\tag{3.3}$$

$$\tag{3.4}$$

$$\tag{3.5}$$

Matrix

$$\begin{bmatrix} 2 & -1 & 0 \\ -1 & 2 & -1 \\ 0 & -1 & 2 \end{bmatrix}$$

## References

[1]

[2]

[3]



## A. Codes

```

1  import matplotlib.pyplot as plt import numpy as np
2
3  plt.figure(num = 1, figsize=(8, 6)) n = np.linspace(1,100,100)
4  plt.plot(n, 1/n, 'bx') plt.xlabel(r'$ n $')
5  plt.ylabel(r'$ \frac{1}{n} $')
6
7  plt.figure(num = 2, figsize=(8, 6)) n = np.linspace(1,100,100)
8  plt.plot(n, np.sin(n)/n, 'bx') plt.xlabel(r'$ n $')
9  plt.ylabel(r'$ \frac{\sin(n)}{n} $')
10
11 plt.show()
    
```

Listing 4 *Python*

```

1  figure()
2  plot(XX,YY,'k-'),hold on plot(XX',YY','k-'), hold on
3  B= plot(boundary(3,:), boundary(4,:), 'b.', 'markersize', 25);
4  hold on
5  I = plot(index(:,1), index(:,2), 'r.', 'markersize',25);
6  hold off
7  axis equal
8  set(gca,'xtick',[],'ytick',[])
9  xlim(X)
10 ylim(Y)
11 set(gca,'looseInset',[0 0.01 0 0.01])
12 h = legend([B, I], 'boundary nodes', 'inside nodes', 'Location','bestoutside');
13 set(h, 'FontSize', 10)
    
```

Listing 5 *Matlab*