

TRƯỜNG ĐẠI HỌC PHENIKAA
KHOA CÔNG NGHỆ THÔNG TIN



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Mục lục

1	Normal section	4
2	Label prefixes	4
3	Better tables	5
4	Better enumerator	8
5	Codespace	9
5.1	Listings	9
5.2	Minted	10
6	Figures with flexible width	12

Mục lục hình ảnh

6.1	Example image 1x1	12
6.2	Example image A4	13
6.3	Set figure width imperatively	14

Mục lục bảng

3.1	Tabularx table	5
3.2	Long table caption	6

Listings

5.1	External import	9
5.2	External import but with a line range	9
5.3	Embedded	9

1 Normal section

This is how you normally work with \LaTeX , but you can also split a project into smaller files for easier management. To import other files, you can use `\input{}` or `\include{}`. There differences can be found at <https://tex.stackexchange.com/a/250>, but in short

```
\include{filename} = \clearpage \input{filename} \clearpage
```

2 Label prefixes

There are no definite rules for label prefixes, but you can use the following as a guideline.

- **chap:** for chapters
- **sec:** for sections
- **subsec:** for subsections
- **eq:** for equations
- **fig:** for figures
- **tab:** for tables
- **enum:** for enumerators and items
- **fn:** for footnotes
- **lst:** for listings
- **alg:** for algorithms
- **app:** for appendices

The `\caption` macro increases the used counter and sets the current label text which is used by `\label`. If you use `\label` before it the old label text is used instead, which leads to a wrong number. Always use `\label` after `\caption` and not before or in it.

That said, conventions are just conventions, and you can use whatever you want as long as you are consistent.

3 Better tables

The recommended way is by using the `booktabs` package and drop all vertical rules. `tabularx` is simply `tabular` but with `X` environment, meaning that it will try to use all of `\linewidth`.

Bảng 3.1: Tabularx table

	OOP	FP
Pros		
Cons		

More information can be found at <https://latex-tutorial.com/tables-in-latex/>.

In `tabular`, with the `p`, `m` or `b` column types, sometimes you will notice that the width of the table is wider than the sum of the widths of the columns. This is due to the padding added by the `\tabcolsep` and the line width of the vertical separators which are added by default.

```
1 \tabcolsep + p{length} + \tabcolsep
```

By default, `tabcolsep` is set to 6pt, which equals to 2.12mm in digital printing. The use of `@{}..@{}` voids this behavior.

Additionally, if you have to insert a very long table, which takes up two or more pages in your document, use the `longtable` package.

Bảng 3.2: Long table caption

Begin of Table	
Something	something else
Lots of lines	like this
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Continuation of Table 3.2	
Something	something else
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Continuation of Table 3.2	
Something	something else
Lots of lines	like this
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Lots of lines	like this
Lots of lines	like this
Lots of lines	like this
End of Table	

You may use the `\label` command so that you can cross reference longtables with `\ref`. Note however, that the `\label` command should not be used in a heading that may appear more than once. Place it either in the firsthead, or in the body of the table. It should not be the first command in any entry.

4 Better enumerator

Normal enumerator gets the job done, but what if you want custom numbering? This implementation allows custom labeling, either by pre-defined rules or in-place.

d.yeah First item

e.yeah Second item

custom Third item

5 Codespace

5.1 Listings

This is the recommended way to insert simple code.

Listing 5.1: External import

```
1 class iostream:
2     def __lshift__(self, other):
3         print(other, end='')
4         return self
5
6     def __repr__(self):
7         return ''
8
9
10 if __name__ == "__main__":
11     cout = iostream()
12     endl = '\n'
13     cout << "Hello" << ", " << "World!" << endl
```

Listing 5.2: External import but with a line range

```
1 if __name__ == "__main__":
2     cout = iostream()
3     endl = '\n'
4     cout << "Hello" << ", " << "World!" << endl
```

Listing 5.3: Embedded

```
1 from typing import Iterator
2
3 # This is an example
4 class Math:
5     @staticmethod
6     def fib(n: int) -> Iterator[int]:
7         """Fibonacci series up to n."""
```

```
8     a, b = 0, 1
9     while a < n:
10        yield a
11        a, b = b, a + b
12
13 result = sum(Math.fib(42))
14 print("The answer is {}".format(result))
```

- Inline

```
print('Hello, world!')
```

5.2 Minted

This provide better looking code, but requires external setup:

Minted requires python Pygments and the `--shell-escape` flag.

- External import

```
1 class iostream:
2     def __lshift__(self, other):
3         print(other, end='')
4         return self
5
6     def __repr__(self):
7         return ''
8
9
10 if __name__ == "__main__":
11     cout = iostream()
12     endl = '\n'
13     cout << "Hello" << ", " << "World!" << endl
```

- With a line range

```
1 if __name__ == "__main__":
2     cout = iostream()
3     endl = '\n'
4     cout << "Hello" << ", " << "World!" << endl
```

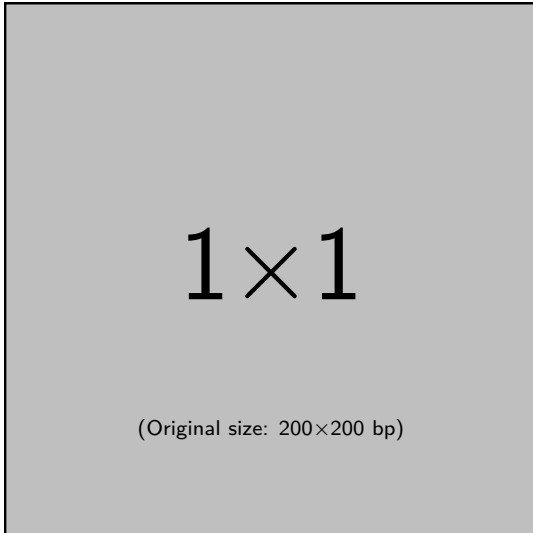
- Embedded

```
1 from typing import Iterator
2
3 # This is an example
4 class Math:
5     @staticmethod
6     def fib(n: int) -> Iterator[int]:
7         """Fibonacci series up to n."""
8         a, b = 0, 1
9         while a < n:
10            yield a
11            a, b = b, a + b
12
13 result = sum(Math.fib(42))
14 print("The answer is {}".format(result))
```

- Inline

```
print('Hello, world!')
```

6 Figures with flexible width



Hình 6.1: Example image 1x1

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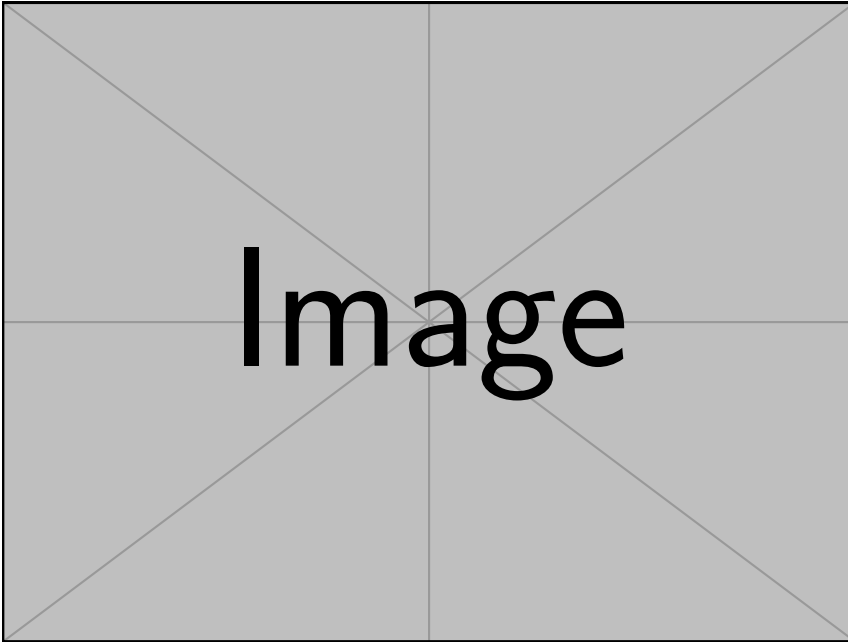
Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

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Hình 6.2: Example image A4

With `\adjoinincludegraphics` (or `\adjustimage`) you can also use the original width as `\width`:



Hình 6.3: Set figure width imperatively

Các nguồn tài liệu tham khảo

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