

VIET NAM NATIONAL UNIVERSITY HO CHI MINH CITY  
HO CHI MINH CITY UNIVERSITY OF TECHNOLOGY  
FACULTY OF COMPUTER SCIENCE AND ENGINEERING



Course name h

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Report type h

Report title h

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Advisor: Advisor h

HO CHI MINH CITY, JANUARY 2023



## Member list & Workload

No.	Full name	Student ID	Percentage of work
1	h	xxxxxxx	100%
2	h	xxxxxxx	100%



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## 1 Normal section

This is how you normally work with L<sup>A</sup>T<sub>E</sub>X, 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 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`.

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	OOP	FP
Pros		
Cons		

---

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



### 3 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.

a.yeah First item

b.yeah Second item

custom Third item

## 4 Codeblocks

There are several ways to embed code in a  $\text{\LaTeX}$  file. Here are inline code, embedded codeblock, and external import.

- 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 custom line range

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

- Embedded

```
1 class iostream:
2     def __lshift__(self, other):
3         print(other, end='')
4         return self
5
6     def __repr__(self):
7         return ''
```

- Inline

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



You can also define your custom inline as <https://tex.stackexchange.com/a/148479>.

This is one way to input algorithms.

- 1 Initialize  $Q$ -table values ( $Q(s, a)$ ) arbitrarily;
- 2 Initialize a state ( $s_t$ );
- 3 Repeat Steps 4 to 6 until learning period ends;
- 4 Choose an action ( $a_t$ ) for the current state ( $s_t$ ) using an exploratory policy;
- 5 Take action ( $a_t$ ) and observe the new state ( $s_t + 1$ ) and reward ( $r_t + 1$ );
- 6 Update  $Q$ -value;

**Algorithm 1:** QL algorithm





## 5 Figures with flexible width

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**1 × 1**

(Original size: 200×200 bp)

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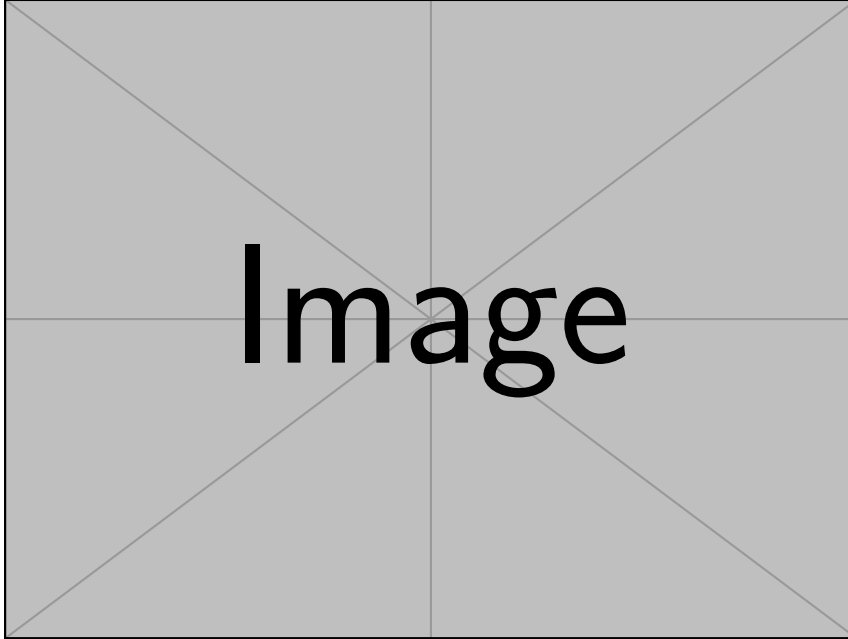
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With `\adjincludegraphics` (or `\adjustimage`) you can also use the original width as `\width`:





## References

- [1] Donald E. Knuth. Literate programming. *The Computer Journal*, 27(2):97–111, 1984.
- [2] Donald E. Knuth. *The T<sub>E</sub>X Book*. Addison-Wesley Professional, 1986.
- [3] Leslie Lamport. *L<sup>A</sup>T<sub>E</sub>X: a Document Preparation System*. Addison Wesley, Massachusetts, 2 edition, 1994.
- [4] Michael Lesk and Brian Kernighan. Computer typesetting of technical journals on UNIX. In *Proceedings of American Federation of Information Processing Societies: 1977 National Computer Conference*, pages 879–888, Dallas, Texas, 1977.
- [5] Frank Mittelbach, Michel Gossens, Johannes Braams, David Carlisle, and Chris Rowley. *The L<sup>A</sup>T<sub>E</sub>X Companion*. Addison-Wesley Professional, 2 edition, 2004.