南開大學

计算机网络 课程实验报告

TCP/IP 实验

学院　火星土木学院

专业　土木工程

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2077 年 1 月 1 日

目　　录

图表

1 一级标题

整理了在实验报告可能用到的任何元素，包括图表(及其编号)，树状图，代码块，数学公式，高亮，样式内容块等。

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测试中文:

通过这次实验，我深刻体会到了同态加密技术的强大和实用性，特别是在保护数据隐私的同时执行复杂计算的能力。使用 *Microsoft SEAL* 库进行加密计算不仅加深了我对同态加密原理的理解，也提升了我的编程技能和解决实际问题的能力。

1.1 二级标题

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图 1.1.1: 南开大学校徽

树状图:

- 1
  - 1.1
    - 1.1.1
  - 1.2
    - 1.2.1
    - 1.2.2
      - 1.2.2.1
- 2
- 3
  - 3.1
    - 3.1.1
  - 3.2

- [ ] Mercury
- [x] Mars
- [ ] Jupiter

分点:

1. *Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do.*
2. *Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do.*

- *Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do.*
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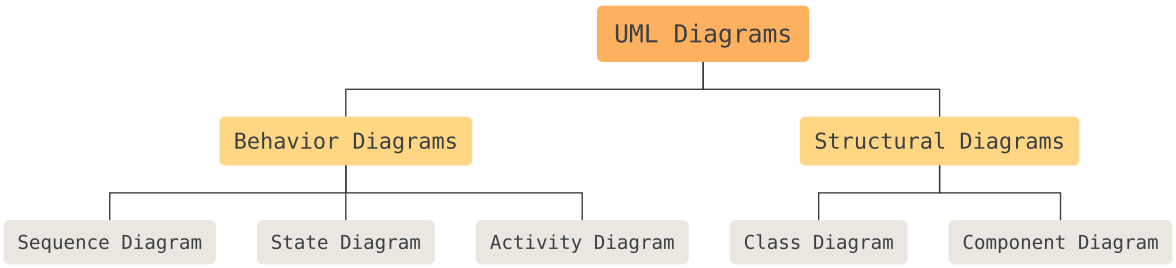

1.2 测试 tablex

Username	Data		Score
	Location	Height	
John	Second St.	180 cm	5
Wally	Third Av.	160 cm	10
Jason	Some St.	150 cm	15
Robert	123 Av.	190 cm	20
Other	Unknown St.	170 cm	25

表 1.2.2: 一个表格

1.3 测试 codly

```rust
pub fn main() {
    println!("Hello, world!");
}
```

```cpp
void MergeSort(int arr[], int left, int right) {
  if(left >= right) return;
  int mid = (left + right) >> 1;
  MergeSort(arr, left, mid);
  MergeSort(arr, mid + 1, right);
  int i = left, j = mid + 1, k = 0, temp[right - left + 1];
  while(i <= mid && j <= right) {
    if(arr[i] <= arr[j]) temp[k++] = arr[i++];
    else temp[k++] = arr[j++];
  }
  while(i <= mid) temp[k++] = arr[i++];
  while(j <= right) temp[k++] = arr[j++];
```

```
13    for(int i = 0; i < k; i++) arr[left + i] = temp[i];
14  }
```

1.4 测试 cetz

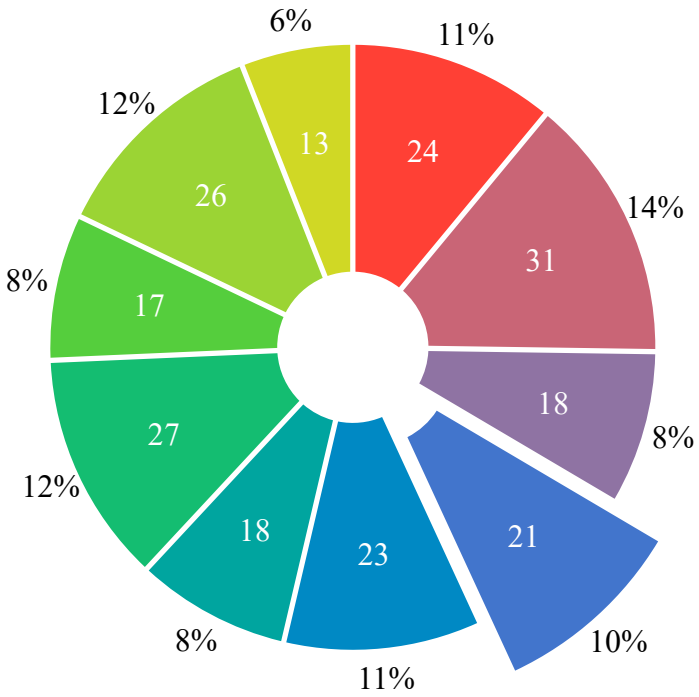

图 1.4.3: 饼图

1.5 测试 pinit

A simple highlighted text.

It is simple.

1.6 测试 colorbox

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1.7 测试 showybox

①

Red-ish showybox with separated sections!

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②

Clairaut's theorem

Let $f : A \to \mathbb{R}$ with $A \subset \mathbb{R}^n$ an open set such that its cross derivatives of any order exist and are continuous in A. Then for any point $(a_1, a_2, ..., a_n) \in A$ it is true that

$$\frac{\partial^n f}{\partial x_i ... \partial x_j}(a_1, a_2, ..., a_n) = \frac{\partial^n f}{\partial x_j ... \partial x_i}(a_1, a_2, ..., a_n) \tag{1.1}$$

This will be useful every time you want to interchange partial derivatives in the future.

③

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④

Divergence theorem

Suppose V is a subset of $\mathbb{R}^n$ which is compact and has a piecewise smooth boundary S (also indicated with $\partial V = S$). If $\boldsymbol{F}$ is a continuously differentiable vector field defined on a neighborhood of V, then:

$$\iiint_V (\boldsymbol{\nabla} \cdot \boldsymbol{F})\, \mathrm{d}V = \oiint_S (\boldsymbol{F} \cdot \hat{\boldsymbol{n}})\, \mathrm{d}S \tag{1.2}$$

In the case of $n = 3$, V represents a volumne in three-dimensional space, and $\partial V = S$ its surface

⑤

Parent container

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Child 1

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Child 2

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⑥

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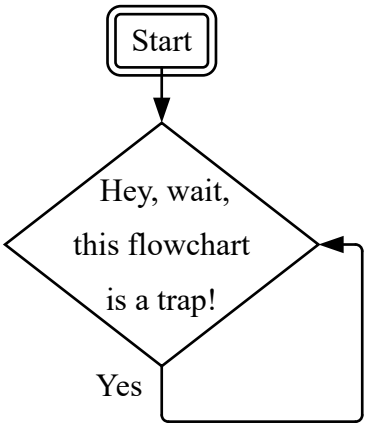
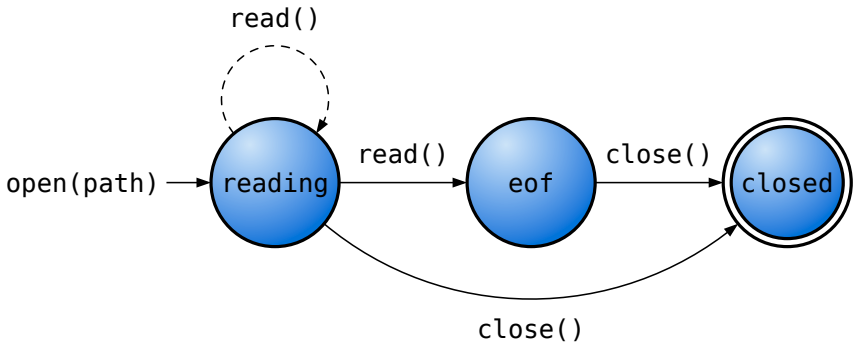
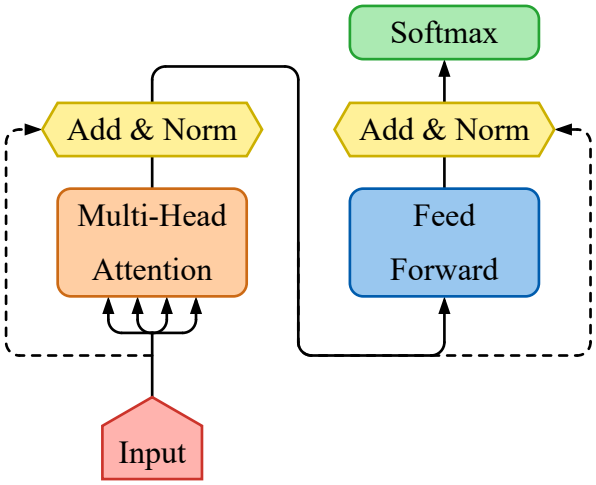
1.8 测试 fletcher







1.9 测试 gentle

Info

This is the info clue …

Best tip ever

Check out this cool package

Question

This is the info clue …

Quote

This is the info clue …

Example

This is the info clue …

1.10 测试 badgery

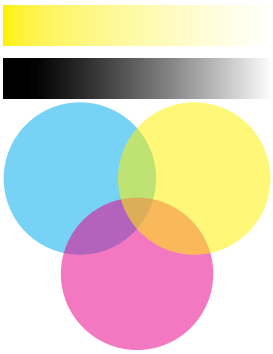
Gray badge Red badge Yellow badge

Green badge Blue badge Purple badge Click me

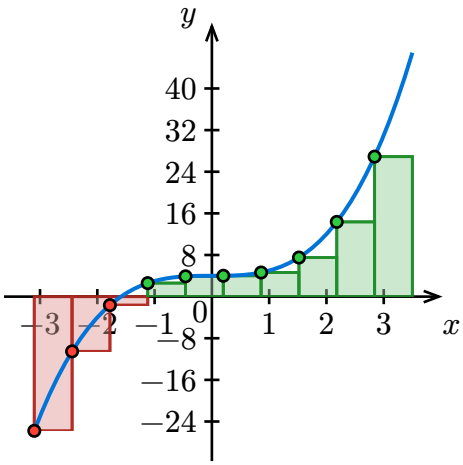
File New File...

Menu Sub-menu Sub-sub menu Action

1.11 测试 chromo



1.12 测试 riesketcher



1.13 测试 syntree

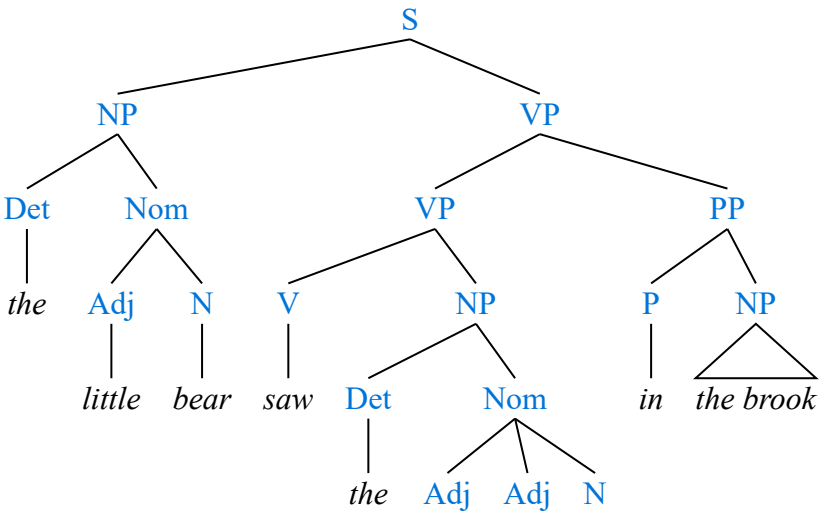


图 1.13.4: Example of a syntax tree.

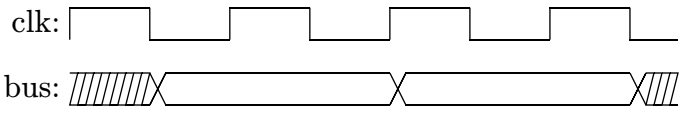
1.14 测试 physica

$$A^T, \boldsymbol{\nabla} \times \boldsymbol{E} = -\frac{\partial \boldsymbol{B}}{\partial t}, \quad \Lambda^{\mu}{}_{\nu} = \begin{pmatrix} 1 & \\ & \mathbb{R} \end{pmatrix}, \quad f(x,y)\,\mathrm{d}x\,\mathrm{d}y, \quad \mathrm{d}^3\boldsymbol{x}\,\mathrm{d}y, \quad \Delta^2 x \wedge \Delta^2 y, \quad \frac{\mathrm{D}\varphi}{\mathrm{D}t} = \frac{\partial \varphi}{\partial t} + \boldsymbol{u}\boldsymbol{\nabla}\varphi$$

$$H(f) = \begin{bmatrix} \dfrac{\partial^2 f}{\partial x^2} & \dfrac{\partial^2 f}{\partial x \partial y} \\ \dfrac{\partial^2 f}{\partial y \partial x} & \dfrac{\partial^2 f}{\partial y^2} \end{bmatrix}, \quad \boldsymbol{v}^{\boldsymbol{a}} = \sum_{i=1}^{n} \alpha_i \hat{\boldsymbol{u}}^{\boldsymbol{i}}, \quad \left\{ (x,y) \,\middle|\, \frac{\partial^3 f}{\partial x^2 \partial y} + \frac{\partial^3 f}{\partial x \partial y^2} < \varepsilon \right\} \tag{1.3}$$

$$-\frac{1}{c^2}\frac{\partial^2}{\partial t^2}\psi + \nabla^2\psi = \frac{m^2c^2}{\hbar^2}\psi, \quad \left|n^{(1)}\right\rangle = \sum_{k \notin D} \frac{\left\langle k^{(0)} \middle| V \middle| n^{(0)} \right\rangle}{E_n^{(0)} - E_k^{(0)}} \left|k^{(0)}\right\rangle, \quad \int_V \mathrm{d}V \left(\frac{\partial \mathcal{L}}{\partial \varphi} - \partial_\mu \left(\frac{\partial \mathcal{L}}{\partial (\partial_\mu \varphi)} \right) \right) = 0$$

$$\mathrm{d}^2 s = -\left(1 - \frac{2GM}{r}\right) \mathrm{d}^2 t + \left(1 - \frac{2GM}{r}\right)^{-1} \mathrm{d}^2 r + r^2\, \mathrm{d}^2 \Omega$$



(1.4)

1.15 测试 mitex

$$f(x) = \int_{-\infty}^{\infty} \hat{f}(\xi)\, e^{2\pi i \xi x}\, d\xi \tag{1.5}$$

1.16 测试 easytable

Header 1	*Header 2*	*Header 3*
How	I	want
a	drink,	alcoholic
of	course,	after
the	heavy	lectures
involving	quantum	mechanics.

表 1.16.5: 表格示例

Header 1	**Header 2**	**Header 3**
How	I	want
a	drink,	alcoholic
of	course,	after
the	heavy	lectures
involving	quantum	mechanics.

Header 1	Header 2	Header 3
How	I	want
a	drink,	alcoholic
of	course,	after
the	heavy	lectures
involving	quantum	mechanics.

图 1.16.6: 表格示例

1.17 测试 algo

```
FIB (n):
 1 if n < 0:
 2     return null
 3 if n = 0 or n = 1:
 4     return n
 5
 6 let x ← 0
 7 let y ← 1
 8 for i ← 2 to n − 1: ▷ so dynamic!
 9     let z ← x + y
10     x ← y
11     y ← z
12
13 return x + y
```

indent-guides: 1pt + black
main-text-styles: (size: 15pt)

```
FLOYD-WARSHALL(V, E, w):
Let dist[u, v] ← ∞ for u, v in V
For (u, v) in E:
    dist[u, v] ← w(u, v)                    // edge weights
For v in V:
    dist[v, v] ← 0                          // base case

For k ← 1 to |V|:
    For i ← 1 to |V|:
        For j ← 1 to |V|:
            // if new path is shorter, reduce distance
            If dist[i, j] > dist[i, k] + dist[k, j]:
                dist[i, j] ← dist[i, k] + dist[k, j]

Return dist
```

1.18 测试 theorems

Definition 1.18.1: A natural number is called a *prime number* if it is greater than 1 and cannot be written as the product of two smaller natural numbers.

Example: The numbers 2, 3, and 17 are prime. Corollary 1.18.1.1 shows that this list is not exhaustive!

Theorem 1.18.1 (Euclid): There are infinitely many primes.

Proof: Suppose to the contrary that $p_1, p_2, ..., p_n$ is a finite enumeration of all primes. Set $P = p_1 p_2 ... p_n$. Since $P + 1$ is not in our list, it cannot be prime. Thus, some prime factor p_j divides $P + 1$. Since p_j also divides P, it must divide the difference $(P + 1) - P = 1$, a contradiction. ■

Corollary 1.18.1.1: There is no largest prime number.

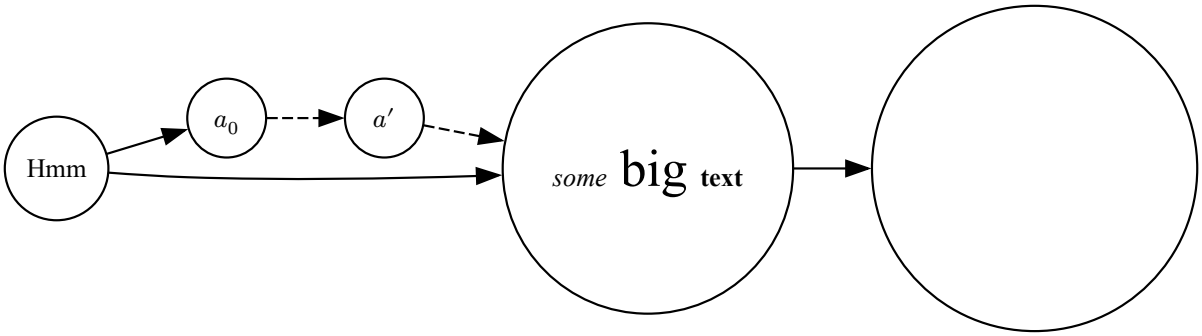
Corollary 1.18.1.2: There are infinitely many composite numbers.

Theorem 1.18.2: There are arbitrarily long stretches of composite numbers.

Proof: For any $n > 2$, consider

$$n! + 2, \quad n! + 3, \quad ..., \quad n! + n \tag{1.6}$$

1.19 测试 diagraph



1.20 测试 xarrow

$$\begin{array}{c} a \xleftarrow{\mathbb{Q},1+1^4} b \\ c \xrightarrow[\text{very long boi}]{} d \\ \hline a \overset{\text{NP}\sum^*}{\twoheadrightarrow} b \times 4 \end{array} \tag{1.8}$$

1.21 测试 drafting

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You can provide two positional arguments if you want to highlight a phrase associated with your note.

Be aware that `typst` will complain when 4 notes overlap, and stop automatically avoiding collisions when 5 or more notes overlap. This is because the compiler stops attempting to reposition notes after a few attempts (initial layout + adjustment for each note).

You can manually adjust the position of notes with `dy` to silence the warning.

Hello, world!

When notes are about to overlap, they're automatically shifted

To avoid collision

The first is text which should be inline-noted, and the second is the standard margin