

# 第一周实验报告

於佳杰

2024 年 8 月 30 日

## 目录

1	实验目的	1
2	实例展示	1
2.1	LaTeX . . . . .	1
2.1.1	列表 . . . . .	1
2.1.2	表格 . . . . .	3
2.1.3	图片 . . . . .	4
2.1.4	基本数学公式 . . . . .	5
2.1.5	画简单图形 . . . . .	6
2.1.6	画函数图像 . . . . .	6
2.1.7	矩阵 . . . . .	8
2.1.8	页眉页脚 . . . . .	9
2.1.9	并排图 . . . . .	9
2.1.10	三线表 . . . . .	10
2.1.11	嵌套表格 . . . . .	11
2.1.12	多行公式 . . . . .	11
2.1.13	按等号对齐的多行公式 . . . . .	12
2.1.14	分段函数 . . . . .	12
2.1.15	证明环境和证毕符号 . . . . .	13
2.1.16	颜色的表达 . . . . .	13
2.1.17	超链接 . . . . .	14
2.1.18	积分图像 . . . . .	14

目录	2
2.1.19 文字结点 . . . . .	15
2.1.20 循环 . . . . .	15
2.2 git . . . . .	16
2.2.1 新建 Git 仓库并克隆 . . . . .	16
2.2.2 跟踪文件 . . . . .	16
2.2.3 分支 . . . . .	17
2.2.4 分支的合并 . . . . .	18
2.2.5 修复最近的提交，但不创建新提交 . . . . .	18
2.2.6 变基一个分支到另一个分支，并解决可能出现的冲突:. . . . .	18
2.2.7 重写分支历史，使所有提交都成为主分支的一部分:: . . . . .	19
2.2.8 使用 grep 搜索提交历史中的特定文本 . . . . .	20
2.2.9 交互式变基并修改一系列提交 . . . . .	21
2.2.10 交互式变基并修改一系列提交 . . . . .	22
2.2.11 使用脚本自动化 Pull Request 合并流程 . . . . .	23
2.2.12 创建一个标签的自动化脚本 . . . . .	24
2.2.13 使用脚本自动化删除过时的分支 . . . . .	26
2.2.14 使用脚本自动化检查分支是否落后于远程分支 . . . . .	26
2.2.15 使用脚本自动化检查远程分支是否存在 . . . . .	28
<b>3 困难与解决方案</b>	<b>29</b>
3.1 LaTeX . . . . .	29
3.2 git . . . . .	29
<b>4 心得体会</b>	<b>30</b>
<b>5 github网址</b>	<b>30</b>

## 1 实验目的

掌握LaTeX和git的应用

## 2 实例展示

### 2.1 LaTeX

LaTeX命令展示

#### 2.1.1 列表

##### 1. 有序列表 (enumerate)

- 命令展示

```
\begin{enumerate}
\item First thing

\item Second thing
\begin{itemize}
\item A sub-thing

\item Another sub-thing
\end{itemize}

\item Third thing

\end{enumerate}
```

- 效果展示

- (a) First thing
- (b) Second thing
  - A sub-thing
  - Another sub-thing
- (c) Third thing

## 2. 无序列表 (itemize)

## • 命令展示

```
\begin{itemize}  
  \item[@] First hello  
  \item[@] first hello  
  \item[@] first hello0  
  \item[*] Second bye  
  \item[*] second bye  
  \item[*] second byee  
  \begin{itemize}  
    \item[cat] A sub-thing  
    \item[cat] B sub-thing  
    \item[cat] C sub-thing  
    \item[Plants] Another sub-thing  
    \item[Plants] Another sub-thing  
    \item[Plants] Another sub-thing  
  \end{itemize}  
  \item[My] Third thing  
  \item[My] Third cat  
  \item[My] Third dog  
\end{itemize}
```

## • 效果展示

```
@ First hello  
@ first hello  
@ first hello0  
* Second bye  
* second bye  
* second byee  
cat A sub-thing  
cat B sub-thing  
cat C sub-thing
```

```

Plants Another sub-thing
Plants Another sub-thing
Plants Another sub-thing
My Third thing
My Third cat
My Third dog

```

### 2.1.2 表格

#### 1. 普通表格 (tabular)

- 命令展示

```

\begin{table}
\center

\begin{tabular}{|c| c| c|}
\hline
okk & okk & okk\\
\hline\hline
okk & okk & okk\\
\hline
okk & okk & okk\\
\hline
\end{tabular}

\begin{table}
\center

\begin{tabular}{|l | r | r | r |}
\hline
City & \multicolumn{3}{c|}{Year} \\
\hline
& 2006 & 2007 & 2008 \\
\hline

```

```

\hline
London & 45789 & 46551 & 51298 \\
Berlin & 34549 & 32543 & 29870 \\
Paris & 49835 & 51009 & 51970 \\
\hline
\end{tabular}
\end {table}

```

- 效果展示

表 1: 假装是个表

okk	okk	okk
okk	okk	okk
okk	okk	okk

表 2: 假装是个表

City	Year		
	2006	2007	2008
London	45789	46551	51298
Berlin	34549	32543	29870
Paris	49835	51009	51970

### 2.1.3 图片

#### 1. 图片 (figure)

- 命令展示

```

\begin{figure}[H]
\centering
\includegraphics[width=1\textwidth]{myimage}
\caption{Here is my image}
\label{image-myimage}
\end{figure}

```

- 效果展示



图 1: Here is my image

#### 2.1.4 基本数学公式

##### 1. 基本数学公式

- 命令展示

```
\begin{align}
&\frac{d}{dx}\int_0^{\infty} f(s) \, ds = f(x)
\\ \end{align}
```

```

f(x) &= \sum_{i=0}^{\infty} \frac{f^{(i)}(0)}{i!} x^i \\
x &= \sqrt{\frac{x_{-i}}{z-y}} \\
\end{align}

```

- 效果展示

$$\frac{d}{dx} \int_0^\infty f(s) ds = f(x) \quad (1)$$

$$f(x) = \sum_{i=0}^{\infty} \frac{f^{(i)}(0)}{i!} x^i \quad (2)$$

$$x = \sqrt{\frac{x_i}{z}} y \quad (3)$$

### 2.1.5 画简单图形

#### 1. 画三角形

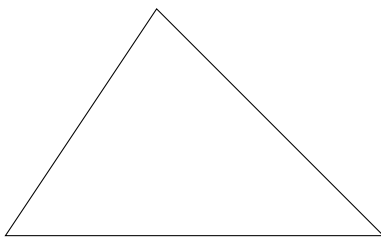
- 命令展示

```

\begin{tikzpicture}
\draw (0,0) — (2,3) — (5,0) — cycle;
\end{tikzpicture}

```

- 效果展示



### 2.1.6 画函数图像

#### 1. 绘制 $y=x*x$ 函数图像

- 命令展示

```

\begin{table}[H]
\begin{tikzpicture}
\begin{axis}[

```

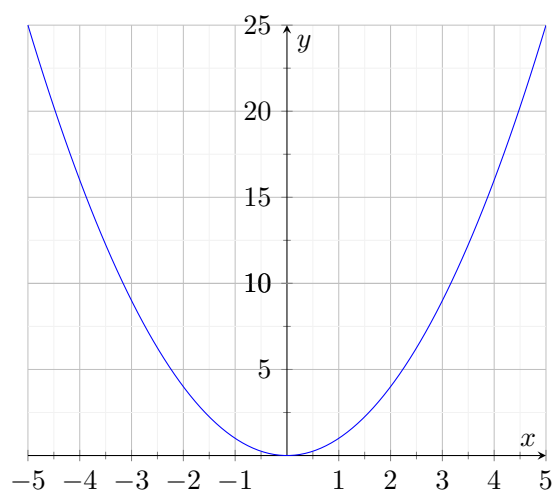


```

xmin=-5, xmax=5,
ymin=0, ymax=25,
axis lines=middle,
xlabel={ $x$ },
ylabel={ $y$ },
xtick={-5,-4,...,5},
ytick={0,5,...,25},
extra y ticks={10},
grid=both,
grid style={line width=.1pt, draw=gray!10},
major grid style={line width=.2pt, draw=gray!50},
minor tick num=1
]
\addplot[
domain=-5:5,
samples=100,
color=blue,
]
{x^2};
\end{axis}
\end{tikzpicture}
\end{table}

```

- 效果展示

表 3:  $y=x^2$ 

### 2.1.7 矩阵

#### 1. 矩阵

- 命令展示

```
\[
\mathbf{H}=
\begin{bmatrix}
\dfrac{\partial^2 f}{\partial x^2} &
\dfrac{\partial^2 f}{\partial x \partial y} \\
\dfrac{\partial^2 f}{\partial x \partial y} &
\dfrac{\partial^2 f}{\partial y^2}
\end{bmatrix}
\]
```

- 效果展示

$$\mathbf{H} = \begin{bmatrix} \frac{\partial^2 f}{\partial x^2} & \frac{\partial^2 f}{\partial x \partial y} \\ \frac{\partial^2 f}{\partial x \partial y} & \frac{\partial^2 f}{\partial y^2} \end{bmatrix}$$

### 2.1.8 页眉页脚

#### 1. 页眉页脚

- 命令展示

```
\pagestyle{fancy}
\fancyhf{}
\renewcommand{\headrulewidth}{0.4pt}
\renewcommand{\footrulewidth}{0pt}

\fancyhead[L]{Chapter \thechapter}
\fancyhead[C]{\leftmark}
\fancyhead[R]{\thepage}

\fancyfoot[C]{\textbf{Page \thepage}}
```

- 效果展示  
如文档所示

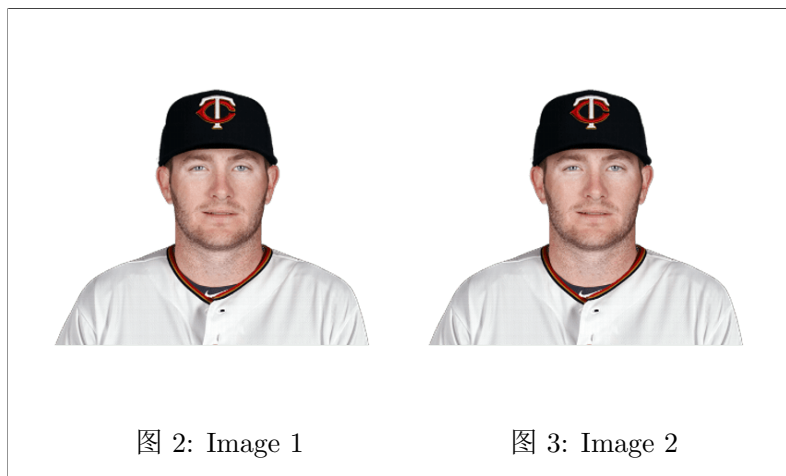
### 2.1.9 并排图

#### 1. 并排图

- 命令展示

```
\begin{mdframed}
  \begin{minipage}{0.5\textwidth}
    \includegraphics[width=\linewidth]{good}
    \captionof{figure}{Image 1}
  \end{minipage}
  \hfill
  \begin{minipage}{0.5\textwidth}
    \includegraphics[width=\linewidth]{good}
    \captionof{figure}{Image 2}
  \end{minipage}
\end{mdframed}
```

- 效果展示



### 2.1.10 三线表

#### 1. 三线表

- 命令展示

```
\begin{tabular}{cccc}
\toprule
& \multicolumn{3}{c}{Numbers} & \\
\cmidrule{2-4}
& 1 & 2 & 3 & \\
\midrule
Alphabet & A & B & C & \\
Roman
Numbers
1 & 2 & 3
& I & II & III & \\
\bottomrule
\end{tabular}
```

				Numbers		
				1	2	3
• 效果展示	Alphabet			A	B	C
	Roman Numbers			I	II	III
	1	2	3			

### 2.1.11 嵌套表格

#### 1. 嵌套表格

##### • 命令展示

```

\begin{tabular}{|c|c|c|}
\hline
a&b&c\\\hline
a&\multicolumn{1}{@{}c@{}}{ }
{\begin{tabular}{c|c}
o&k\\\hline
o&k\\
\end{tabular}}
&c\\\hline
a&b&c\\\hline
\end{tabular}

```

##### • 效果展示

a	b	c
a	o	k
	o	k
a	b	c

### 2.1.12 多行公式

#### 1. 多行公式

##### • 命令展示

```

\begin{multline}
a + b + c + d + e + f \\
+ g + h + i \\
\end{multline}

```

```
= j + k + l + m + n \\
= o + p + q + r + s
```

```
\end{multline}
```

- 效果展示

$$\begin{aligned}
 a + b + c + d + e + f + g + h + i \\
 &= j + k + l + m + n \\
 &= o + p + q + r + s \quad (4)
 \end{aligned}$$

### 2.1.13 按等号对齐的多行公式

#### 1. 按等号对齐的多行公式

- 命令展示

```
\begin{equation}
\begin{aligned}
a&= b+ c \\
d&= e+ f+g \\
h+i&= j+k \\
l+m&= n
\end{aligned}
\end{equation}
```

- 效果展示

$$\begin{aligned}
 a &= b + c \\
 d &= e + f + g \\
 h + i &= j + k \\
 l + m &= n
 \end{aligned} \quad (5)$$

### 2.1.14 分段函数

#### 1. 分段函数

- 命令展示

```

\left| x \right| = \left\{ \begin{array}{rl} -x & x < 0, \\ 0 & x = 0, \\ x & x > 0. \end{array} \right.
\end{array} \right.
\end{itemize}

```

- 效果展示

$$|x| = \begin{cases} -x & x < 0, \\ 0 & x = 0, \\ x & x > 0. \end{cases}$$

### 2.1.15 证明环境和证毕符号

#### 1. 证明环境和证毕符号

- 命令展示

```

\begin{proof}
  Assuming  $\gamma$ 
   $= 1/\sqrt{1-v^2/c^2}$ , then
\begin{align*}
E &= \gamma m_0 c^2 \\
p &= \gamma m_0 v \quad \text{\texttt{\textbackslash qedhere}}
\end{align*}
\end{proof}

```

- 效果展示

证明. Assuming  $\gamma = 1/\sqrt{1-v^2/c^2}$ , then

$$E = \gamma m_0 c^2$$

$$p = \gamma m_0 v$$

□

### 2.1.16 颜色的表达

#### 1. 例如

- 命令展示

```
\large\sffamily
\color{red!40}
\color{blue}
\color{blue!50!black}
\color{black}
```

- 效果展示 40% 红色 蓝色 蓝黑 黑色

### 2.1.17 超链接

#### 1. 超链接

- 命令展示

```
\href{https://github.com/KeepingMoving/work1.git}{GitHub}
```

- 效果展示 [GitHub](https://github.com/KeepingMoving/work1.git)

### 2.1.18 积分图像

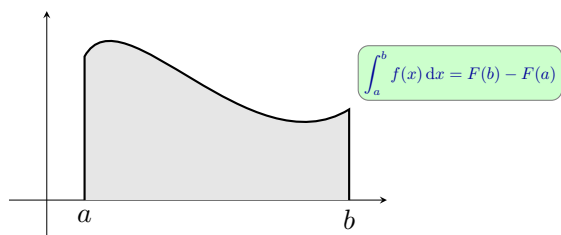
#### 1. 积分图像

- 命令展示

```
\begin{tikzpicture}
\draw[stealth, line width=0.2pt] (-0.5,0) -- (4.5,0);
\draw[stealth, line width=0.2pt] (0,-0.5) -- (0,2.5);
\coordinate (a) at (0.5,1.9);
\coordinate (b) at (4,1.2);
\node[below] (a0) at (a|-0,0) {$a$};
\node[below] (b0) at (b|-0,0) {$b$};
\filldraw[fill=gray!20, draw, thick]
(a0) -- (a) .. controls (1,2.8) and (2.7,0.4) .. (b) -- (b0) -- cycle;
\node[above right, outer sep=0.2cm, rounded corners,
fill=green!20, draw=gray, text=blue!60!black, scale=0.6]
at (b) {$\displaystyle \int_a^b f(x)\, \mathrm{d}x = F(b) - F(a)$};
\end{tikzpicture}
```



- 效果展示



### 2.1.19 文字结点

#### 1. 文字结点

- 命令展示

```
\begin{tikzpicture}
\node (A) at (0,0) {A};
\node (B) at (1,0) {B};
\node (C) at (60:1) {C};
\draw (A)---(B)---(C)---(A);
\end{tikzpicture}
```




- 效果展示

### 2.1.20 循环

#### 1. 有序列表 (enumerate)

- 命令展示

```
\begin{tikzpicture}
\foreach \n/\t in
{0/\alpha,1/\beta,2/\gamma}
{\node[circle,fill=lightgray,draw]
at (\n,0) {\t};}
\end{tikzpicture}
```

- 效果展示 

## 2.2 git

### git命令展示

#### 2.2.1 新建 Git 仓库并克隆

- 命令展示

git init 新建 Git 仓库

git clone https://github.com/KeepingMoving/work1.git 克隆

- 效果展示

```
lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git init
Initialized empty Git repository in E:/作业/系统开发基础/git/软件/Git/.git/

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git clone https://github.com/OI-wiki/OI-wiki
Cloning into 'OI-wiki'...
remote: Enumerating objects: 66228, done.
remote: Counting objects: 100% (945/945), done.
remote: Compressing objects: 100% (62/62), done.
remote: Total 66228 (delta 455), reused 926 (delta 445), pack-reused 65283 (from
1)
Receiving objects: 100% (66228/66228), 89.33 MiB | 2.71 MiB/s, done.
Resolving deltas: 100% (48101/48101), done.
```

#### 2.2.2 跟踪文件

- 命令展示

git status 查看当前仓库文件的状态。

git add 将指定的文件纳入到版本跟踪中

- 效果展示

```
lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git status
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

$ git add "Git"
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
```

### 2.2.3 分支

- 命令展示

git branch 命令可以创建分支

git switch 命令可以切换分支

git switch -c 命令可以创建分支并切换到这个新分支。

- 效果展示

```
MINGW64:/
$ git branch
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git switch
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git switch -c
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
```

### 2.2.4 分支的合并

- 命令展示

git merge 命令可以将该分支合并到当前分支上

- 效果展示

```
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git merge
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
```

### 2.2.5 修复最近的提交，但不创建新提交

- 命令展示 git reset --soft HEAD 1

git commit --amend

- 效果展示

```
$ git reset --soft HEAD~1
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git commit --amend
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
```

### 2.2.6 变基一个分支到另一个分支，并解决可能出现的冲突:

- 命令展示

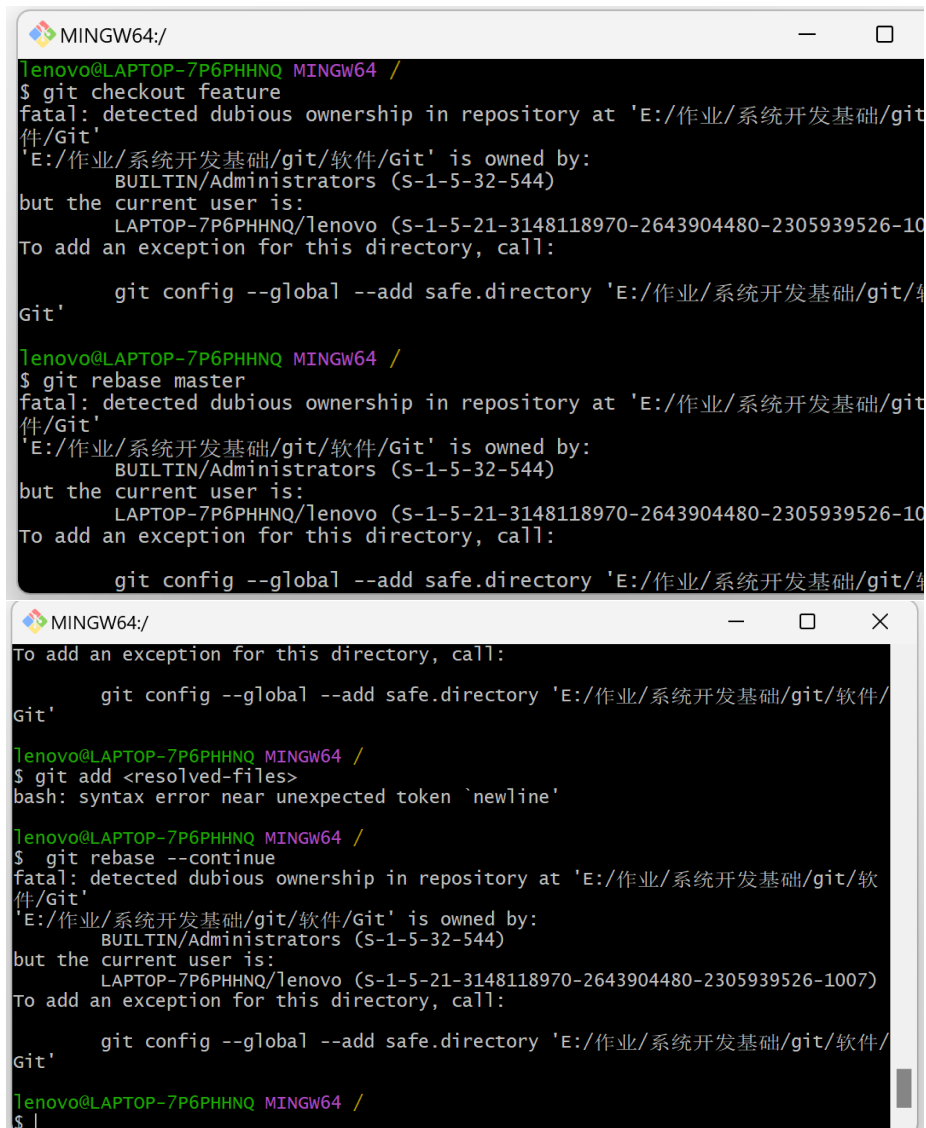
git checkout feature

git rebase master

如果有冲突，解决它们

```
git add ;resolved-files;
git rebase --continue
```

- 效果展示



```

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git checkout feature
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git rebase master
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git add <resolved-files>
bash: syntax error near unexpected token `newline'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git rebase --continue
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$

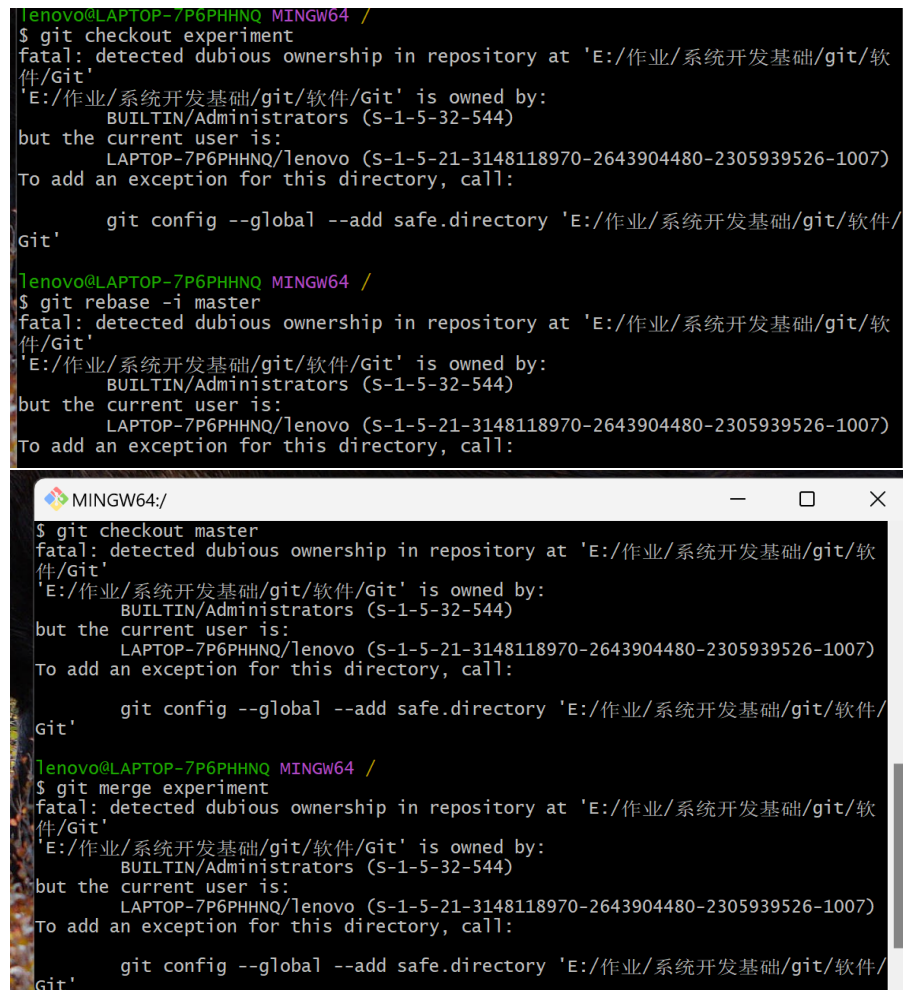
```

### 2.2.7 重写分支历史，使所有提交都成为主分支的一部分::

- 命令展示

git checkout experiment 切换到实验分支  
git rebase -i master 交互式变基到主分支  
编辑交互式变基的提交列表，保存退出  
git checkout master 切换回主分支  
git merge experiment 合并实验分支

- 效果展示



The image shows two screenshots of a Windows command prompt window titled 'MINGW64/'. The first screenshot shows the command 'git checkout experiment' failing with a 'fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'' error. It identifies the owner as 'BUILTIN\Administrators (S-1-5-32-544)' and the current user as 'LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)'. The solution provided is to run 'git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git''. The second screenshot shows the same error occurring for 'git rebase -i master' and 'git merge experiment', with the same solution being repeated.

```
lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git checkout experiment
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN\Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git rebase -i master
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN\Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git merge experiment
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN\Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

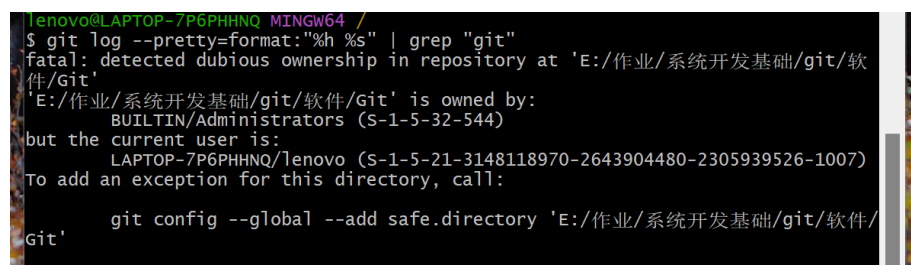
    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
```

## 2.2.8 使用 grep 搜索提交历史中的特定文本

- 命令展示

git log --pretty=format:"

- 效果展示



```
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git log --pretty=format:"%h %s" | grep "git"
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
```

### 2.2.9 交互式变基并修改一系列提交

- 命令展示 git checkout feature-branch 切换到功能分支  
git rebase -i HEAD 5 交互式变基最近5个提交  
编辑交互式变基的提交列表，选择要修改的提交  
git add "file" 添加修改后的文件  
git rebase --continue 继续变基

- 效果展示

```

$ git checkout feature-branch
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git rebase -i HEAD~5
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

$ git add "file"
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git rebase --continue
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

```

### 2.2.10 交互式变基并修改一系列提交

- 命令展示

```

#!/bin/bash

commit_to_pick=$1 # 第一个参数是提交哈希

git checkout master # 切换到主分支

if git cherry-pick $commit_to_pick; then
    echo "Cherry-pick successful."
else
    echo "Cherry-pick failed, aborting."
    git cherry-pick --abort

```



```
fi
```

- 效果展示

```
$ #!/bin/bash

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ commit_to_pick=$1

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git checkout master
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ if git cherry-pick $commit_to_pick; then
> echo "cherry-pick successful."
> else
> echo "cherry-pick failed, aborting."
> git cherry-pick --abort
```

图 4: 交互式变基的效果展示

### 2.2.11 使用脚本自动化 Pull Request 合并流程

- 命令展示

```
$ /bin/bash
$ pr_branch=1 # 第一个参数是 PR 分支名
$ git fetch origin # 获取远程分支
$ git checkout pr_branch # 切换到 PR 分支
if git merge origin/master; then
    $ git push origin pr_branch
else
    echo "Merge conflict detected."
fi
```

- 效果展示

```

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ #!/bin/bash

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ pr_branch=$1

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git fetch origin
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
    BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
    LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git checkout $pr_branch
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ if git merge origin/master; then
> git push origin $pr_branch
> else
> echo "Merge conflict detected."
> fi
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
    BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
    LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
Merge conflict detected.

```

### 2.2.12 创建一个标签的自动化脚本

- 命令展示

```

#!/bin/bash

tag_name=$1 # 第一个参数是标签名

git checkout master # 切换到主分支

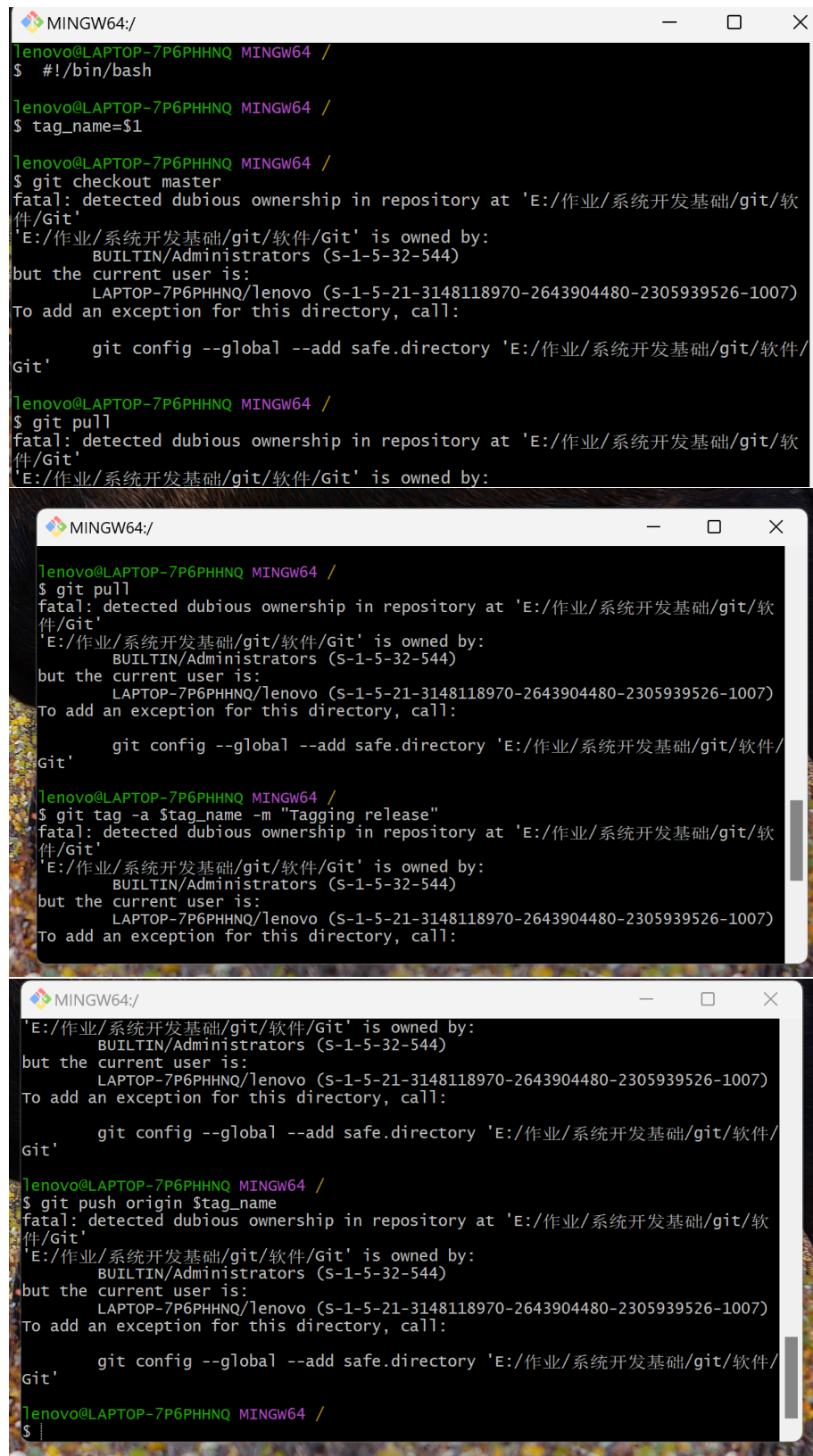
git pull          # 拉取最新代码

git tag -a $tag_name -m "Tagging release" # 创建带注释的标签

git push origin $tag_name # 推送标签到远程仓库

```

- 效果展示



```
MINGW64:/
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ #!/bin/bash

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ tag_name=$1

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git checkout master
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
    BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
    LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git pull
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
    BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
    LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git tag -a $tag_name -m "Tagging release"
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
    BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
    LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git push origin $tag_name
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
    BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
    LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

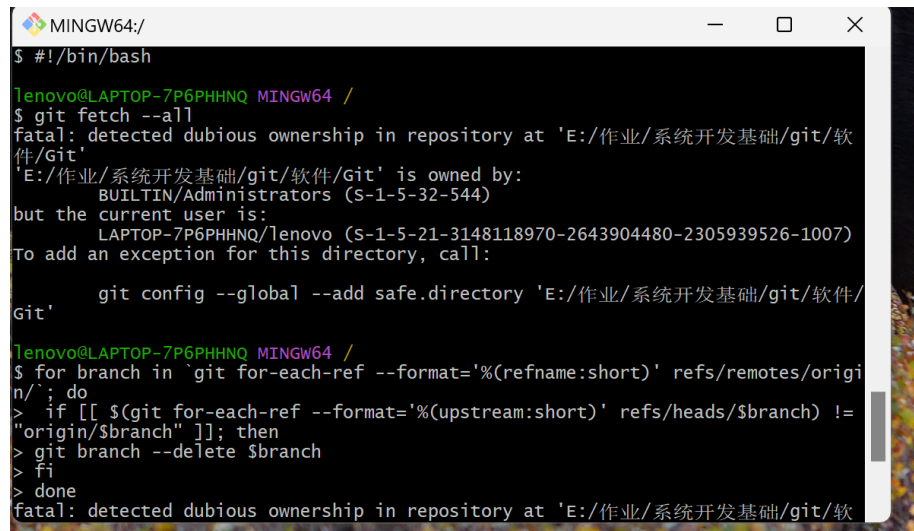
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$
```

### 2.2.13 使用脚本自动化删除过时的分支

- 命令展示

```
#!/bin/bash
git fetch --all # 获取所有分支信息
for branch in `git for-each-ref --format='% (refname:short)' refs/remotes/origin/`
do
    if [[ $(git for-each-ref --format='% (upstream:short)' refs/heads/$branch) != origin/$branch ]]; then
        git branch --delete $branch
    fi
done
```

- 效果展示



```
MINGW64:/
$ #!/bin/bash
lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ git fetch --all
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ for branch in `git for-each-ref --format='% (refname:short)' refs/remotes/origin/`; do
> if [[ $(git for-each-ref --format='% (upstream:short)' refs/heads/$branch) != origin/$branch ]]; then
> git branch --delete $branch
> fi
> done
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
```

图 5: 自动化删除过时分支的效果展示

### 2.2.14 使用脚本自动化检查分支是否落后于远程分支

- 命令展示

```
#!/bin/bash
git fetch origin # 抓取远程分支
```

```

for branch in `git for-each-ref --format='%(%refname:short)' refs/heads/`; do
    if git rev-list --count --left-right origin/master...$branch; then
        echo "$branch is behind origin/master"
    fi
done

```

- 效果展示

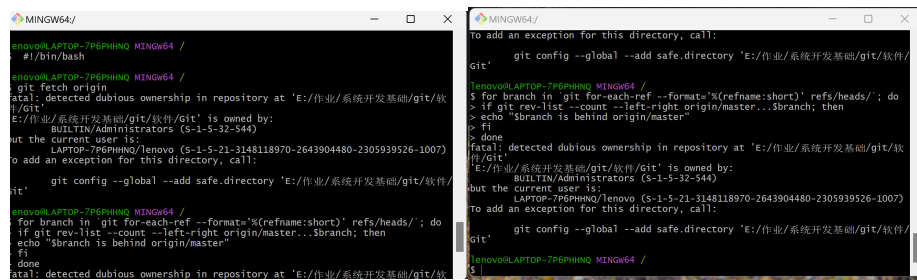


图 6: 效果展示1

图 7: 效果展示2

图 8: 自动化检查分支是否落后于远程分支的效果展示

- 命令展示

```

#!/bin/bash

if git diff-index --name-only HEAD | read; then
    echo "You have uncommitted changes."
    git status
else
    echo "No uncommitted changes."
fi

```

- 效果展示

A terminal window screenshot showing a git command being executed. The prompt is 'lenovo@LAPTOP-7P6PHNQ MINGW64 /'. The command is '\$ if git diff-index --name-only HEAD | read; then'. The output shows 'You have uncommitted changes.' followed by 'git status' and 'No uncommitted changes.'. Then a fatal error occurs: 'fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git''. The error message continues: 'E:/作业/系统开发基础/git/软件/Git' is owned by: BUILTIN/Administrators (S-1-5-32-544) but the current user is: LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)'. It then suggests adding an exception for this directory with the command 'git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git''. The terminal output ends with 'No uncommitted changes.'.

```
lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ #!/bin/bash

lenovo@LAPTOP-7P6PHNQ MINGW64 /
$ if git diff-index --name-only HEAD | read; then
> echo "You have uncommitted changes."
> git status
> else
>   echo "No uncommitted changes."
> fi
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:
    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
No uncommitted changes.
```

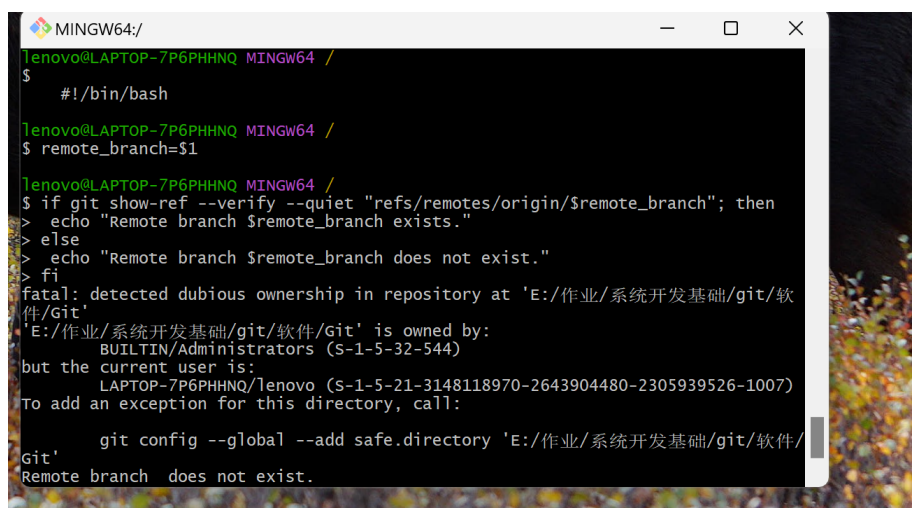
图 9: 检查未提交文件的效果展示

### 2.2.15 使用脚本自动化检查远程分支是否存在

- 命令展示

```
#!/bin/bash
remote_branch=$1 # 第一个参数是远程分支名
if git show-ref --verify --quiet "refs/remotes/origin/$remote_branch"; then
    echo "Remote branch $remote_branch exists."
else
    echo "Remote branch $remote_branch does not exist."
fi
```

- 效果展示



```

MINGW64:/
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$
$ #!/bin/bash

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ remote_branch=$1

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ if git show-ref --verify --quiet "refs/remotes/origin/$remote_branch"; then
> echo "Remote branch $remote_branch exists."
> else
> echo "Remote branch $remote_branch does not exist."
> fi
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
  BUILTIN/Administrators (S-1-5-32-544)
but the current user is:
  LAPTOP-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
Remote branch does not exist.

```

图 10: 检查远程分支是否存在的效果展示

### 3 困难与解决方案

#### 3.1 LaTeX

- 问题: 图片/表格插入跳行!!
- 解决方案: 通过float包解决
- 问题: 检查了好几个小时一直编译不通过!!!
- 解决方案: 因为aux文件没有完整输入, 导致上次编译结束后aux文件的部分内容缺失。删除编译文件夹内.aux扩展名结尾的文件, 重新用Latex命令进行编译, 自动生成正确的aux文件, 完成错误的修复。
- 问题: 编译成功但是目录消失了
- 解决方案: 多编译两次

#### 3.2 git

- 问题: 无法克隆

- 解决方案：问题是由于没有配置信任的服务器HTTPS验证。默认，cURL被设为不信任任何CAs，就是说，它不信任任何服务器验证。执行下面命令就可以解决  
`git config --global http.sslVerify false`
- 问题：切换分支报错：有文件未跟踪
- 解决方案：尝试删除项目，然后从新安装，或者直接从现有的项目中把文件夹复制过来
- 问题：git rm --cached 报错：recursively without -r
- 解决方案：命令加上-f即可
- 问题：同一个文件跟踪两次
- 解决方案：使用git rm --cached来取消对重命名之前的文件跟踪

## 4 心得体会

- LaTeX对于数学公式，定理等编辑较为友好，大部分的数学公式都能通过命令展示，且排版较为整洁，但LaTeX上手难度较高，且不如word这种可视化软件来得方便，通过代码来编写文档
- git可以极大地简化了代码的管理和协同工作流程，但是仍是上手较难有阵痛期，各种配置也相对来说较为麻烦，单人使用不推荐，多人协作还不错

## 5 github网址

GitHub仓库