



中国海洋大学

第一周实验报告

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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
\end{itemize}
```

```
\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}
\end {table}


\begin{table}
\center

\begin{tabular}{| l | r | r | r |}
\hline
City & \multicolumn{3}{c|}{Year} \\
\hline
& 2006 & 2007 & 2008 \\
\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) \quad \backslash\backslash \\
f(x) &= \sum_{i=0}^{\infty} \frac{f^{(i)}(0)}{i!} x^i \quad \backslash\backslash \\
x &= \sqrt{\frac{x-i}{z}} y\end{pre}
```


`\end{align}`

- 效果展示

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

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

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

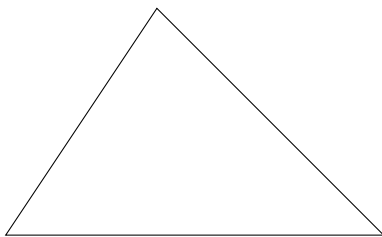
2.1.5 画简单图形

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]
\centering
\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

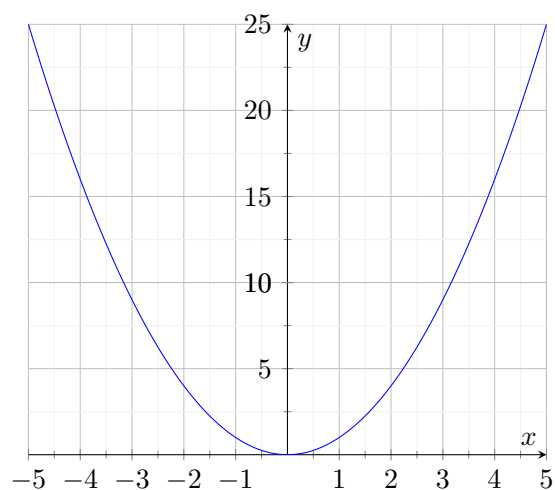


表 3: $y=x*x$

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^2} &
\end{bmatrix}

```

```
{\partial x \partial y} \\[8pt]
\dfrac{\partial^2 f}
{\partial x \partial y} &
\dfrac{\partial^2 f}{\partial y^2}
\end{bmatrix}
\]
```

- 效果展示

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

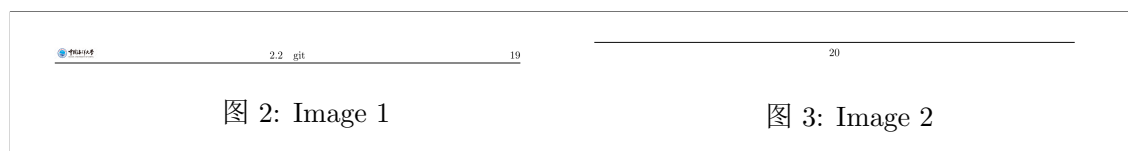
2.1.8 页眉页脚

1. 页眉页脚

- 命令展示

```
\pagestyle{fancy}
\fancyhf{}
\renewcommand{\headrulewidth}{1pt}
\renewcommand{\footrulewidth}{1pt}
\fancyhead[L]{\includegraphics[width=1.5cm]{okkl}}
\fancyhead[C]{\rightmark}
\fancyfoot[C]{\thepage}
\fancyhead[R]{\thepage}
```

- 效果展示



如文档所示

2.1.9 并排图

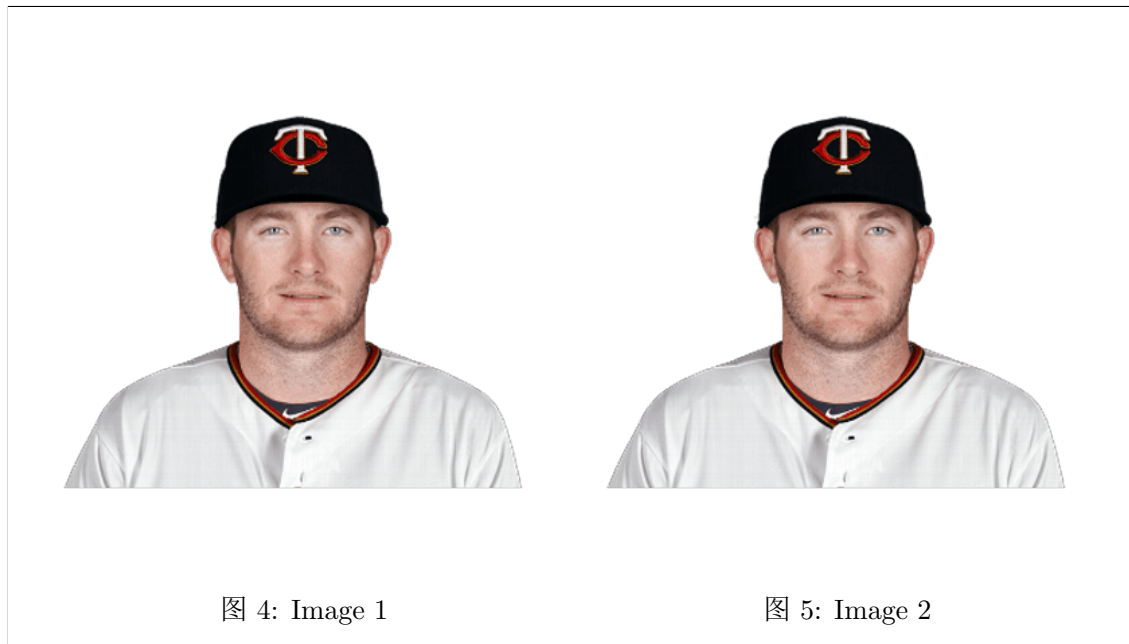
1. 并排图

- 命令展示

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

```
\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 & \\
\end{tabular}
```

```
\bottomrule
\end{tabular}
```

• 效果展示

			Numbers		
			1	2	3
Alphabet			A	B	C
Roman Numbers			I	II	III

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	c
	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 \\
= 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

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

- 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

2.1.18 积分图像

1. 积分图像

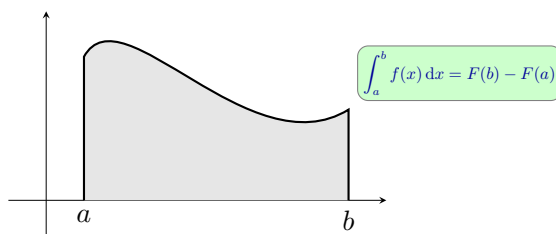
• 命令展示

```

\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

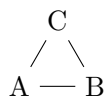
• 命令展示

```

\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}
\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-7P6PHHNO MINGW64 /
$ git init
Initialized empty Git repository in E:/作业/系统开发基础/git/软件/Git/.git/

lenovo@LAPTOP-7P6PHHNO 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-7P6PHHNQ 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-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 "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'
```

2.2.3 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-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 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-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 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-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 /
```

2.2.4 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

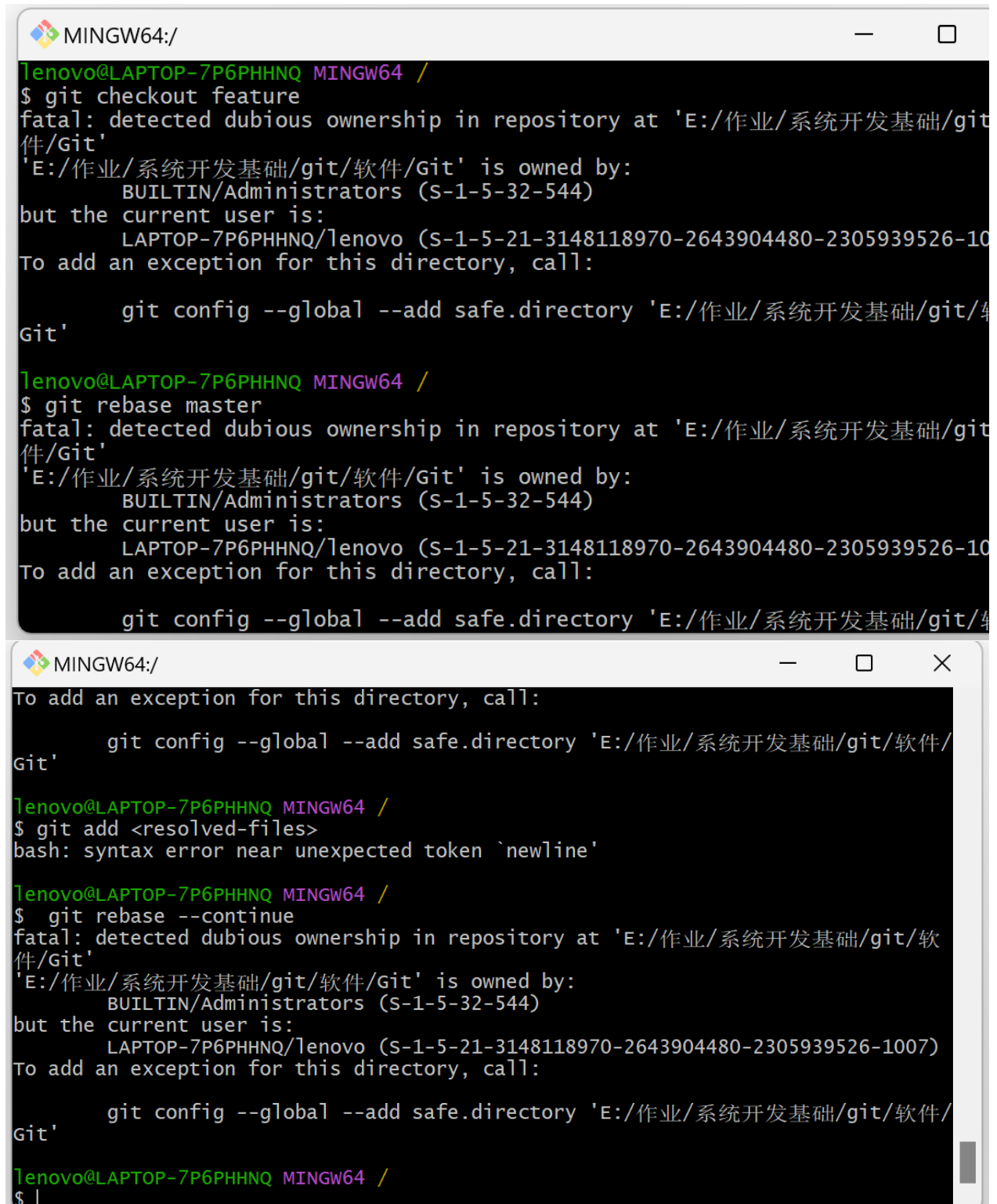
git rebase master

如果有冲突，解决它们

git add --resolved-files;

git rebase --continue

- 效果展示



```
MINGW64:/
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'

MINGW64:/
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

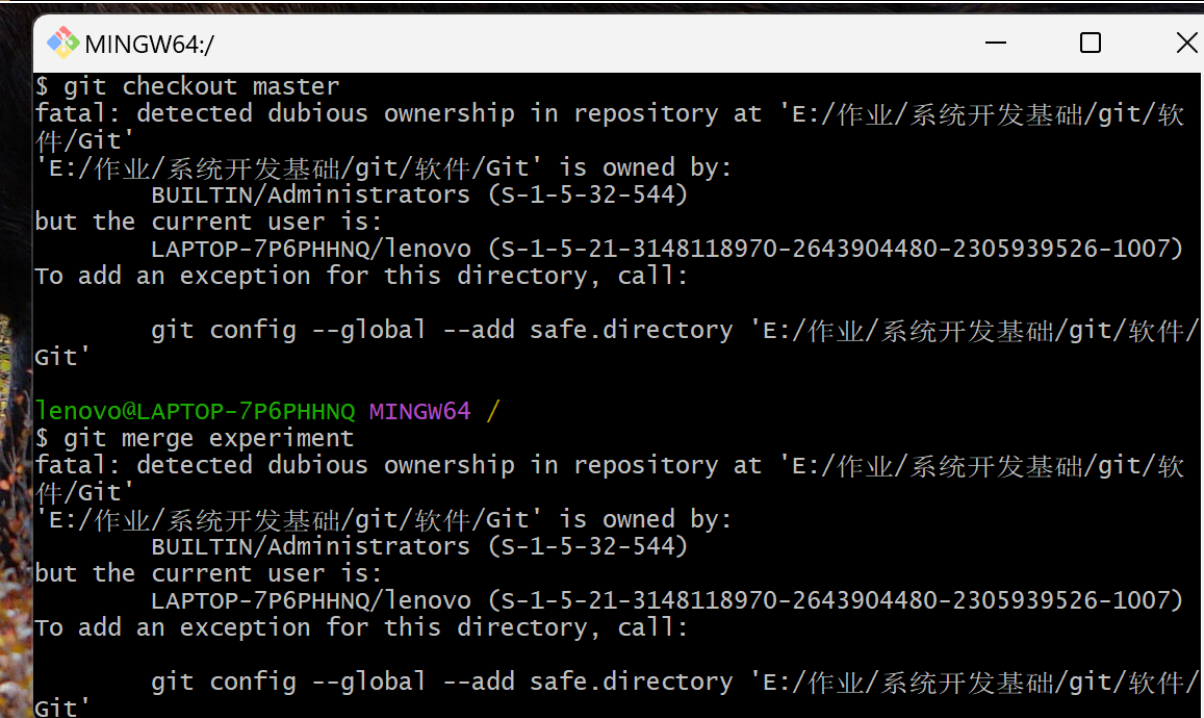
git merge experiment 合并实验分支

- 效果展示

```
lenovo@LAPTOP-7P6PHHNQ 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-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 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:
```



```
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 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-7P6PHHNQ/lenovo (S-1-5-21-3148118970-2643904480-2305939526-1007)
To add an exception for this directory, call:

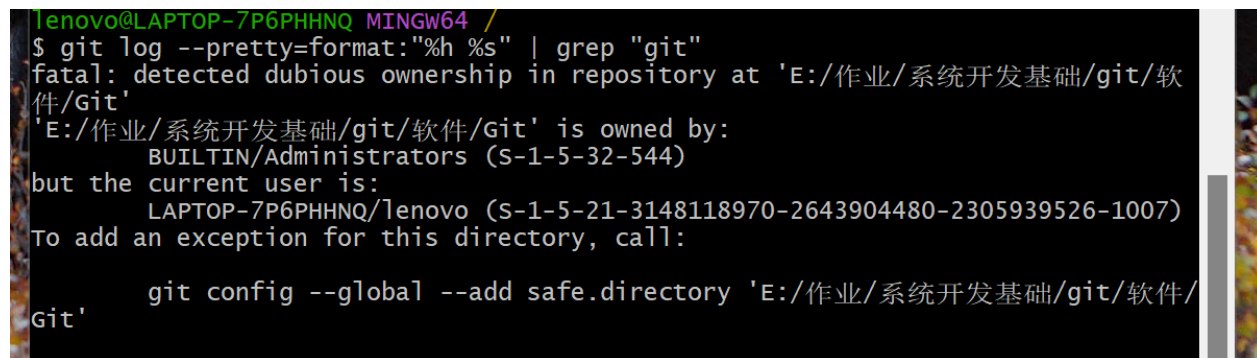
    git config --global --add safe.directory 'E:/作业/系统开发基础/git/软件/Git'
```

2.2.8 使用 grep 搜索提交历史中的特定文本

- 命令展示

```
git log --pretty=format:"%h %s"
```

- 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

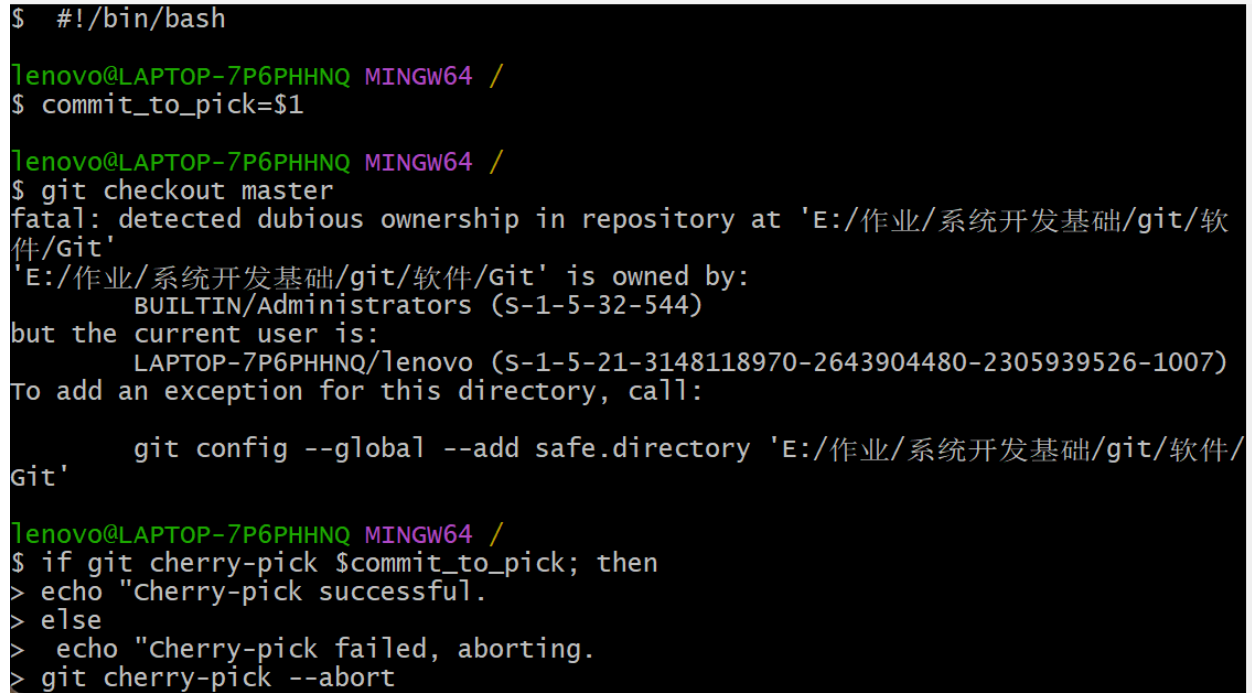
- 命令展示

```
#!/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-7P6PHNQ MINGW64 /
$ commit_to_pick=$1

lenovo@LAPTOP-7P6PHNQ 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-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 /
$ if git cherry-pick $commit_to_pick; then
> echo "Cherry-pick successful."
> else
> echo "cherry-pick failed, aborting."
> git cherry-pick --abort
```

图 6: 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-7P6PHHNQ MINGW64 /
$ #!/bin/bash

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

lenovo@LAPTOP-7P6PHHNQ 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-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 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-7P6PHHNQ 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-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'
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:
```

```
MINGW64:/
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:
```

```
MINGW64:/
'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'

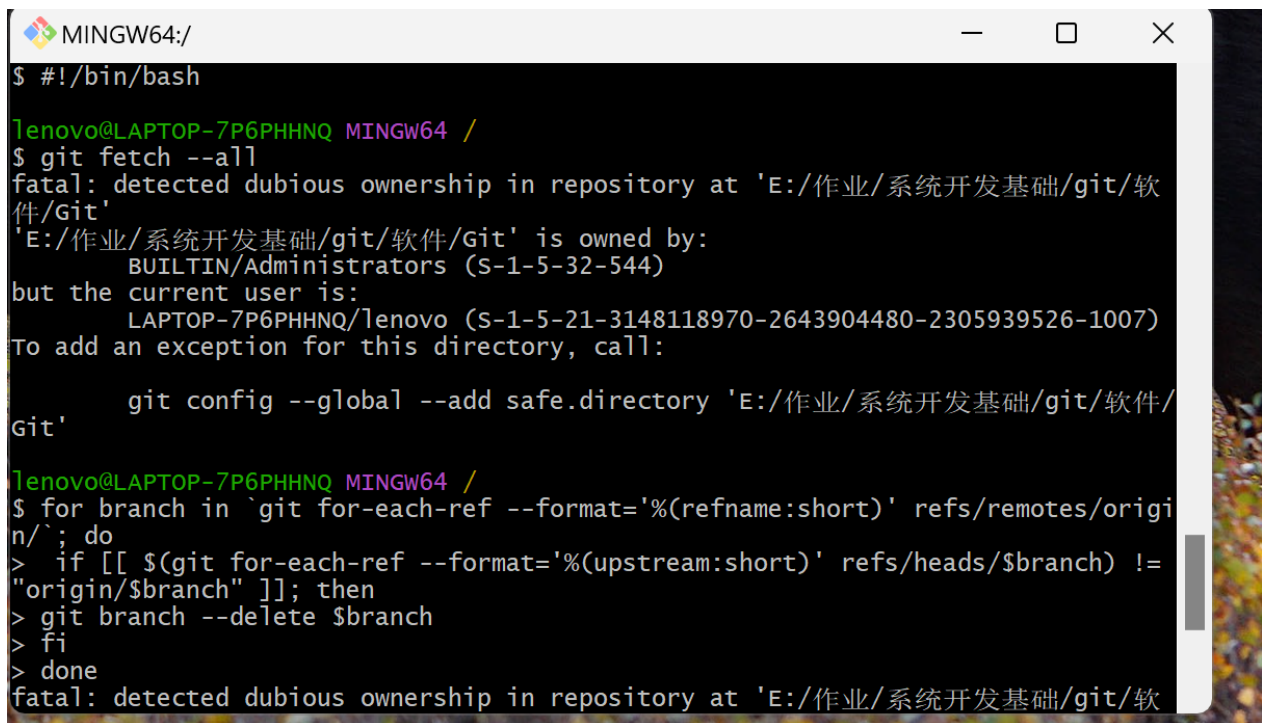
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git push origin $tag_name
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
'E:/作业/系统开发基础/git/软件/Git' is owned by:
```

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-7P6PHHNQ 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-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 /
$ 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 7: 自动化删除过时分支的效果展示

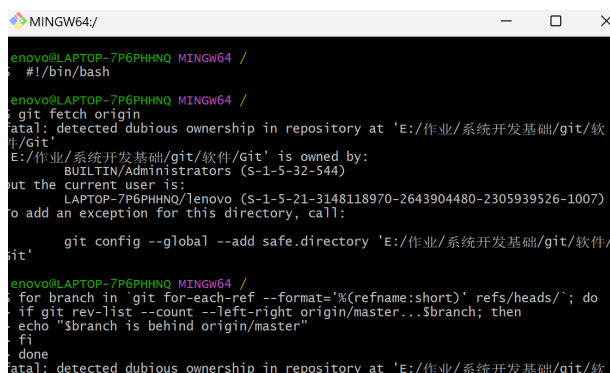
2.2.14 使用脚本自动化检查分支是否落后于远程分支

- 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
```

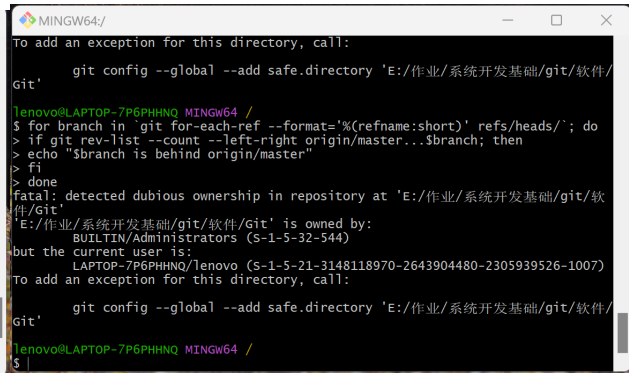
```
    echo "$branch is behind origin/master"
fi
done
```

- 效果展示



```
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ #!/bin/bash
lenovo@LAPTOP-7P6PHHNQ 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-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 /
$ 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
fatal: detected dubious ownership in repository at 'E:/作业/系统开发基础/git/软件/Git'
```

图 8: 效果展示1



```
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 /
$ 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
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 /
$
```

图 9: 效果展示2

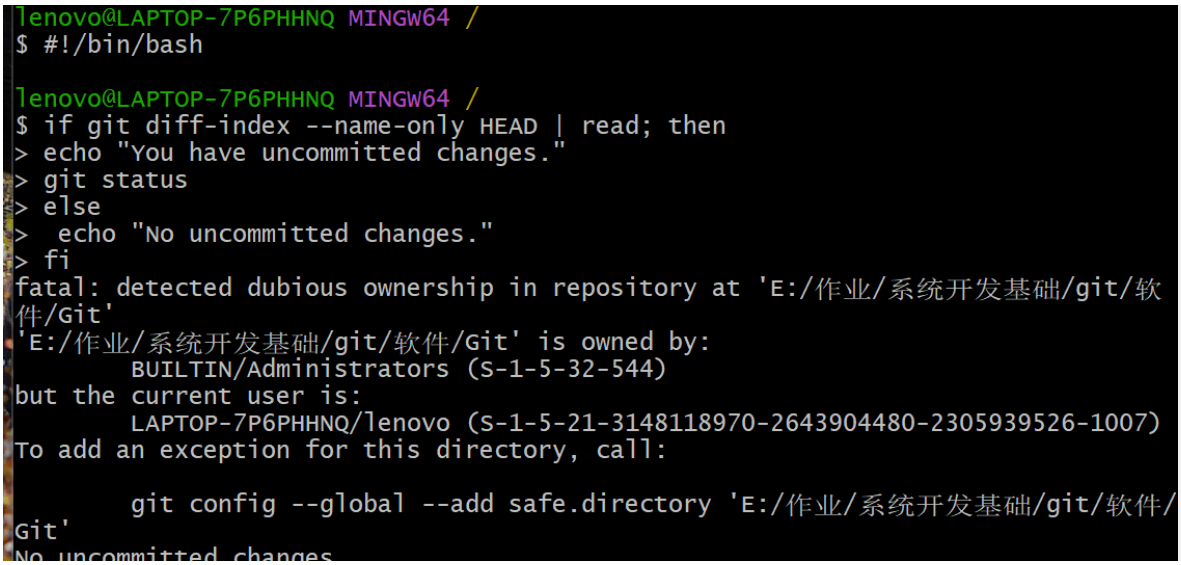
图 10: 自动化检查分支是否落后于远程分支的效果展示

2.2.15 检查Git仓库中是否有未提交的更改

- 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



```
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
```

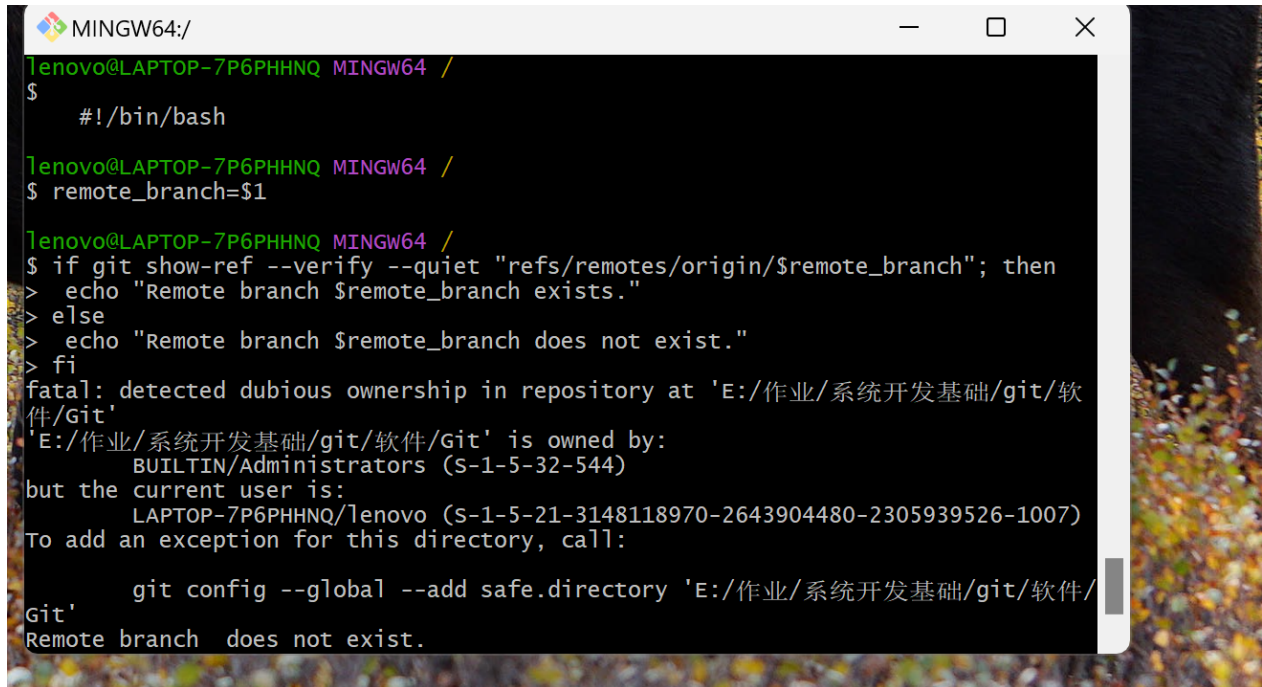
图 11: 检查未提交文件的效果展示

2.2.16 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.
```

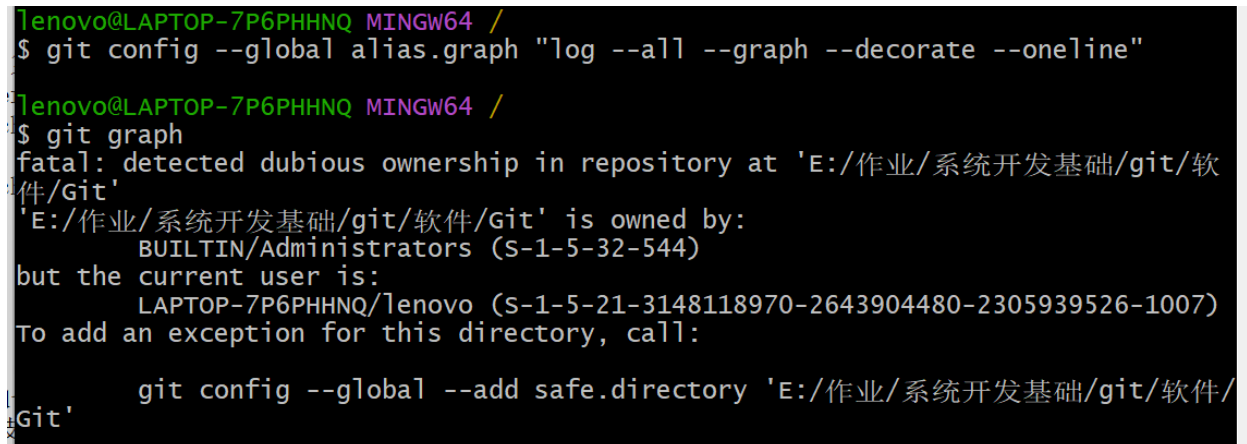
图 12: 检查远程分支是否存在的效果展示

2.2.17 使用命令来添加别名

- 命令展示

```
git config --global alias.graph "log --all --graph --decorate --oneline"
```

- 效果展示



```
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git config --global alias.graph "log --all --graph --decorate --oneline"

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git graph
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'
```

图 13: 添加别名

2.2.18 设置全局 gitignore 文件以忽略特定于操作系统或特定于编辑器的文件临时文件

- 命令展示

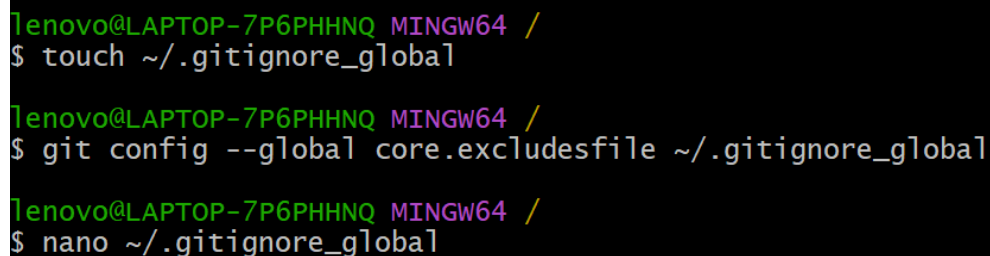
```
touch ~/.gitignore_global
git config --global core.excludesfile ~/.gitignore_global
# MacOS系统文件
.DS_Store

# Windows系统文件
Thumbs.db
ehthumbs.db
Desktop.ini

# 编辑器临时文件
*~
*.swp
*.swo
.idea/
.vscode/
*.bak

# Node.js
node_modules/
```

- 效果展示

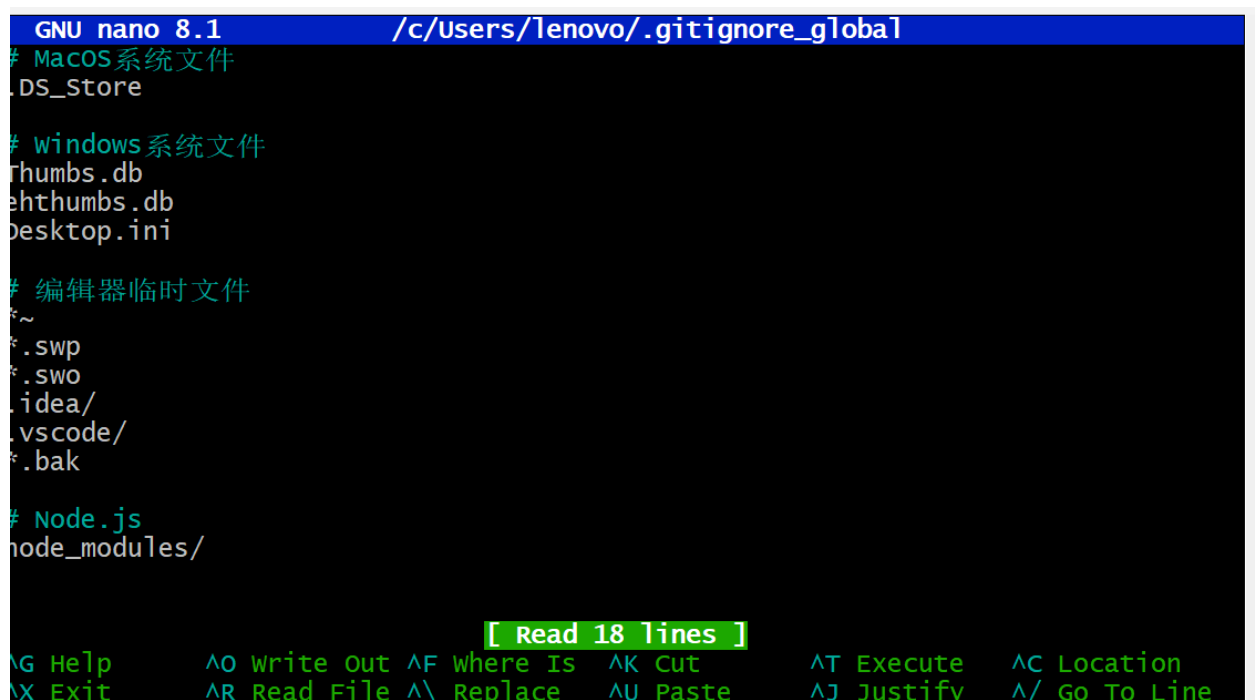


```
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ touch ~/.gitignore_global

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git config --global core.excludesfile ~/.gitignore_global

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ nano ~/.gitignore_global
```

图 14: 忽略特定于操作系统或特定于编辑器的文件临时文件



```
GNU nano 8.1 /c/Users/lenovo/.gitignore_global
# MacOS系统文件
.DS_Store

# windows系统文件
Thumbs.db
ehthumbs.db
desktop.ini

# 编辑器临时文件
*.swp
*.swo
.idea/
.vscode/
*.bak

# Node.js
node_modules/

[ Read 18 lines ]
^G Help      ^O Write Out ^F Where Is  ^K Cut       ^T Execute   ^C Location
^X Exit      ^R Read File ^\ Replace   ^U Paste     ^J Justify   ^_ Go To Line
```

图 15: 忽略特定于操作系统或特定于编辑器的文件临时文件

2.2.19 为 GitHub 仓库提交一个有用的 Pull Request

- 命令展示

```
git clone https://github.com/KeepingMoving/work1.git
cd work1
git checkout -b fix-typo
git add <modified-files>
git commit -m "Fix typo in README.md"
git push origin fix-typo
```

- 效果展示

```
$ git checkout -b fix-typo
Switched to a new branch 'fix-typo'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1/work1 (fix-typo)
$ git add <modified-files>
bash: syntax error near unexpected token `newline'

lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1/work1 (fix-typo)
$ git commit -m README.md
On branch fix-typo
nothing to commit, working tree clean

lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1/work1 (fix-typo)
$ git push origin fix-typo
Total 0 (delta 0), reused 0 (delta 0), pack-reused 0 (from 0)
remote:
remote: Create a pull request for 'fix-typo' on GitHub by visiting:
remote:   https://github.com/KeepingMoving/work1/pull/new/fix-typo
remote:
To https://github.com/KeepingMoving/work1.git
 * [new branch]      fix-typo -> fix-typo
```

图 16: 提交一个有用的 Pull Request

2.2.20 查看最后一个修改的人

- 命令展示

```
git clone https://github.com/KeepingMoving/work1.git
cd work1
git log --graph --oneline --all
git log -1 -- README.md
git blame _config.yml
git show 09c08a2
```

- 效果展示

```
MINGW64:/work1
lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ git clone https://github.com/KeepingMoving/work1.git
Cloning into 'work1'...
remote: Enumerating objects: 87, done.
remote: Counting objects: 100% (87/87), done.
remote: Compressing objects: 100% (85/85), done.
remote: Total 87 (delta 4), reused 0 (delta 0), pack-reused 0 (from 0)
Receiving objects: 100% (87/87), 10.50 MiB | 7.25 MiB/s, done.
Resolving deltas: 100% (4/4), done.

lenovo@LAPTOP-7P6PHHNQ MINGW64 /
$ cd work1

lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1 (main)
$ git log --graph --oneline --all
* 4027c5a (HEAD -> main, origin/main, origin/HEAD) Add files via upload
* 2b469a9 Add files via upload
* 09c08a2 Initial commit

lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1 (main)
$ git log -1 -- README.md
commit 09c08a2edec29c3f670b010a5da8fa1fc1b04646
Author: MOVE Forever <3322642247@qq.com>
Date:   Fri Aug 23 10:31:28 2024 +0800
```

图 17: 查看最后一个修改的人

```
lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1 (main)
$ git show 09c08a2
commit 09c08a2edec29c3f670b010a5da8fa1fc1b04646
Author: MOVE Forever <3322642247@qq.com>
Date:   Fri Aug 23 10:31:28 2024 +0800

    Initial commit

diff --git a/README.md b/README.md
new file mode 100644
index 0000000..99015ab
--- /dev/null
+++ b/README.md
@@ -0,0 +1,2 @@
+# work1
+系统开发基础课程work

lenovo@LAPTOP-7P6PHHNQ MINGW64 /work1 (main)
$ |
```

图 18: 查看最后一个修改的人

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：编译成功但是目录没有显示
- 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。

- 通过本次学习我对LaTex和git有了一定的认识，LaTex和git都是十分有用的工具，山积则高，泽积则深，千里之行始于足下，希望在今后的学习中我能更加熟练地掌握LaTex和git这两个有用的工具。

5 github网址

GitHub仓库