

系统开发工具基础课程实验报告

姓名：张誉馨

2024 年 9 月 4 日

目录

1	练习内容和结果	1
1.1	Git	1
1.2	LaTeX	6
2	解题感悟	7
3	参考链接	9
4	github链接	9

1 练习内容和结果

1.1 Git

1.克隆课程网站的仓库

```
MINGW64/e/gitku/missing-semester-cn.github.io
lenovoLAPTOP-ACBGFUTR MINGW64 ~ (master)
$ cd "E:\gitku"
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku
$ git clone https://github.com/missing-semester-cn/missing-semester-cn.github.io
git
Cloning into 'missing-semester-cn.github.io'...
remote: Enumerating objects: 3194, done.
remote: Counting objects: 100% (3194/3194), done.
remote: Compressing objects: 100% (1126/1126), done.
remote: Total 3194 (delta 2040), reused 2735 (delta 2033), pack-reused 0 (from 0)
Receiving objects: 100% (3194/3194), 15.44 MiB | 1.72 MiB/s, done.
Resolving deltas: 100% (2040/2040), done.
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku
$ cd "E:\gitku\missing-semester-cn.github.io"
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ |
```

图 1: 克隆仓库

2.将版本历史可视化并进行探索

git log - -all - -graph - -decorate

```
MINGW64/e/gitku/missing-semester-cn.github.io
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git log --all --graph --decorate
commit 4781f1a5a27c99e4474d906e3f73dd9bd45f (HEAD -> master, origin/master, origin/HEAD)
Merge: d63f3dd 9baa46c
Author: Lingfeng_Ai <hanxiama@gmail.com>
Date: Fri Aug 16 08:14:18 2024 +0800

Merge pull request #172 from pspdada/master

Thank you so much

* commit 9baa46c7780121641794e60725118941f1743b
Author: psp_dada <1824427008@qq.com>
Date: Thu Aug 15 02:07:38 2024 +0800

remove irrelevant text

* commit f1d7f689ac772a183661ccf6ea787aafbf9bf
Author: psp_dada <1824427008@qq.com>
Date: Thu Aug 15 01:46:12 2024 +0800

fix wrong index

* commit efb21ff5409ff774cc03f413044a3d2c84cd12
Author: psp_dada <1824427008@qq.com>
Date: Thu Aug 15 01:32:44 2024 +0800

fix typo

* commit d5f3d337c8e8bb78f802a215e52a65d7ce70d5
Merge: d254d9e 8a704a4
Author: Lingfeng_Ai <hanxiama@gmail.com>
Date: Thu Aug 1 17:59:28 2024 +0800
```

图 2: 版本历史可视化

3.是谁最后修改了 README.md 文件?

git log -1 README.md

(-x 选项：查看最新的 x 次提交或特定文件的版本信息)

```
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git log -1 README.md
commit d698852ef0604cf918bab7f39c63a53932c845d8
Author: yuzq <yuzq@sunwayworld.com>
Date: Thu Jun 6 14:43:07 2024 +0800

将readme文件中的url的绝对路径改为相对路径，不用重复访问github，利于分享传播
```

图 3: 查看最后修改

4.最后一次修改_config.yml 文件中 collections:行时的提交信息是什么？

```
git blame _config.yml | grep collections
```

```
git show -p --pretty=format:"%s" a88b4eac | head -1
```

```
lenovoLAPTOP-AC8GRUTR MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git blame _config.yml | grep collections
a88b4eac (Anish Athalye 2020-01-17 15:26:30 -0500 18) collections:
lenovoLAPTOP-AC8GRUTR MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git show --pretty=format:"%s" a88b4eac | head -1
redo lectures as a collection
```

图 4: 输入命令查看提交信息

```
MINOW64 /e/gitku/missing-semester-cn.github.io
commit 01998a01c0c12c01e68f8f1346c082c8015 (HEAD -> master)
Author: zyx <zyx@2988882718@qq.com>
Date: Thu Aug 29 14:16:15 2024 +0800
    add password123 to file

commit a7054f1aa2f239e4474d9b63f73d9bd145f (origin/master, origin/HEAD)
Merge: d59f3dd 9baa48c
Author: linyfeng_Ai <danxiaomax@gmail.com>
Date: Fri Aug 16 06:54:16 2024 +0800
    Merge pull request #172 from pspada/master
    Thank you so much

commit 9baa48c778012164179e4e0725418941fa12743b
Author: psp.pada <182442706@qq.com>
Date: Thu Aug 15 02:07:36 2024 +0800
    remove irrelevant text

commit f5df7d4959c771243365ccf6a787aafef90f
Author: psp.pada <182442706@qq.com>
Date: Thu Aug 15 01:46:12 2024 +0800
    fix wrong index

commit efa2f73409fff746c03f623306e3dc634cd12
Author: psp.pada <182442706@qq.com>
Date: Thu Aug 15 01:32:44 2024 +0800
    fix typo

commit d59f3dd37c688b78f802a435e51a5d7ce70d5
Merge: d284d3e 6e26b4a
Author: linyfeng_Ai <danxiaomax@gmail.com>
Date: Thu Aug 1 17:58:28 2024 +0800
    Merge pull request #171 from HowieChih/for-better-understanding
    翻译优化: For better understanding
```

图 5: 输出提交信息

5.使用 Git 时的一个常见错误是提交本不应该由 Git 管理的大文件，或是将含有敏感信息的文件提交给 Git 。尝试向仓库中添加一个文件并添加提交信息，然后将其从历史中删除。

首先提交一些敏感信息

```
echo "password123">my_password
```

```
git add .
```

```
git commit -m "add password123 to file"
```

```
git log HEAD
```

6.接上一问，将其从历史中删除。

```
git filter-branch --force --index-filter
```

```
'git rm --cached --ignore-unmatch ./my_password'
```

```
- -prune-empty - -tag-name-filter cat - - -all
```

```
MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ echo 'password123'>my_password
$ git add .
$ git commit -m "add password123 to file"
$ git log HEAD
warning: in the working copy of 'my_password', LF will be replaced by CRLF the next time Git touches it
[master 03996a0] add password123 to file
1 file changed, 1 insertion(+)
create mode 100644 my_password
commit 03996a051cb242c07368fb41f3548c082cab15 (HEAD -> master)
Author: zyxcyheer <238351739@qq.com>
Date: Thu Aug 29 14:16:15 2024 +0800

    add password123 to file

commit af054fa1aa2f2599e4474d96b63f73dd9bd145f (origin/master, origin/HEAD)
Merge: dd9f3dd 9baa48c
Author: lingfang.Ai <shankuamx@gmail.com>
Date: Fri Aug 16 06:54:16 2024 +0800

    Merge pull request #172 from pspdada/master

    Thank you so much

commit 9baa48c77801264179e4e60725418941f41743b
Author: psp_dada <1824417008@qq.com>
Date: Thu Aug 15 02:07:36 2024 +0800

    remove irrelevant text

commit f5df7d489dc7712483683cc6fe8a787aafbef9bf
Author: psp_dada <1824417008@qq.com>
Date: Thu Aug 15 01:46:12 2024 +0800

    fix wrong index
```

图 6: 提交敏感信息

```
MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git filter-branch --force --index-filter 'git rm --cached --ignore-unmatch /my_password' \
  --prune-empty --tag-name-filter cat -- --all
WARNING: git-filter-branch has a glut of gotchas generating tangled history
rewritten, via:
  1. git rebase --onto <new base> <old base>
  2. git filter-branch --index-filter 'git rm --cached --ignore-unmatch /my_password'
  3. git push
alternative filtering tool such as 'git filter-repo'
https://github.com/newren/git-filter-repo instead. See the
filter-branch manual page for more details; to squelch this warning,
set FILTER_BRANCH_SQUELCH_WARNING=1.
Proceeding with filter-branch...
Rewrite 03996a051cb242c07368fb41f3548c082cab15 (832/833) (365 seconds passed, remaining 0 predicted) rm 'my_password'
Ref 'refs/heads/master' was rewritten
Ref 'refs/remotes/origin/master' was rewritten
Ref 'refs/remotes/origin/dependabot/bundler/active-support-5.0.6.1' was rewritten
Ref 'refs/remotes/origin/dependabot/bundler/addressable-2.4.1' was rewritten
Ref 'refs/remotes/origin/dependabot/bundler/rack-2.1.1' was rewritten
Ref 'refs/remotes/origin/dependabot/bundler/rack-2.1.1' was rewritten
Ref 'refs/remotes/origin/master' was rewritten
Ref 'refs/remotes/origin/review' was rewritten
MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ ls
LICENSE.md _layouts/ favicon-16x16.png index.md robots.txt
dot.html dotenv.lock _2020/ _includes/ favicon-32x32.png lecture.html static/
README.md _config.yml _includes/ apple-touch-icon.png favicon.ico license.md
Gemfile _2019/
```

图 7: 从历史中删除

7.从 GitHub 上克隆某个仓库, 修改一些文件。当您使用 git stash 会发生什么?

8.接上一问, 当您执行 git log -all -oneline 时会显示什么?

9.接上一问, 通过 git stash pop 命令来撤销 git stash 操作

```
MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ echo '123'>123
MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git add .
warning: in the working copy of '123', LF will be replaced by CRLF the next time Git touches it
$ git status
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   123
    new file:   123

MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git stash
Saved working directory and index state WIP on master: af054fa Merge pull request #172 from pspdada/master
MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ git log -all -oneline
On branch master
Your branch is up to date with 'origin/master'.

Changes to be committed:
  (use "git restore --staged <file>..." to unstage)
    new file:   123
    new file:   123

Dropped refs/stash@{0} (c98d369dbc6d811eb66fb070a81932061ad713)
```

图 8: git stash 以及撤销

10.与其他的命令行工具一样, Git 也提供了一个名为 /.gitconfig 配置文件 (或 dotfile)。请在 /.gitconfig 中创建一个别名, 使您在运行 git graph 时, 您可以得到 git log -all -graph -decorate -oneline 的输出结果

11.分解上一问，首先打开 /.gitconfig文件

nano /.gitconfig

```
enovo@LAPTOP-AC9GFUTR MINGW64 /e/gitku/missing-semester-cn.github.io (master)
$ nano ~/.gitconfig
```

图 9: 打开 /.gitconfig文件

12.继续分解第10问，11问之后在打开的文件中添加别名配置，将以下内容添加到文件中

[alias]

graph = log - --all - -graph - -decorate - -oneline

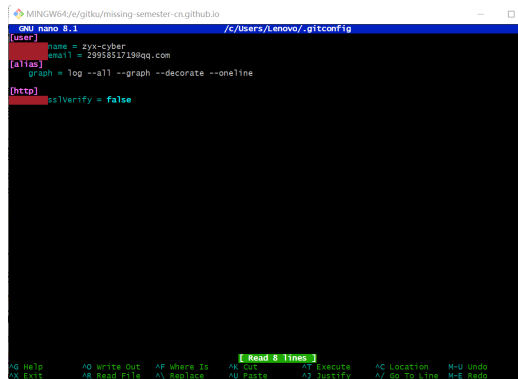


图 10: 在打开的文件中添加别名配置

13.继续10问，运行git graph，输出结果

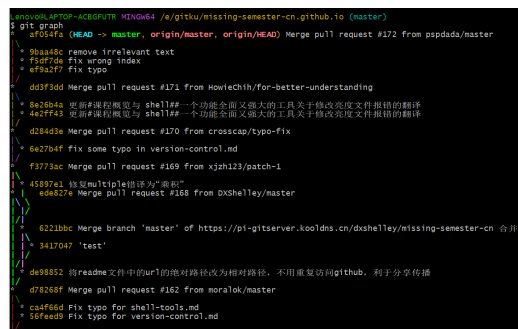


图 11: 运行git graph

14.继续10问，运行git log -all -graph -decorate -oneline，并与运行git graph之后的结果进行比对

```
MINGW64 ~/e/git/missing-semester-cn.github.io (master)
$ git log --all --graph --decorate --oneline
3f091fa (HEAD -> master, origin/master, origin/HEAD) Merge pull request #172 from pspada/master
* 8ba448c remove irrelevant text
* f5d77de fix wrong index
* ef9a27f fix typo
d63f3dd Merge pull request #171 from HowieChih/for-better-understanding
* 6e2b94a 更新#源代码仓库与 shell# 一个功能全面又强大的工具关于修改文件报错的翻译
* 6e27f43 更新#源代码仓库与 shell# 一个功能全面又强大的工具关于修改文件报错的翻译
d284d1e Merge pull request #170 from crosscap/typo-fix
* 6e27b4f fix some typo in version-control.md
f3773ac Merge pull request #169 from xjzh123/patch-1
* 45897e1 修复multiple翻译为“乘积”
* e6a327e Merge pull request #168 from DXShelley/master
622bbcc Merge branch 'master' of https://pi-gitserver.kooldns.cn/dxshelley/missing-semester-cn 合并
3417047 'test'
4e98852 将readme文件中的url的绝对路径改为相对路径，不用重复访问github，利于分享传播
d7826af Merge pull request #162 from moralek/master
* 6e27f43 更新#源代码仓库与 shell# 一个功能全面又强大的工具关于修改文件报错的翻译
```

图 12: 运行git log - -all - -graph - -decorate - -oneline

发现二者运行结果一致

15.您可以通过执行 git config -global core.excludesfile /.gitignore_global 在 /.gitignore_global 中创建全局忽略规则。配置您的全局 gitignore 文件来自动忽略系统或编辑器的临时文件，例如 .DS_Store

git config -global core.excludesfile ~/.gitignore .DS_Store

```
MINGW64 /e/git/missing-semester-cn.github.io
$ git config --global core.excludesfile /.gitignore .DS_Store
error: unknown option 'global'core.excludesfile/.gitignore
Usage: git config [->global|local|system] [->file|blob] [->type] [->name] [->value]
or: git config get [->file|blob] [->type] [->name] [->value]
or: git config set [->file|blob] [->type] [->name] [->value]
or: git config unset [->file|blob] [->type] [->name]
or: git config rename-section [->file|blob] [->old-name] [->new-name]
or: git config remove-section [->file|blob] [->name]
or: git config add [->file|blob] [->name] [->value]
or: git config edit [->file|blob] [->name]
or: git config [->file|blob] --get-colorbool <name> [--stdout-is-tyt]

config file location
--[no-]global use global config file
--[no-]system use system config file
--[no-]local use repository config file
--[no-]worktree use per-worktree config file
-f, --[no-]file <file> use given config file
--[no-]blob <blob-id> read config from given blob object

action
--get get value: name [value-pattern]
--get-all get all values: key [value-pattern]
--get-regexp get values for regexp: name-regexp [value-pattern]
--get-urlmatch get value specific for the url: section[.var] url
--replace-all replace all matching variables: name value [value-pattern]
--add add a new variable: name value
--unset remove a variable: name [value-pattern]
--unset-all remove all matches: name [value-pattern]
--rename-section rename section: old-name new-name
--remove-section remove a section: name
--list list all
-e, --edit open an editor
--get-color find the color configured: slot [default]
--get-colorbool find the color setting: slot [--stdout-is-tyt]

display options
```

图 13: 创建全局忽略规则

16.设置用户名和邮箱

git config -global user.name "你的用户名"

git config -global user.email "你的邮箱地址"

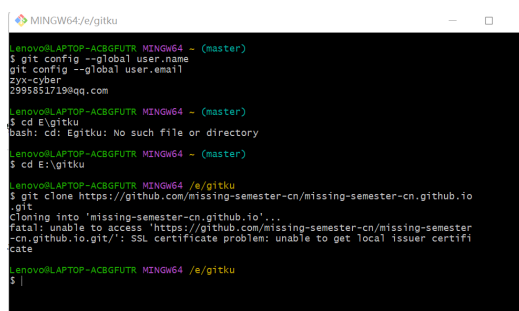
替换 "你的用户名" 和 "你的邮箱地址" 为你实际的用户名和邮箱地址。

-global 选项表示这些设置将应用于所有Git仓库。如果你只想对当前仓库设置不同的用户名和邮箱，可以去掉 -global 选项。

17.验证设置：可以通过以下命令检查设置是否成功：

```
git config -global user.name
```

```
git config -global user.email
```



```
MINGW64 ~/gitku
lenovoLAPTOP-ACBGFUTR MINGW64 ~ (master)
$ git config --global user.name
git config --global user.email
zyx-cyber
2995851719@qq.com
lenovoLAPTOP-ACBGFUTR MINGW64 ~ (master)
$ cd E:\gitku
bash: cd: E:\gitku: No such file or directory
lenovoLAPTOP-ACBGFUTR MINGW64 ~ (master)
$ cd E:\gitku
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku
$ git clone https://github.com/missing-semester-cn/missing-semester-cn.github.io
.git
Cloning into 'missing-semester-cn.github.io'...
fatal: unable to access 'https://github.com/missing-semester-cn/missing-semester-cn.github.io.git/': SSL certificate problem: unable to get local issuer certificate
lenovoLAPTOP-ACBGFUTR MINGW64 /e/gitku
$ |
```

图 14: 验证设置的用户名和邮箱

1.2 LaTeX

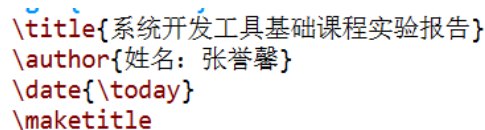
1.构建文档框架



```
1 \documentclass[a4paper, 12pt]{article}
2
3 \begin{document}
4   A sentence of text.
5 \end{document}
```

图 15: 构建文档框架

2.添加文档标题



```
\title{系统开发工具基础课程实验报告}
\author{姓名: 张誉馨}
\date{\today}
\maketitle
```

图 16: 添加文档标题

3.添加文档章节

4.在文档中创建目录

```

1 | \section{Introduction}
2 | This is the introduction.
3 |
4 | \section{Methods}
5 |
6 | \subsection{Stage 1}
7 | The first part of the methods.
8 |
9 | \subsection{Stage 2}
10 | The second part of the methods.
11 |
12 | \section{Results}
13 | Here are my results.

```

图 17: 添加文档章节

```

\pagenumbering{roman}
\tableofcontents
\newpage
\pagenumbering{arabic}

```

图 18: 在文档中创建目录

在 maketitle 之后输入图18中所示内容：

5. 中文字体支持

只需要在文档的前导命令部分添加：

```

1 | \usepackage[UTF8]{ctex}

```

图 19: 中文字体支持

6. 特殊字符

例如下图中_需要添加转义字符

7. 添加图表

这里我们需要引入 graphicx 包。图片应当是 PDF, PNG, JPEG 或者 GIF 文件，详情请见文档末尾的github链接

2 解题感悟

这次实验对我来真的是一场洗礼了，它让我接触了Git、Github以及Latex排版系统。一开始面对这个实验的时候我是一无所知的，甚至有些手足无措。

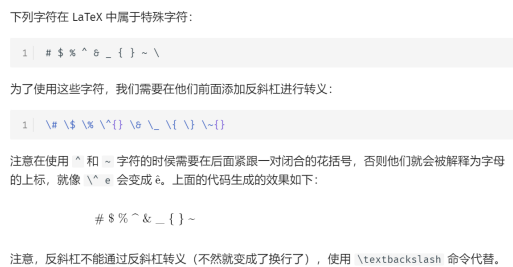


图 20: 特殊字符

然后我就开始探索, 先是主动跑过去请教了助教和老师这大概是个什么东西, 之后开始搜索, 找到了加速访问github网站的方法, 即通过Microsoft Store里面的watt toolkit来加速访问, 当我可以访问github的时候, 说实话心里很激动。

之后我开始考虑git的相关操作, 我在虚拟机里试着在终端里操作git, 发现不行, 因为访问不到github, 试了n次, 搜索了n个方法, 无果。于是, 我开始试着在windows里面下git,这个是在csdn里面搜的文章里面有安装教程和链接, 这个还比较好下。

之后我开始下载Latex, 下载过程可谓曲折坎坷, 无比痛苦, 此处省略一万字。我下了一遍又一遍, 都说texstudio无法识别已经下载的texlive, 最后实在没有办法了, 我开始向同学请教, A同学把他的安装包试了好几种办法终于传给了我, 然而还是不识别!! 我的这个电脑一向太过高冷、太过谨慎, 之前下载codeblocks的时候也是历经了千辛万苦。

然后我就继续请教, B同学安装成功了并把它搜到的教程发给了我, 终于在按照他发的教程安第二遍的时候, 我终于成功了!!! texstudio终于识别了!

之后我按照老师发的那两个链接里的内容学习git和latex的功能和使用, 我发现在texstudio里面要插入图片的时候最好将图片在Tex course文件夹里命名成英文, 否则会报错呢, 还有就是特殊字符要注意前面加转义字符, 竖线符号显示成横线, 我也试着加转义符号, 然而无果, 于是我试着把它当成数学公式, 前后加美元符号就可以啦! 通过这次实验我了解了Git和latex的功能和使用, 收获颇多, 继续努力, 天天向上!

3 参考链接

<https://b23.tv/G6xih3X>

<https://b23.tv/UmgKBTp>

https://blog.csdn.net/weixin_43888891/article/details/131546020

<https://git-scm.com/download/win>

<https://oi-wiki.org/tools/latex/>

<https://missing-semester-cn.github.io/>

4 github链接

<https://github.com/zyx-cyber/coursecontent.git>