

基本操作简介

Outline

- Git
- Linux操作
- 编译、调试

账号

- 课程为每组提供两个账号：服务器账号，gitlab账号
 - 服务器账号： compiler1， 密码： compiler1!
 - gitlab账号： compiler1， 密码： compier1!compiler1!
 - 上述的1为组号
- **服务器**（Linux环境）、**本地**（一般为Windows环境）



Git

- 首先

- git clone
- git status

- “三板斧”

- git add
- git commit
- git push

- 其他

- git branch
- git checkout

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes not staged for commit:
  (use "git add <file>..." to update what will be committed)
  (use "git checkout -- <file>..." to discard changes in working directory)

        modified:   src/main.cpp

no changes added to commit (use "git add" and/or "git commit -a")
```

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git add .
compiler0@teacher-PowerEdge-M640:~/compiler$ git status
On branch master
Your branch is up-to-date with 'origin/master'.
Changes to be committed:
  (use "git reset HEAD <file>..." to unstage)

        modified:   src/main.cpp
```

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git commit -m "changed src/main/cpp"
[master ab787fc] changed src/main/cpp
1 file changed, 2 insertions(+)
compiler0@teacher-PowerEdge-M640:~/compiler$ git push origin master
```

Git

- 其他

- git diff
- git branch
- git checkout

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git diff
diff --git a/src/main.cpp b/src/main.cpp
index 0086d13..2f21231 100644
--- a/src/main.cpp
+++ b/src/main.cpp
@@ -23,7 +23,8 @@ int main(int argc, const char* argv[]) {
    std::cout << "debug: hello" << std::endl;

-   std::cout << "test git" << std::endl;
+   std::cout << "test git command" << std::endl;
+   std::cout << "test git diff" << std::endl;
```

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git branch dev
compiler0@teacher-PowerEdge-M640:~/compiler$ git checkout dev
Switched to branch 'dev'
compiler0@teacher-PowerEdge-M640:~/compiler$ git branch
* dev
  master
```

Git

- 其他

- git branch
- git checkout

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git branch dev
compiler0@teacher-PowerEdge-M640:~/compiler$ git checkout dev
Switched to branch 'dev'
compiler0@teacher-PowerEdge-M640:~/compiler$ git branch
* dev
  master
```

```
compiler0@teacher-PowerEdge-M640:~/compiler$ git add .
compiler0@teacher-PowerEdge-M640:~/compiler$ git commit -m "add change to dev branch"
[dev bda3a6f] add change to dev branch
1 file changed, 1 insertion(+)
compiler0@teacher-PowerEdge-M640:~/compiler$ git checkout master
Switched to branch 'master'
Your branch is ahead of 'origin/master' by 2 commits.
(use "git push" to publish your local commits)
compiler0@teacher-PowerEdge-M640:~/compiler$ git merge dev
Updating a4b60f1..bda3a6f
Fast-forward
 src/main.cpp | 1 +
1 file changed, 1 insertion(+)
```

Git

- 其他
 - git log
- git ssh公钥

```
commit bda3a6f34f386b55289d8928cead688c2289bd59
```

```
Author: compiler0 <compiler0@163.com>
```

```
Date:   Fri Sep 24 12:00:13 2021 +0800
```

```
add change to dev branch
```

```
commit a4b60f167e3c1656fffb8ca1572e5b50711dd8726
```

```
Author: compiler0 <compiler0@163.com>
```

```
Date:   Fri Sep 24 11:56:35 2021 +0800
```

```
changed some files
```

```
commit ab787fcad684b59b44cd9140c8026a3a931e0cbb
```






















```
Author: compiler0 <compiler0@163.com>
```

```
Date:   Fri Sep 24 11:52:53 2021 +0800
```

```
changed src/main/cpp
```

Git

- git push
 - 所有git相关的操作都在 compiler 目录下进行
 - 不要把home目录push上来

	.cache	2021/9/18 16:40	文件夹	
	.git	2021/9/18 16:40	文件夹	
	.ssh	2021/9/18 16:40	文件夹	
	.vscode-server	2021/9/18 16:40	文件夹	
	dependencies	2021/9/18 16:40	文件夹	
	grammar	2021/9/18 16:40	文件夹	
	lib	2021/9/18 16:40	文件夹	
	libcact	2021/9/18 16:40	文件夹	
	out	2021/9/18 16:40	文件夹	
	report	2021/9/18 16:39	文件夹	
	samples_codegen	2021/9/18 16:40	文件夹	
	samples_lex_and_syntax	2021/9/18 16:40	文件夹	
	samples_semantic	2021/9/18 16:40	文件夹	
	src	2021/9/18 16:40	文件夹	
	.bash_history	2021/8/23 17:08	BASH_HISTORY ...	21 KB
	.bash_logout	2021/8/23 17:08	BASH_LOGOUT ...	1 KB
	.bashrc	2021/8/23 17:08	BASHRC 文件	4 KB
	.gitconfig	2021/8/23 17:08	GITCONFIG 文件	1 KB
	.gitignore	2021/8/23 17:08	文本文档	1 KB
	.profile	2021/8/23 17:08	PROFILE 文件	1 KB
	.viminfo	2021/8/23 17:08	VIMINFO 文件	4 KB

Linux基础操作

- scp命令
 - 从本地向服务器拷贝文件
- vim使用

```
# Copy from local machine to servers
scp ./examples.tar compiler1@124.16.71.65:~/
# examples.tar, source
# @xxxx, destination
# vice versa
```

Linux基础操作

- 服务器联网

```
$ curl baidu.com
<html><head><title>Web authentication Redirect</title><meta http-equiv="Cache-control" content="no-cache"><meta http-equiv="Pragma" content="no-cache"><meta http-equiv="Expires" content="-1"><meta http-equiv="refresh" content="1; url=https://portalucas.ac.cn/index_1.html"></head></html>

$ curl baidu.com
<html>
<meta http-equiv="refresh" content="0;url=http://www.baidu.com/">
</html>
```

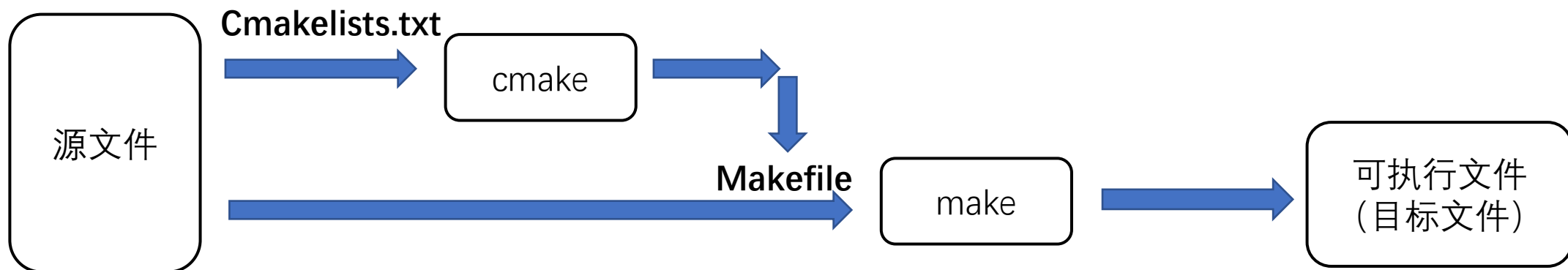
```
teacher@teacher-PowerEdge-M640:~$ python3 login.py
输入用户名:
[REDACTED]
输入密码:
[REDACTED]
已连接
teacher@teacher-PowerEdge-M640:~$ curl baidu.com
<html>
<meta http-equiv="refresh" content="0;url=http://www.baidu.com/">
</html>
```

推荐IDE

- VS Code

编译与调试

- 编译: gcc(g++) 或 clang(clang++)
 - g++ -o test test.cpp
- cmake 与 make
 - cmake: 由Cmakelists.txt生成Makefile
 - make: 根据Makefile来编译源文件, 生成可执行文件



编译与调试

- cmake 与 make
 - cmake: 由Cmakelists.txt生成Makefile
 - make: 根据Makefile来编译源文件, 生成可执行文件

```
cmake_minimum_required(VERSION 4.5)

# should only be under cmake_minimum_required
# should be set as g++-7, otherwise will report error
set(CMAKE_CXX_COMPILER "/usr/bin/g++-5")

project(Compiler LANGUAGES CXX)

set(CMAKE_BUILD_TYPE "Debug")

set(CMAKE_CXX_STANDARD 11)
set(CMAKE_CXX_STANDARD_REQUIRED ON)

include_directories(dependencies/antlr4-runtime/src)
include_directories(grammar)
include_directories(src)

link_directories("dependencies/antlr4-runtime/lib")
link_libraries/antlr4-runtime)

FILE(GLOB SOURCE_FILES "src/*.cpp" "grammar/*.cpp")
|
add_definitions(-w -g)

add_executable(compiler ${SOURCE_FILES})
```

编译与调试

- Cmake 与 make

```
compiler0@teacher-PowerEdge-M640:~/compiler/build$ cmake ..
-- The CXX compiler identification is GNU 5.4.0
-- Check for working CXX compiler: /usr/bin/g++-5
-- Check for working CXX compiler: /usr/bin/g++-5 -- works
-- Detecting CXX compiler ABI info
-- Detecting CXX compiler ABI info - done
-- Detecting CXX compile features
-- Detecting CXX compile features - done
-- Configuring done
-- Generating done
-- Build files have been written to: /home/compiler0/compiler/build
compiler0@teacher-PowerEdge-M640:~/compiler/build$ make
Scanning dependencies of target compiler
[ 14%] Building CXX object CMakeFiles/compiler.dir/src/main.cpp.o
[ 28%] Building CXX object CMakeFiles/compiler.dir/src/semanticAnalysis.cpp.o
[ 42%] Building CXX object CMakeFiles/compiler.dir/grammar/CACTBaseListener.cpp.o
[ 57%] Building CXX object CMakeFiles/compiler.dir/grammar/CACTListener.cpp.o
[ 71%] Building CXX object CMakeFiles/compiler.dir/grammar/CACTLexer.cpp.o
[ 85%] Building CXX object CMakeFiles/compiler.dir/grammar/CACTParser.cpp.o
[100%] Linking CXX executable compiler
[100%] Built target compiler
compiler0@teacher-PowerEdge-M640:~/compiler/build$ |
```

编译与调试

- 调试：gdb或lldb
 - 命令行调试
 - 在IDE如VSCode中调试（依赖的也是gdb或lldb）
 - [gdb简介](#)
 - 常用命令：
 - **break n**（简写**b n**）：在第n行处设置断点；可以带上代码路径和代码名称：main.cpp:25
 - **print a**：将显示整数 a 的值
 - **delete 断点号n**：删除第n个断点
 -

Markdown编写

- Markdown
 - 一种纯文本格式的标记语言，通过简单的标记语法，可以使普通文本内容具有一定的格式。
- 使用/入门简介，网上有很多资料：
 - [Markdown基本语法](#)
- 推荐编辑器：
 - [Typora](#)：所见即所得
 - 在线编辑器：[MaHua](#)

注意事项

- 报告提交
 - 按照模板的格式，编写markdown文件，最后提交pdf文件。
 - 报告同时提交到gitlab与sep课程网站上。
 - gitlab：提交到reports目录下，遵守命名规范。
 - sep网站：三次实验，每组固定由同一位同学提交。