计算机学院 高级语言程序设计 课程实验报告

实验题目：华为实验（2）		学号：202200130048
日期：2023.5.12	班级： 6	姓名： 陈静雯
Email：1205037094@qq.com		

实验步骤与内容：

1. 按照《Kunpeng&x86 平台 C／C++程序差异实验手册 v5.0（修改版）》文件启动一个鲲鹏服务器配 openEuler 操作系统，并远程登录进行命令行操作

2. 按照《开源语言文字实验（修改版）》通过命令行编译运行相应的软件，测试从图片中识别语言文字。除了文件里提到的默认的两个文件之外，可以再测试自己从电脑截图，或者通过图画进行手写，然后上传到服务器进行识别。操作过程中注意截图记录操作流程到报告中。

结论分析与体会：

```
-bash: g++: command not found
[root@openeuler ~]# gcc -v
Using built-in specs.
COLLECT_GCC=gcc
COLLECT_LTO_WRAPPER=/usr/libexec/gcc/aarch64-linux-gnu/7.3.0/lto-wrapper
Target: aarch64-linux-gnu
Configured with: ../configure --prefix=/usr --mandir=/usr/share/man --infodir=/u:
ecking=release --with-system-zlib --enable-__cxa_atexit --disable-libunwind-exce
h-linker-hash-style=gnu --enable-languages=c,c++,objc,obj-c++,fortran,lto --enab
ome/abuild/rpmbuild/BUILD/gcc-7.3.0/obj-aarch64-linux-gnu/isl-install --without-
-with-stage1-ldflags=' -Wl,-z,relro,-z,now' --with-boot-ldflags=' -Wl,-z,relro,-:
Thread model: posix
gcc version 7.3.0 (GCC)
[root@openeuler ~]# g++ -v
-bash: g++: command not found
[root@openeuler ~]# yum -y install gcc-c++
Waiting for process with pid 5499 to finish.
Last metadata expiration check: 0:00:08 ago on Fri 12 May 2023 04:24:43 PM CST.
Dependencies resolved.
=====================================================================
 Package                          Architecture            Version
=====================================================================
Installing:
 gcc-c++                          aarch64                 7.3.0-2021060:
Installing dependencies:
 libstdc++-devel                  aarch64                 7.3.0-2021060:

Transaction Summary
=====================================================================
Install  2 Packages

Total download size: 8.4 M
Installed size: 29 M
```

```
complete!
[root@openeuler ~]# cd
[root@openeuler ~]# tar zxvf leptonica-1.78.0.tar.gz
leptonica-1.78.0/aclocal.m4
leptonica-1.78.0/appveyor.yml
leptonica-1.78.0/autogen.sh
leptonica-1.78.0/autom4te.cache/
leptonica-1.78.0/autom4te.cache/traces.2
leptonica-1.78.0/autom4te.cache/traces.1
leptonica-1.78.0/autom4te.cache/requests
leptonica-1.78.0/autom4te.cache/output.2
leptonica-1.78.0/autom4te.cache/traces.0
leptonica-1.78.0/autom4te.cache/output.0
leptonica-1.78.0/autom4te.cache/output.1
leptonica-1.78.0/cmake/
leptonica-1.78.0/cmake/Configure.cmake
leptonica-1.78.0/cmake/templates/
leptonica-1.78.0/cmake/templates/LeptonicaConfig-version.cmake.in
leptonica-1.78.0/cmake/templates/LeptonicaConfig.cmake.in
leptonica-1.78.0/CMakeLists.txt
leptonica-1.78.0/config/
leptonica-1.78.0/config/depcomp
leptonica-1.78.0/config/config.sub
leptonica-1.78.0/config/missing
leptonica-1.78.0/config/config.guess
leptonica-1.78.0/config/test-driver
leptonica-1.78.0/config/config.h.in
leptonica-1.78.0/config/ltmain.sh
leptonica-1.78.0/config/compile
leptonica-1.78.0/config/install-sh
leptonica-1.78.0/configure
```

```
leptonica-1.78.0/version notes.html
[root@openeuler ~]# cd leptonica-1.78.0
[root@openeuler leptonica-1.78.0]# ./configure --prefix=/usr/
configure: loading site script /usr/share/config.site
checking build system type... aarch64-unknown-linux-gnu
checking host system type... aarch64-unknown-linux-gnu
checking how to print strings... printf
checking for gcc... gcc
checking whether the C compiler works... yes
checking for C compiler default output file name... a.out
checking for suffix of executables...
checking whether we are cross compiling... no
checking for suffix of object files... o
checking whether we are using the GNU C compiler... yes
checking whether gcc accepts -g... yes
checking for gcc option to accept ISO C89... none needed
checking whether gcc understands -c and -o together... yes
checking for a sed that does not truncate output... /usr/bin/sed
checking for grep that handles long lines and -e... /usr/bin/grep
checking for egrep... /usr/bin/grep -E
checking for fgrep... /usr/bin/grep -F
checking for ld used by gcc... /usr/bin/ld
checking if the linker (/usr/bin/ld) is GNU ld... yes
```

```
[root@openeuler leptonica-1.78.0]# make -j4 && make install
make  all-recursive
make[1]: Entering directory '/root/leptonica-1.78.0'
Making all in src
make[2]: Entering directory '/root/leptonica-1.78.0/src'
  CC        adaptmap.lo
  CC        affine.lo
  CC        affinecompose.lo
  CC        arrayaccess.lo
  CC        bardecode.lo
  CC        baseline.lo
  CC        bbuffer.lo
  CC        bilateral.lo
  CC        bilinear.lo
  CC        binarize.lo
  CC        binexpand.lo
```

```
make[2]: Entering directory '/root/leptonica-1.78.0/prog'
 /usr/bin/mkdir -p '/usr/bin'
  /bin/sh ../libtool   --mode=install /usr/bin/install -c convertfilestopdf convertf
ops converttopdf converttops fileinfo imagetops xtractprotos '/usr/bin'
libtool: install: /usr/bin/install -c .libs/convertfilestopdf /usr/bin/convertfilest
libtool: install: /usr/bin/install -c .libs/convertfilestops /usr/bin/convertfilesto
libtool: install: /usr/bin/install -c .libs/convertformat /usr/bin/convertformat
libtool: install: /usr/bin/install -c .libs/convertsegfilestopdf /usr/bin/convertseg
libtool: install: /usr/bin/install -c .libs/convertsegfilestops /usr/bin/convertsegf
libtool: install: /usr/bin/install -c .libs/converttopdf /usr/bin/converttopdf
libtool: install: /usr/bin/install -c .libs/converttops /usr/bin/converttops
libtool: install: /usr/bin/install -c .libs/fileinfo /usr/bin/fileinfo
libtool: install: /usr/bin/install -c .libs/imagetops /usr/bin/imagetops
libtool: install: /usr/bin/install -c .libs/xtractprotos /usr/bin/xtractprotos
make[2]: Nothing to be done for 'install-data-am'.
make[2]: Leaving directory '/root/leptonica-1.78.0/prog'
make[1]: Leaving directory '/root/leptonica-1.78.0/prog'
make[1]: Entering directory '/root/leptonica-1.78.0'
make[2]: Entering directory '/root/leptonica-1.78.0'
make[2]: Nothing to be done for 'install-exec-am'.
 /usr/bin/mkdir -p '/usr/lib/pkgconfig'
 /usr/bin/install -c -m 644 lept.pc '/usr/lib/pkgconfig'
make[2]: Leaving directory '/root/leptonica-1.78.0'
make[1]: Leaving directory '/root/leptonica-1.78.0'
[root@openeuler leptonica-1.78.0]# 
```

```
▥ /etc/profile

# System wide environment and startup programs, for login setup
# Functions and aliases go in /etc/bashrc

# It's NOT a good idea to change this file unless you know what you
# are doing. It's much better to create a custom.sh shell script in
# /etc/profile.d/ to make custom changes to your environment, as this
# will prevent the need for merging in future updates.

pathmunge () {
    case ":${PATH}:" in
        *:"$1":*)
            ;;
        *)
            if [ "$2" = "after" ] ; then
                PATH=$PATH:$1
            else
                PATH=$1:$PATH
            fi
    esac
}


if [ -x /usr/bin/id ]; then
    if [ -z "$EUID" ]; then
        # ksh workaround
        EUID=`/usr/bin/id -u`
        UID=`/usr/bin/id -ru`
    fi
    USER="`/usr/bin/id -un`"
    LOGNAME=$USER
    MAIL="/var/spool/mail/$USER"
fi

# Path manipulation
if [ "$EUID" = "0" ]; then
    pathmunge /usr/sbin
    pathmunge /usr/local/sbin
else
    pathmunge /usr/local/sbin after
```

```
make[1]: Leaving directory  /root/leptonica-1.78.0
[root@openeuler leptonica-1.78.0]# vi /etc/profile
[root@openeuler leptonica-1.78.0]# source /etc/profile


Welcome to 4.19.90-2110.8.0.0119.oe1.aarch64

System information as of time:  Fri May 12 16:41:50 CST 2023

System load:     0.21
Processes:       139
Memory used:     9.9%
Swap used:       0.0%
Usage On:        9%
IP address:      192.168.1.190
Users online:    1
```

```
  inflating: tesseract-main/unittest/util/utf8/unilib_utf8_utils.h
  inflating: tesseract-main/unittest/validate_grapheme_test.cc
  inflating: tesseract-main/unittest/validate_indic_test.cc
  inflating: tesseract-main/unittest/validate_khmer_test.cc
  inflating: tesseract-main/unittest/validate_myanmar_test.cc
  inflating: tesseract-main/unittest/validator_test.cc
[root@openeuler ~]# ls
chi_sim.traineddata  eng.traineddata  leptonica-1.78.0  leptonica-1.78.0.tar.gz  tesseract-main  tesseract-main.zip
[root@openeuler ~]# 
```

```
[root@openeuler ~]# cd tesseract-main
[root@openeuler tesseract-main]# ./autogen.sh && ./configure  && make -j4 && make install
Running aclocal
Running /usr/bin/libtoolize
libtoolize: putting auxiliary files in AC_CONFIG_AUX_DIR, 'config'.
libtoolize: copying file 'config/ltmain.sh'
libtoolize: putting macros in AC_CONFIG_MACRO_DIRS, 'm4'.
libtoolize: copying file 'm4/libtool.m4'
libtoolize: copying file 'm4/ltoptions.m4'
libtoolize: copying file 'm4/ltsugar.m4'
libtoolize: copying file 'm4/ltversion.m4'
libtoolize: copying file 'm4/lt~obsolete.m4'
Running aclocal
Running autoconf
Running autoheader
Running automake --add-missing --copy
configure.ac:425: installing 'config/compile'
configure.ac:89: installing 'config/config.guess'
configure.ac:89: installing 'config/config.sub'
configure.ac:27: installing 'config/install-sh'
configure.ac:27: installing 'config/missing'
Makefile.am: installing 'config/depcomp'
parallel-tests: installing 'config/test-driver'
```

```
[root@openeuler tesseract-main]# cd
[root@openeuler ~]# cp eng.traineddata /usr/local/share/tessdata -r
[root@openeuler ~]# cp chi_sim.traineddata /usr/local/share/tessdata -r
[root@openeuler ~]# 
```

```
[root@openeuler ~]# ll
total 96M
-rw-r--r--  1 root root  51M May 12 16:33 chi_sim.traineddata
-rw-r--r--  1 root root  31M May 12 16:34 eng.traineddata
drwxr-xr-x  8 root root 4.0K May 12 16:36 leptonica-1.78.0
-rw-r--r--  1 root root  13M May 12 16:33 leptonica-1.78.0.tar.gz
drwxr-xr-x 16 root root 4.0K May 12 16:50 tesseract-main
-rw-r--r--  1 root root 2.4M May 12 16:33 tesseract-main.zip
[root@openeuler ~]# 
```

```
[root@openeuler ~]# wget https://portal-www-software.obs.cn-north-1.myhuaweicloud.com:443/kunpeng.bmp
--2023-05-12 16:54:28--  https://portal-www-software.obs.cn-north-1.myhuaweicloud.com/kunpeng.bmp
Resolving portal-www-software.obs.cn-north-1.myhuaweicloud.com (portal-www-software.obs.cn-north-1.myhuaweiclo
5.192.27, 114.115.192.98
Connecting to portal-www-software.obs.cn-north-1.myhuaweicloud.com (portal-www-software.obs.cn-north-1.myhuawe
. connected.
HTTP request sent, awaiting response... 200 OK
Length: 270870 (265K) [application/x-bmp]
Saving to: 'kunpeng.bmp'

kunpeng.bmp                      100%[===================================================================>]

2023-05-12 16:54:28 (18.4 MB/s) - 'kunpeng.bmp' saved [270870/270870]

[root@openeuler ~]# 
```

<mark>最后识别失败：不知道为什么说是没有找到该文件，但是两张图片都下载成功了的（最后识别之前的步骤都成功了）</mark>

```
2023-05-12 16:57:08 (18.2 MB/s) - 'kunpeng.bmp.1' saved [270870/270870]

[root@openeuler ~]# tesseract kunpeng.bmp result
tesseract: error while loading shared libraries: liblept.so.5: cannot open shared object file: No such file or directory
```

```
tesseract: error while reading shared libraries: libtept.so.5: canno
[root@openeuler ~]# ll
total 98M
-rw-r--r--  1 root root  51M May 12 16:33 chi_sim.traineddata
-rw-r--r--  1 root root  31M May 12 16:34 eng.traineddata
-rw-r--r--  1 root root 265K Jun 26  2019 kunpeng.bmp
-rw-r--r--  1 root root 265K Jun 26  2019 kunpeng.bmp.1
-rw-r--r--  1 root root 1.3M Jul  4  2019 kunpeng_chi.bmp
drwxr-xr-x  8 root root 4.0K May 12 16:36 leptonica-1.78.0
-rw-r--r--  1 root root  13M May 12 16:33 leptonica-1.78.0.tar.gz
drwxr-xr-x 16 root root 4.0K May 12 16:50 tesseract-main
-rw-r--r--  1 root root 2.4M May 12 16:33 tesseract-main.zip
[root@openeuler ~]# 
```