**********Draft**********

Testing the pshell project for addition to rp2040-freertos-project

The initial work consisted of 2 repos pshell & littlefs

which provides a flash file system & vi

05/24/22

**********Draft**********

```
Only required “Ultibo_Projects/rebuild-repo.sh” if the rp2040-freertos-project
is not present or a fresh start is desired.

cd rp2040-freertos-project/build/

cmake ..

make

An 8 bit crc working in “rp2040-freertos-project”
```

The pshell project has crc16. I created a library

https://github.com/develone/rp2040-freertos-project/tree/master/crc16

https://github.com/develone/rp2040-freertos-project/blob/master/crc16/CMakeLists.txt

This is still a WIP to add other files to library vi.c xcommon.h xreceive.h xtransmit.h vi.h xreceive.c xtransmit.c

set(PICO_SDK_CRC16_SOURCE CRC16-Files)

add_library(crc16

${PICO_SDK_CRC16_SOURCE}/crc16.c

${PICO_SDK_CRC16_SOURCE}/head-tail.c

${PICO_SDK_CRC16_SOURCE}/cvtutils.c

${PICO_SDK_CRC16_SOURCE}/lfs_util.c

${PICO_SDK_CRC16_SOURCE}/lfs.c

)

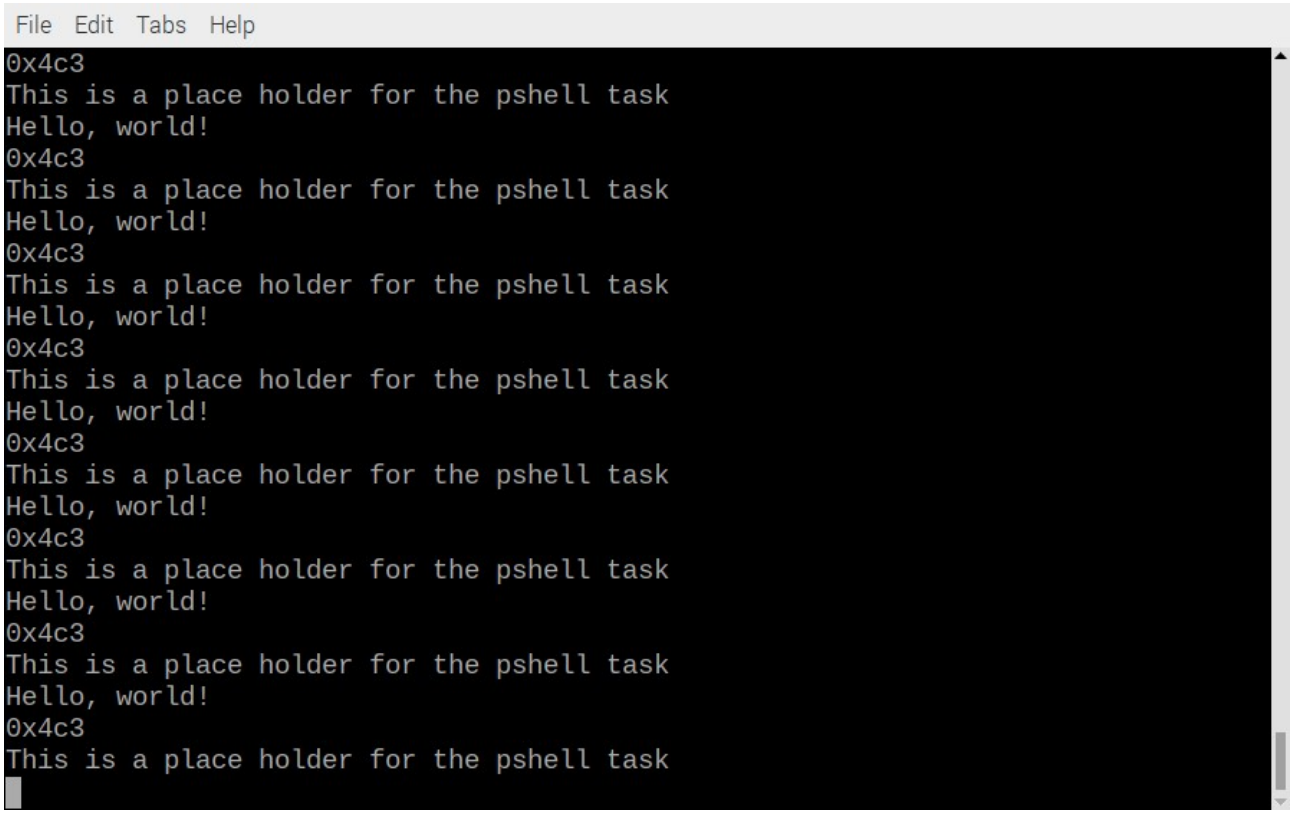
target_include_directories(crc16 PUBLIC

.

${PICO_SDK_CRC16_SOURCE}/include

${PICO_SDK_CRC16_SOURCE}/portable/GCC/ARM_CM0

)



from repo pshell crc16.c crc16.h from repo littlefs lfs.c lfs_util.c lfs.h lfs_util.h

from libcrc.a repo rp2040-freertos-project cvtutils.c head-tail.c head-tail.h

These now are used to create libcrc16.a

from the repo pshell fs.h vi.c xcommon.h xreceive.h xtransmit.h fs.c vi.h xreceive.c xtransmit.c

fs.c has the following .h files which prevents from being included in libcrc16.a

#include "hardware/flash.h"

#include "hardware/regs/addressmap.h"

#include "hardware/sync.h"

xreceive.c & xtransmit.c have the following .h files which prevents from being included in libcrc16.a

#include "pico/stdlib.h"

vi.c has the following .h files which prevents from being included in libcrc16.a

#include "pico/stdlib.h"

The files from pshell & littlefs could not be include in libcrc16.a fs.h vi.h xreceive.c xtransmit.c fs.c vi.c xcommon.h xreceive.h xtransmit.h

Now in the libcrc16.a

crc16.h lfs.h lfs_util.h crc16.c lfs.c lfs_util.c

From previous libcrc.a head-tail.h head-tail.c cvtutils.c

set(PICO_SDK_CRC16_SOURCE CRC16-Files)

add_library(crc16

${PICO_SDK_CRC16_SOURCE}/crc16.c

${PICO_SDK_CRC16_SOURCE}/head-tail.c

${PICO_SDK_CRC16_SOURCE}/cvtutils.c

${PICO_SDK_CRC16_SOURCE}/lfs_util.c

${PICO_SDK_CRC16_SOURCE}/lfs.c

)

target_include_directories(crc16 PUBLIC

.

${PICO_SDK_CRC16_SOURCE}/include

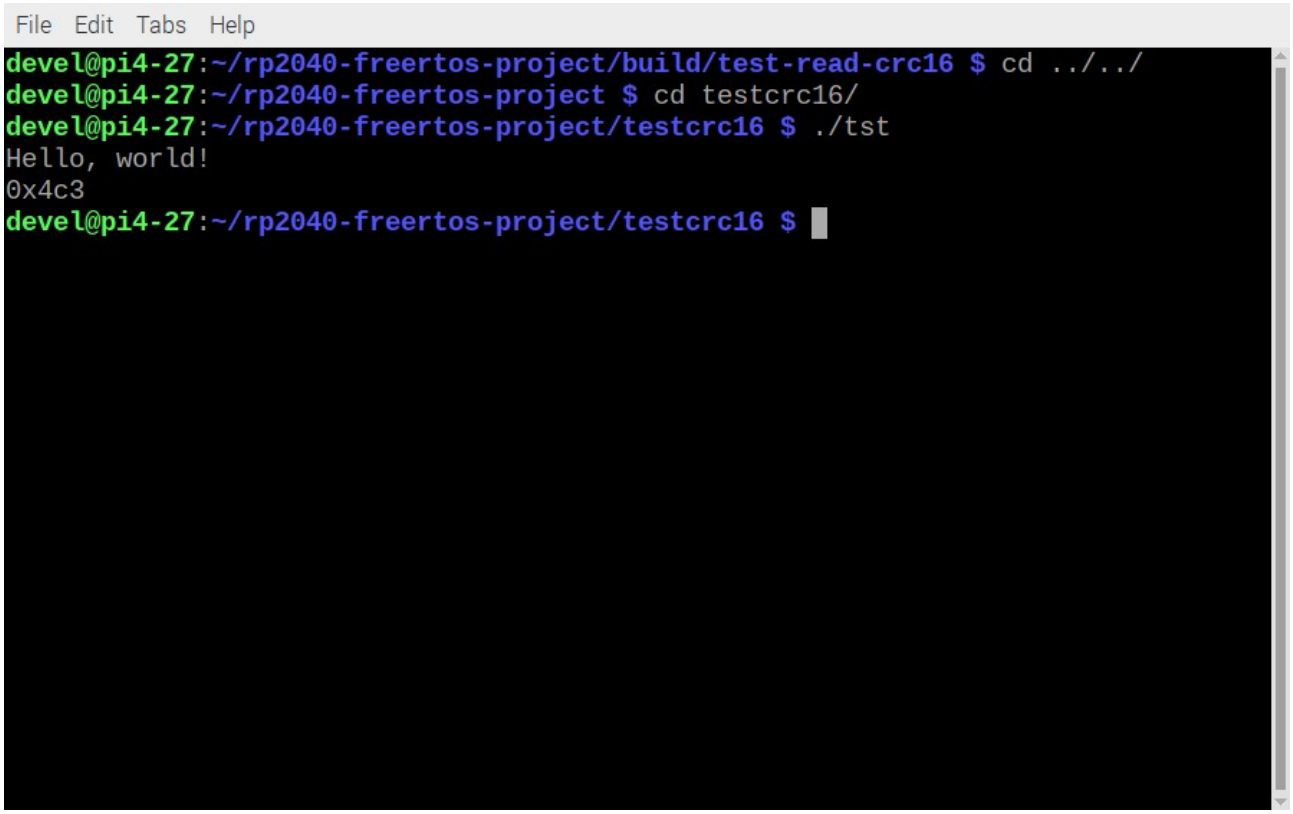
${PICO_SDK_CRC16_SOURCE}/portable/GCC/ARM_CM0

)

The library also provides a circular buffer.

The library was tested on a pico with the following

https://github.com/develone/rp2040-freertos-project/blob/master/test-read-crc16/main.c



Testing in Linux RPi4B+ 8Gb Raspberry Pi O/S

rp2040-freertos-project/testcrc16-RPi

One of the Ultibo members post the folloing

https://ultibo.org/forum/viewtopic.php?f=9&t=1640&start=30

by **Gavinmc42** »

This is interesting, talk about about adding Pascal to it.
https://forums.raspberrypi.com/viewtopic.php?t=323018

With a shell, editor and Pascal, OTA update of just the Pascal code should be smaller/quicker?
Hmm, should look at OTA of Micropython on Picos or has that been done?

Forked “https://github.com/lurk101/pshell”
“git clone git@github.com:develone/pshell.git”

```
“cd pshell”

“git submodule update –init”

mkdir build

cd build

cmake ..

make
```

The image below is running test-read-crc16.elf

File Edit Tabs Help

```
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
0x4c3
Hello, world!
```

First needed format followed by mount

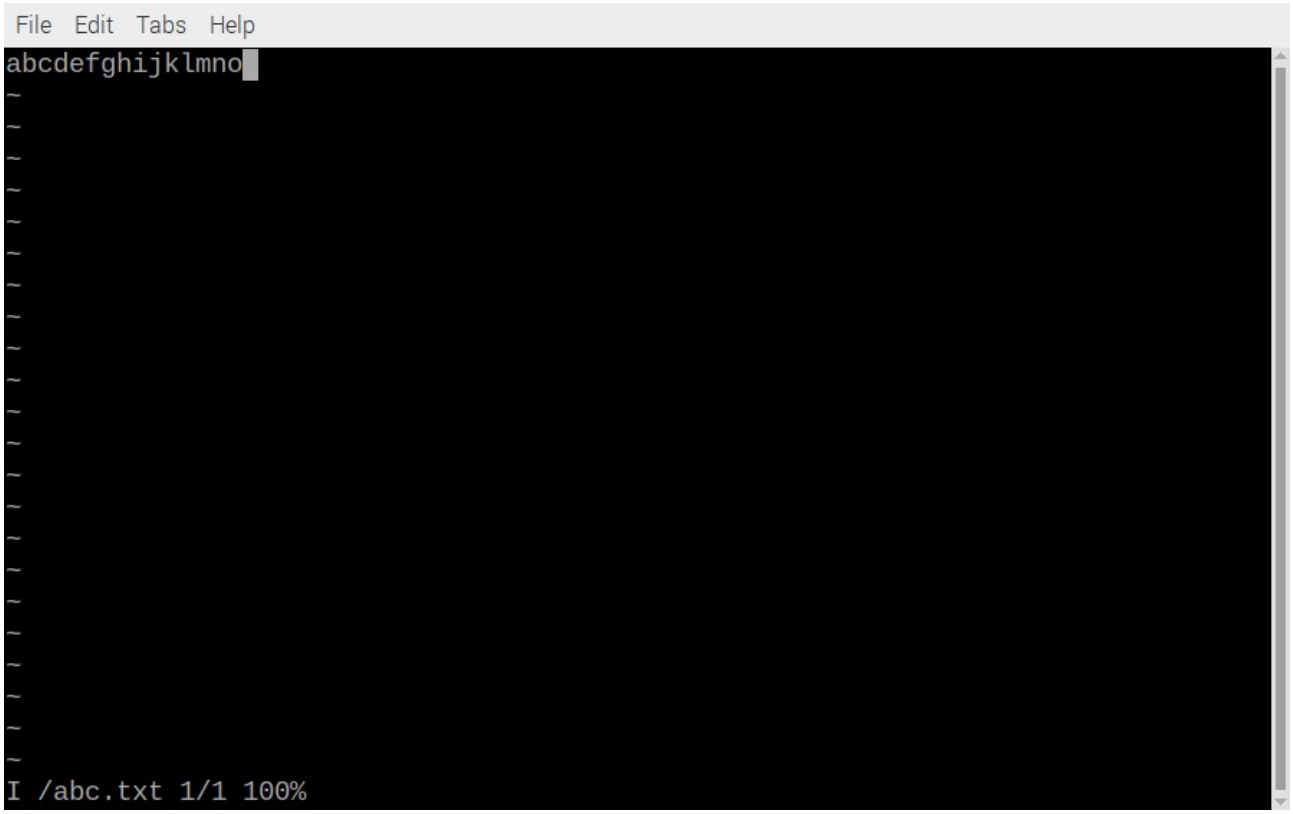
Created tt.txt using vi from the pshell

File Edit Tabs Help

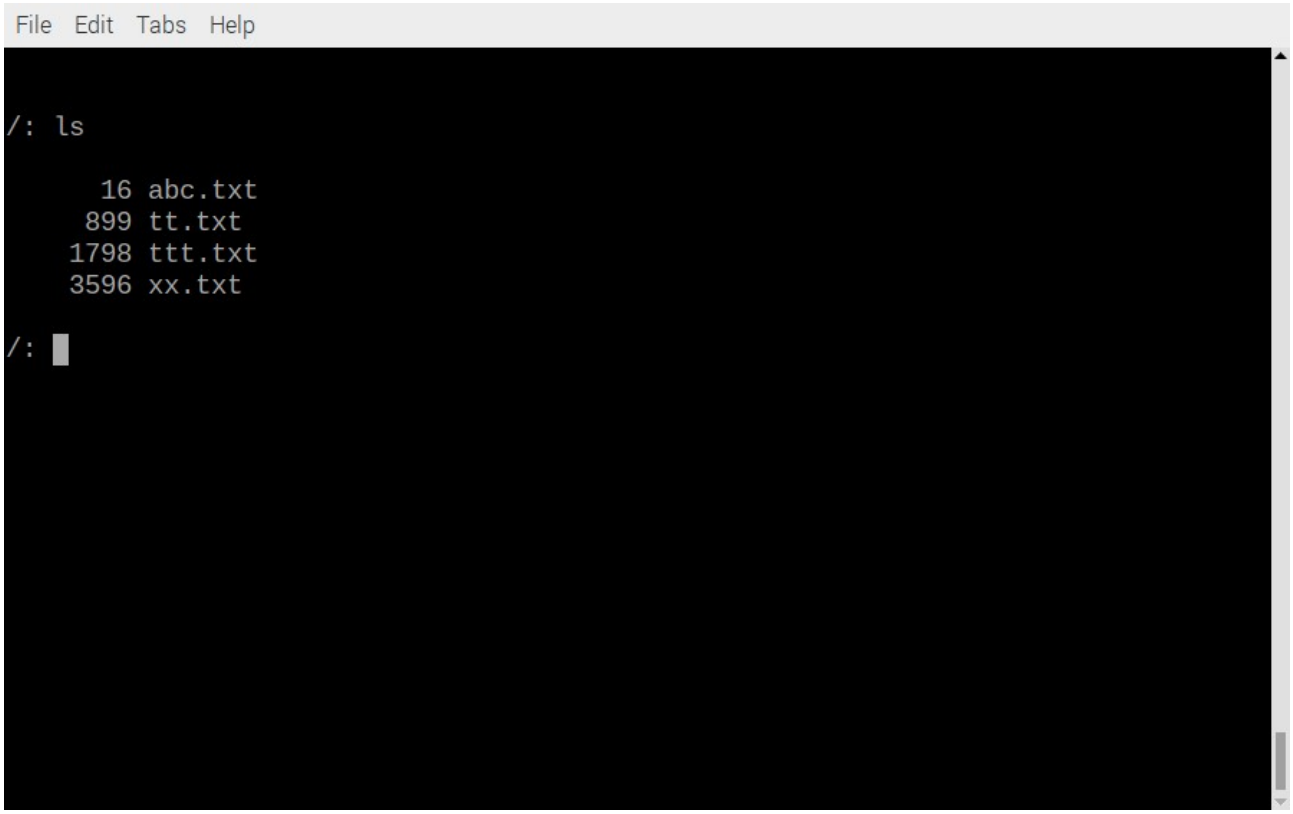
```
 format - format the filesystem
    get - get file (xmodem)
     ls - list directory
  mkdir - create directory
  mount - mount filesystem
     mv - rename file or directory
    put - put file (xmodem)
      q - quit
     rm - remove file or directory
 status - filesystem status
unmount - unmount filesystem
     vi - vi editor

/: ls

     899 tt.txt
    1798 ttt.txt
    3596 xx.txt

/: status

flash base 0x100000, blocks 256, block size 4096, used 5, total 1048576 bytes, .

/:
```

m

m
The image below is using the vi command



m


File Edit Tabs Help
/: ls
16 abc.txt
899 tt.txt
1798 ttt.txt
3596 xx.txt
/: