Operating Systems

ENGR-3950U-001

SneakyFS Unit Testing

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# Simple Unit Testing

## Test One – Check for Successful Mount

### Test Description

Initialize, quit, and launch again to check if mount is successful.

### Keystrokes

i, 1

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

## Test Two – Attempt to Read an Invalid File Descriptor

### Test Description

Read directory with an invalid file descriptor – Attempt to read an invalid file descriptor.

### Keystrokes

R, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Invalid file descriptor.

Error. Return value was -1

ACTUAL OUTPUT:

Invalid file descriptor.

Error. Return value was -1

## Test Three – Open the Root Directory

### Test Description

Open root directory -- Open root

### Keystrokes

o, /

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Open succeeded. File Descriptor number is 0

ACTUAL OUTPUT:

Open succeeded. File Descriptor number is 0

## Test Four – Read from the Root Directory, with No Contents

### Test Description

Read root directory (no contents) -- Read root with no contents within it

### Keystrokes

R, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

ACTUAL OUTPUT:

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

## Test Five – Make a File /foo

### Test Description

Make a file (/foo) -- make a file at /foo

### Keystrokes

m, /foo, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 502

sfs\_create succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 502

sfs\_create succeeded.

## Test Six – Write to an Invalid File Descriptor

### Test Description

Write file (with an invalid FD) -- write to an invalid file descriptor, o

### Keystrokes

w, o

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Enter 0 characters to be written: Error. Return value was 0

ACTUAL OUTPUT:

Enter 0 characters to be written: Error. Return value was 0

## Test Seven – Open a File /foo

### Test Description

Open a file (/foo) -- open /foo

### Keystrokes

o, /foo

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Open succeeded. File Descriptor number is 1

ACTUAL OUTPUT:

Open succeeded. File Descriptor number is 1

## Test Eight – Open a File at an Invalid Path

### Test Description

Open a file (invalid file path) -- /barman does not exist

### Keystrokes

o, /barman

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Invalid path specified.

File not found at path specified.

Error. Return value was -1

ACTUAL OUTPUT:

Invalid path specified.

File not found at path specified.

Error. Return value was -1

## Test Nine – Append Data to a File

### Test Description

Write to a file (/foo, append, 130) -- append 130 bytes to /foo

### Keystrokes

w, 1, -1, 130, abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 500

Write succeeded.

Wrote abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12 to the disk

ACTUAL OUTPUT:

Total Free Blocks = 500

Write succeeded.

Wrote abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12 to the disk

## Test Ten – Read Data from a File

### Test Description

Read from a file (/foo, 0, 128) -- read 128 bytes (1 block) from 1 block

### Keystrokes

r, 1, 0, 128

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}

ACTUAL OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}

## Test Eleven – Read from a File with an Invalid File Descriptor

### Test Description

Read from a file (invalid file descriptor, e) -- read from file descriptor = 2, start location e

### Keystrokes

r, e

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Enter number of bytes to read: Error. Return value was 0

ACTUAL OUTPUT:

Enter number of bytes to read: Error. Return value was 0

## Test Twelve – Read from a Large File

### Test Description

Read from a file (/foo, 2, 128) -- read 128 bytes (1 block) from 2 blocks

### Keystrokes

r, 1, 2, 128

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

cdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

ACTUAL OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

cdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

## Test Thirteen – Read More Than One Block from a Large File

### Test Description

Read from a file (/foo, 0, 130) -- read more than 1 block

### Keystrokes

r, 1, 0, 130

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

ACTUAL OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

## Test Fourteen – Read Past End of File

### Test Description

Read from a file (/foo, 1, 130) -- read past EOF

### Keystrokes

r, 1, 1, 130

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Attempted read/write past end of file.

Error. Return value was 0

ACTUAL OUTPUT:

Attempted read/write past end of file.

Error. Return value was 0

## Test Fifteen – Attempt to Enter an Invalid Command

### Test Description

Invalid command (anything that doesn’t start with the given magical letters)

### Keystrokes

Z

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Unknown command: z

ACTUAL OUTPUT:

Unknown command: z

## Test Sixteen – Read a Directory Which Has Contents

### Test Description

Read directory on root (with content) -- Read directory when directory has contents.

### Keystrokes

R, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_readdir succeeded.

Directory entry is: foo

ACTUAL OUTPUT:

sfs\_readdir succeeded.

Directory entry is: foo

## Test Seventeen – Traverse a Directory’s Entire Contents

### Test Description

Read directory on root (with content) -- Repeat until 'no more entries' and ensure that each directory is found in the read directory cycle.

### Keystrokes

R, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_readdir succeeded.

No more entries in this directory

ACTUAL OUTPUT:

sfs\_readdir succeeded.

No more entries in this directory

## Test Eighteen – Traverse Directory Past Last Element

### Test Description

Read directory on root (with content) -- Repeat once more to ensure the next output will be the first directory again (aka it repeats)

### Keystrokes

R, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_readdir succeeded.

Directory entry is: foo

ACTUAL OUTPUT:

sfs\_readdir succeeded.

Directory entry is: foo

## Test Nineteen – Create a Subdirectory

### Test Description

Make directory /bar -- create directory /bar

### Keystrokes

m, /bar, 1

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 498

sfs\_create succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 498

sfs\_create succeeded.

## Test Twenty – Open a Subdirectory

### Test Description

Open /bar

### Keystrokes

o, /bar

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Open succeeded. File Descriptor number is 2

ACTUAL OUTPUT:

Open succeeded. File Descriptor number is 2

## Test Twenty One – Read an Empty Subdirectory

### Test Description

Read directory /bar (empty) -- Read /bar which is empty

### Keystrokes

R, 2

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

ACTUAL OUTPUT:

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

## Test Twenty Two – Create a File in a Subdirectory

### Test Description

Make file /bar/sfs (file) -- create a file at /bar/sfs

### Keystrokes

m, /bar/sfs, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 496

sfs\_create succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 496

sfs\_create succeeded.

## Test Twenty Three – Open a File in a Subdirectory

### Test Description

Open /bar/sfs -- Open /bar/sfs

### Keystrokes

o, /bar/sfs

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Open succeeded. File Descriptor number is 3

ACTUAL OUTPUT:

Open succeeded. File Descriptor number is 3

## Test Twenty Four – Create a Second Subdirectory

### Test Description

Create directory /sneak

### Keystrokes

m, /sneak, 1

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 494

sfs\_create succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 494

sfs\_create succeeded.

## Test Twenty Five – Create another Directory

### Test Description

Create file /sneaky

### Keystrokes

m, /sneaky, 0

### Test Type

Simple

### Test Result

EXPECTED OUTPUT:

Total Free Blocks = 492

sfs\_create succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 492

sfs\_create succeeded.

## Test Twenty Six – Attempt to Create a File with a Filename That Is Too Large

### Test Description

Create file /superawesome -- file name to big

### Keystrokes

m, /superawesome, 0

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Invalid path specified.

Error. Return value was 0

ACTUAL OUTPUT:

Invalid path specified.

Error. Return value was 0

## Test Twenty Seven – Delete an Empty Directory

### Test Description

Delete /sneaky -- delete the empty directory

### Keystrokes

d, /sneaky

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_delete succeeded.

ACTUAL OUTPUT:

sfs\_delete succeeded.

## Test Twenty Eight – Get the Size of a Directory

### Test Description

Get size of root -- get the number of files/directories in root

Keystrokes

s, /

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Overhead Size = 256

Size = 3

sfs\_getsize succeeded.

ACTUAL OUTPUT:

Overhead Size = 256

Size = 3

sfs\_getsize succeeded.

## Test Twenty Nine – Get the Type of a File

### Test Description

Get type of root -- get the root's type

### Keystrokes

t, /

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_gettype succeeded.

file type is DIRECTORY

ACTUAL OUTPUT:

sfs\_gettype succeeded.

file type is DIRECTORY

## Test Thirty – Close an Open File

### Test Description

Close /foo -- close foo

### Keystrokes

c, 1

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_close succeeded.

ACTUAL OUTPUT:

sfs\_close succeeded.

## Test Thirty One – Delete a File

### Test Description

Delete /foo -- delete foo

### Keystrokes

d, /foo

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_delete succeeded.

ACTUAL OUTPUT:

sfs\_delete succeeded.

## Test Thirty Two – Make a Subdirectory of a Subdirectory

### Test Description

Make directory /bar/foo -- make directory /bar/foo

### Keystrokes

m, /bar/foo, 1

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 496

sfs\_create succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 496

sfs\_create succeeded.

## Test Thirty Three – Attempt to Delete a Directory which is Not Empty

### Test Description

Delete /bar -- invalid delete

### Keystrokes

d, /bar

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Directory has children.

Error. Return value was 0

ACTUAL OUTPUT:

Directory has children.

Error. Return value was 0

## Test Thirty Four – Attempt to Open a File in a Subdirectory

### Test Description

Open /bar/sfs -- open the file

### Keystrokes

o, /bar/sfs

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Open succeeded. File Descriptor number is 1

ACTUAL OUTPUT:

Open succeeded. File Descriptor number is 1

## Test Thirty Five – Attempt to Write to a File in a Subdirectory

### Test Description

Write /bar/sfs -- write to sfs

### Keystrokes

w, 1, -1, 128, stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|}

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Total Free Blocks = 495

Write succeeded.

Wrote stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|} to the disk

ACTUAL OUTPUT:

Total Free Blocks = 495

Write succeeded.

Wrote stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|} to the disk

## Test Thirty Six – Attempt to Read from a File in a Subdirectory

### Test Description

Read /bar/sfs -- read the file

### Keystrokes

r, 1, 0, 128

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|}

ACTUAL OUTPUT:

Read succeeded.

The following data was read (only printable ASCII will display)

stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|}

## Test Thirty Seven – Attempt to Delete a File in a Subdirectory

### Test Description

Delete /bar/sfs -- delete

### Keystrokes

d, /bar/sfs

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_delete succeeded.

ACTUAL OUTPUT:

sfs\_delete succeeded.

## Test Thirty Eight – Attempt to Open a Directory that has had Files Deleted

### Test Description

Open /bar -- open the file

### Keystrokes

o, /bar

### Test Type

Simple

### Result

EXPECTED OUTPUT:

Open succeeded. File Descriptor number is 2

ACTUAL OUTPUT:

Open succeeded. File Descriptor number is 2

## Test Thirty Nine – Attempt to Traverse a Directory that has had Files Deleted

### Test Description

Read directory /bar -- read the directory

### Keystrokes

R, 2 (x 2)

### Test Type

Simple

### Result

EXPECTED OUTPUT:

sfs\_readdir succeeded.

Directory entry is: foo

ACTUAL OUTPUT:

sfs\_readdir succeeded.

No more entries in this directory

# Complex Unit Testing

## Test One – Execute Tests 1 - 14 in Sequence

### Test Description

Execute the following simple tests in strict sequence:

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14

Open the root directory, create a file, open the file, and write to the file, read from the file.

Test whether it is possible to read past end of file, and read from a file that doesn’t exist.

### Test Type

Complex

### Result

EXPECTED OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

Invalid file descriptor.

Error. Return value was -1

Open succeeded. File Descriptor number is 0

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

Total Free Blocks = 502

sfs\_create succeeded.

Enter 0 characters to be written: Error. Return value was 0

Open succeeded. File Descriptor number is 1

Invalid path specified.

File not found at path specified.

Error. Return value was -1

Total Free Blocks = 500

Write succeeded.

Wrote abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12 to the disk

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}

Enter number of bytes to read: Error. Return value was 0

Read succeeded.

The following data was read (only printable ASCII will display)

cdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

Attempted read/write past end of file.

Error. Return value was 0

ACTUAL OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

Invalid file descriptor.

Error. Return value was -1

Open succeeded. File Descriptor number is 0

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

Total Free Blocks = 502

sfs\_create succeeded.

Enter 0 characters to be written: Error. Return value was 0

Open succeeded. File Descriptor number is 1

Invalid path specified.

File not found at path specified.

Error. Return value was -1

Total Free Blocks = 500

Write succeeded.

Wrote abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12 to the disk

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}

Enter number of bytes to read: Error. Return value was 0

Read succeeded.

The following data was read (only printable ASCII will display)

cdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

Read succeeded.

The following data was read (only printable ASCII will display)

abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12

Attempted read/write past end of file.

Error. Return value was 0

## Test Two – Execute Tests 1, 5, 7, 19 – 30 in Sequence

### Test Description

Execute the following simple tests in strict sequence:

1, 5, 7, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30

Create a new file, write to the file, make a subdirectory, read from the subdirectory, make a file in the subdirectory, and create several more complex files.

Get file attributes from several files.

### Test Type

Complex

### Result

EXPECTED OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

Total Free Blocks = 502

sfs\_create succeeded.

Open succeeded. File Descriptor number is 1

Total Free Blocks = 498

sfs\_create succeeded.

Open succeeded. File Descriptor number is 2

Directory contents empty.

sfs\_readdir succeeded.

No more entries in this directory

Total Free Blocks = 496

sfs\_create succeeded.

Open succeeded. File Descriptor number is 3

Total Free Blocks = 494

sfs\_create succeeded.

Total Free Blocks = 492

sfs\_create succeeded.

Invalid path specified.

Error. Return value was 0

sfs\_delete succeeded.

Overhead Size = 256

Size = 3

sfs\_getsize succeeded.

sfs\_gettype succeeded.

file type is DIRECTORY

sfs\_close succeeded.

## Test Three – Execute Tests 1, 5, 9, 31 in Sequence

### Test Description

Execute the following simple tests in strict sequence:

1, 5, 9, 31

Create a file, write multiple data blocks, then delete that file.

### Test Type

Complex

### Result

EXPECTED OUTPUT:

Total Free Blocks = 504

Total Free Blocks = 502

sfs\_create succeeded.

Total Free Blocks = 500

Write succeeded.

Wrote abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12 to the disk

sfs\_close succeeded.

ACTUAL OUTPUT:

Total Free Blocks = 504

Total Free Blocks = 502

sfs\_create succeeded.

Total Free Blocks = 500

Write succeeded.

Wrote abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz1234567890!@#$%^&\*()-\_+=\][;',./|}12 to the disk

sfs\_close succeeded.

## Test Four – Execute Tests 1, 32 – 38 in Sequence

### Test Description

Execute the following simple tests in strict sequence:

1, 9, 32, 33, 34, 35, 36, 37, 38

Make a subdirectory, attempt various invalid deletion operations, perform a legal deletion, write several files, and open a directory after files have been deleted from it.

### Test Type

Complex

### Result

EXPECTED OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

Total Free Blocks = 502

sfs\_create succeeded.

Total Free Blocks = 500

sfs\_create succeeded.

Directory has children.

Error. Return value was 0

Open succeeded. File Descriptor number is 1

Total Free Blocks = 499

Write succeeded.

Wrote stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|} to the disk

Read succeeded.

The following data was read (only printable ASCII will display)

stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|}

sfs\_delete succeeded.

Open succeeded. File Descriptor number is 2

ACTUAL OUTPUT:

Total Free Blocks = 504

sfs\_initialize succeeded.

Total Free Blocks = 502

sfs\_create succeeded.

Total Free Blocks = 500

sfs\_create succeeded.

Directory has children.

Error. Return value was 0

Open succeeded. File Descriptor number is 1

Total Free Blocks = 499

Write succeeded.

Wrote stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|} to the disk

Read succeeded.

The following data was read (only printable ASCII will display)

stuvwxyz1234567890!@#$%^&\*()-\_abcdefghijkl67890!@#$%^&\*()-\_+=\mnopqr+=\][;',./|}{:"<>?`~abcdefghijklmnopqrstuvwxyz12345][;',./|}

sfs\_delete succeeded.

Open succeeded. File Descriptor number is 2