Sheepy - Examples

Level 0

examples/0/hello_world.sh

```
#!/bin/dash
echo hello world
```

examples/0/hello_world.py

```
#!/usr/bin/python3 -u
print('hello', 'world')
```

examples/0/ls-l.sh

```
#!/bin/dash
ls -l /dev/null
```

examples/0/ls-l.py

```
#!/usr/bin/python3 -u
import subprocess
subprocess.call(['ls', '-l', '/dev/null'])
```

examples/0/ls.sh

```
#!/bin/dash
ls /dev/null
```

examples/0/ls.py

```
#!/usr/bin/python3 -u
import subprocess
subprocess.call(['ls', '/dev/null'])
```

examples/0/pwd.sh

```
#!/bin/dash
pwd
```

examples/0/pwd.py

```
#!/usr/bin/python3 -u
import subprocess
subprocess.call(['pwd'])
```

examples/0/single.sh

```
#!/bin/dash
pwd
ls
id
date
```

examples/0/single.py

```
#!/usr/bin/python3 -u
import subprocess
subprocess.call(['pwd'])
subprocess.call(['ls'])
subprocess.call(['id'])
subprocess.call(['date'])
```

examples/0/truth0.sh

```
#!/bin/dash
echo And I told you to be patient
echo And I told you to be fine
echo And I told you to be balanced
echo And I told you to be kind
```

examples/0/truth0.py

```
#!/usr/bin/python3 -u
print('And', 'I', 'told', 'you', 'to', 'be', 'patient')
print('And', 'I', 'told', 'you', 'to', 'be', 'fine')
print('And', 'I', 'told', 'you', 'to', 'be', 'balanced')
print('And', 'I', 'told', 'you', 'to', 'be', 'kind')
```

examples/0/variables0.sh

```
#!/bin/dash
a=hello
b=world
echo $a $b
```

examples/0/variables0.py

```
#!/usr/bin/python3 -u
a = 'hello'
b = 'world'
print(a, b)
```

Level 1

examples/1/cd.sh

examples/1/cd.py

```
#!/bin/dash
cd /tmp
pwd
```

```
#!/usr/bin/python3 -u
import os
import subprocess
os.chdir('/tmp')
subprocess.call(['pwd'])
```

examples/1/for.sh

```
#!/bin/dash

for word in Houston 1202 alarm
do
    echo $word
done
```

examples/1/for.py

```
#!/usr/bin/python3 -u

for word in 'Houston', 1202, 'alarm':
    print(word)
```

examples/1/for_exit.sh

```
#!/bin/dash

for word in Houston 1202 alarm
do
    echo $word
    exit 0
done
```

examples/1/for_exit.py

```
#!/usr/bin/python3 -u
import sys

for word in 'Houston', 1202, 'alarm':
    print(word)
    sys.exit(0)
```

examples/1/for_gcc.sh

```
#!/bin/dash
for c_file in *.c
do
    echo gcc -c $c_file
done
```

examples/1/for_gcc.py

```
#!/usr/bin/python3 -u
import glob
for c_file in sorted(glob.glob("*.c")):
    print('gcc', '-c', c_file)
```

examples/1/for_read0.sh

```
#!/bin/dash

for n in one two three
do
    read line
    echo Line $n $line
done
```

examples/1/for_read0.py

```
#!/usr/bin/python3 -u
import sys

for n in 'one', 'two', 'three':
    line = sys.stdin.readline().strip()
    print('Line', n, line)
```

Level 2

examples/2/args.sh

```
#!/bin/dash

echo My first argument is $1
echo My second argument is $2
echo My third argument is $3
echo My fourth argument is $4
echo My fifth argument is $5
```

examples/2/args.py

```
#!/usr/bin/python3 -u
import sys

print('My', 'first', 'argument', 'is', sys.argv[1])
print('My', 'second', 'argument', 'is', sys.argv[2])
print('My', 'third', 'argument', 'is', sys.argv[3])
print('My', 'fourth', 'argument', 'is', sys.argv[4])
print('My', 'fifth', 'argument', 'is', sys.argv[5])
```

examples/2/elif.sh

examples/2/elif.py

```
#!/bin/dash
if test Andrew = great
then
    echo correct
elif test Andrew = fantastic
then
    echo yes
else
    echo error
fi
```

```
#!/usr/bin/python3 -u
if 'Andrew' == 'great':
    print('correct')
elif 'Andrew' == 'fantastic':
    print('yes')
else:
    print('error')
```

examples/2/if.sh

```
#!/bin/dash
if test Andrew = great
then
    echo correct
else
    echo error
fi
```

examples/2/if.py

```
#!/usr/bin/python3 -u
if 'Andrew' == 'great':
    print('correct')
else:
    print('error')
```

examples/2/single_quotes.sh

```
#!/bin/dash
echo 'hello world'
```

examples/2/single_quotes.py

```
#!/usr/bin/python3 -u
print('hello world')
```

examples/2/truth2.sh

```
#!/bin/dash
echo 'When old age shall this generation waste,'
echo 'Thou shalt remain, in midst of other woe'
echo 'Than ours, a friend to man, to whom thou sayst,'
echo '"Beauty is truth, truth beauty",  -  that is all'
echo 'Ye know on earth, and all ye need to know.'
```

examples/2/truth2.py

```
#!/usr/bin/python3 -u
print('When old age shall this generation waste,')
print('Thou shalt remain, in midst of other woe')
print('Than ours, a friend to man, to whom thou sayst,')
print('"Beauty is truth, truth beauty",  -  that is all')
print('Ye know on earth, and all ye need to know.')
```

examples/2/while0.sh

```
#!/bin/dash
status=off
while test $status != on
do
    echo status is $status
    status=on
done
```

examples/2/while0.py

```
#!/usr/bin/python3 -u
status = 'off'
while status != 'on':
    print('status is', status)
    status = 'on'
```

examples/2/while1.sh

```
#!/bin/dash
row=1
while test $row != 11111111111
do
    echo $row
    row=1$row
done
```

examples/2/while1.py

```
#!/usr/bin/python3 -u
row = '1'
while row != '11111111111':
    print(row)
    row = f'1{row}'
```

Level 3

examples/3/backticks0.sh

```
#!/bin/dash
a=`printf hi`
echo $a
```

examples/3/backticks0.py

```
#!/usr/bin/python3 -u
import subprocess
a = subprocess.run(['printf', 'hi'], text=True,
stdout=subprocess.PIPE).stdout.strip()
print(a)
```

examples/3/double_quotes.sh

```
#!/bin/dash
echo "hello world"
```

examples/3/double_quotes.py

```
#!/usr/bin/python3 -u
print("hello world")
```

examples/3/filetest0.sh

```
#!/bin/dash
if test -r /dev/null
then
    echo a
fi
if test -r nonexistantfile
then
    echo b
fi
```

examples/3/filetest0.py

```
#!/usr/bin/python3 -u
import os
if os.access('/dev/null', os.R_OK):
    print('a')
if os.access('nonexistantfile', os.R_OK):
    print('b')
```

examples/3/filetest1.sh

```
#!/bin/dash
if test -d /dev/null
then
    echo /dev/null
fi
if test -d /dev
then
    echo /dev
fi
```

examples/3/filetest1.py

```
#!/usr/bin/python3 -u
import os
if os.path.isdir('/dev/null'):
    print('/dev/null')
if os.path.isdir('/dev'):
    print('/dev')
```

examples/3/l.sh

```
#!/bin/dash
# l [file|directories...] - list files
# written by andrewt@cse.unsw.edu.au as a COMP2041 example

ls -las "$@"
```

examples/3/l.py

```
#!/usr/bin/python3 -u
import subprocess
import sys
# l [file|directories...] - list files
# written by andrewt@cse.unsw.edu.au as a COMP2041 example

subprocess.call(['ls', '-las'] + sys.argv[1:])
```

examples/3/sequence0.sh

examples/3/sequence0.py

```
#!/bin/dash
# print a contiguous integer sequence
start=$1
finish=$2

number=$start
while test $number -le $finish
do
    echo $number
    number=`expr $number + 1`  # increment number
done
```

```
#!/usr/bin/python3 -u
import subprocess
import sys
# print a contiguous integer sequence
start = sys.argv[1]
finish = sys.argv[2]

number = start
while int(number) <= int(finish):
    print(number)
    number = subprocess.run(['expr', number, '+', '1'],
text=True, stdout=subprocess.PIPE).stdout.strip()  #
increment number
```

examples/3/while1.sh

examples/3/while1.py

```
#!/bin/dash
x='###'
while test $x != '########'
do
    y='#'
    while test $y != $x
    do
        echo $y
        y="${y}#"
    done
    x="${x}#"
done
```

```
#!/usr/bin/python3 -u
x = '###'
while x != '########':
    y = '#'
    while y != x:
        print(y)
        y = f"{y}#"
    x = f"{x}#"
```

examples/3/while2.sh

examples/3/while2.py

```
#!/bin/dash
x='###'
while test $x != '########'
do
    y='#'
    while test $y != $x
    do
        echo $y
        y="${y}#"
    done
    x="${x}#"
done
```

```
#!/usr/bin/python3 -u
x = "###"
while x != "########":
    y = '#'
    while y != x:
        print(y)
        y = f"{y}#"
    x = f"{x}#"
```

examples/3/while_if0.sh

examples/3/while_if0.py

```
#!/bin/dash
status=off
while test "$status" != on
do
    echo "status is $status"
    if test "$status" = "half on"
    then
        status="on"
    else
        status="half on"
    fi
done
```

```
#!/usr/bin/python3 -u
status = 'off'
while status != 'on':
    print(f'status is {status}')
    if status == 'half on':
        status = 'on'
    else:
        status = 'half on'
```

Level 4

examples/4/filetest2.sh

```
#!/bin/dash
if [ -d /dev/null ]
then
    echo /dev/null
fi
if [ -d /dev ]
then
    echo /dev
fi
```

examples/4/filetest2.py

```
#!/usr/bin/python3 -u
import os
if os.path.isdir('/dev/null'):
    print('/dev/null')
if os.path.isdir('/dev'):
    print('/dev')
```

examples/4/sequence1.sh

```
#!/bin/dash
# print a contiguous integer sequence
start=$1
finish=$2

number=$start
while [ $number -le $finish ]
do
    echo $number
    number=$(($number + 1))  # increment number
done
```

examples/4/sequence1.py

```
#!/usr/bin/python3 -u
import sys
# print a contiguous integer sequence
start = sys.argv[1]
finish = sys.argv[2]

number = start
while int(number) <= int(finish):
    print(number)
    number = int(number) + 1  # increment number
```

examples/4/series.sh

examples/4/series.py

```
#!/bin/dash
start=13
if test $# -gt 0
then
    start=$1
fi
i=0
number=$start
file=./tmp.numbers
rm -f $file
while true
do
    if test -r $file
    then
        if fgrep -x -q $number $file
        then
            echo Terminating: series is repeating
            exit 0
        fi
    fi
    echo $number >>$file
    echo $i $number
    k=`expr $number % 2`
    if test $k -eq 1
    then
        number=`expr 7 '*' $number + 3`
    else
        number=`expr $number / 2`
    fi
     i=`expr $i + 1`
    if test $number -gt 100000000 -o  $number -lt
-100000000
    then
        echo Terminating: too large
        exit 0
    fi
done
rm -f $file
```

```
#!/usr/bin/python3 -u
import os
import subprocess
import sys
start = 13
if len(sys.argv[1:]) > 0:
    start = sys.argv[1]
i = 0
number = start
file = './tmp.numbers'
subprocess.call(['rm', '-f', str(file)])
while not subprocess.call(['true']):
    if os.access(file, os.R_OK):
        if not subprocess.call(['fgrep', '-x', '-q',
str(number), str(file)]):
            print('Terminating:', 'series', 'is',
'repeating')
            sys.exit(0)
    with open(file, 'a') as f:
        print(number, file=f)
    print(i, number)
    k = int(number) % 2
    if k == 1:
        number = 7 * int(number) + 3
    else:
        number = int(number) // 2
    i = i + 1
    if int(number) > 100000000 or int(number) <
-100000000:
        print('Terminating:', 'too', 'large')
        sys.exit(0)
subprocess.call(['rm', '-f', str(file)])
```