

# Advanced Python. Assignment 1

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## 1 Task 1

```
import subprocess

def run_command(cmd):
    proc = subprocess.Popen(cmd,
                             shell=True,
                             universal_newlines=True,
                             stdout=subprocess.PIPE,
                             stderr=subprocess.PIPE,
                             encoding="cp866")

    try:
        stdout, stderr = proc.communicate(timeout=10)
    except subprocess.TimeoutExpired:
        proc.kill()
        stdout, stderr = proc.communicate()

    print(stdout)
    print(stderr)

def main():
    while True:
        try:
            cmd = input("myshell> ")
            if cmd == "exit":
                break
            run_command(cmd)
        except EOFError:
            break
    print("Goodbye!")
```

```
main()
```

## 2 Task 2

```
import subprocess
import os
```

```
def run_command(cmd):
    proc = subprocess.Popen(cmd,
                             shell=True,
                             universal_newlines=True,
                             stdout=subprocess.PIPE,
                             stderr=subprocess.PIPE,
                             encoding="cp866")

    try:
        stdout, stderr = proc.communicate(timeout=10)
    except subprocess.TimeoutExpired:
        proc.kill()
        stdout, stderr = proc.communicate()

    print(stdout)
    print(stderr)
```

```
def change_dir(path):
    try:
        os.chdir(os.path.abspath(path))
    except Exception:
        print("myshell> cd: no such file or directory: {}".format(path))
```

```
def screw_path():
    path = os.getcwd()
    screwed_path = ""
    if os.name == 'nt':
        path = path.split('\\')
        screwed_path += path[0]
        if len(path) != 1:
            for i in range(1, len(path)):
                screwed_path += '\\ ' + path[i][0]
    else:
        path = path.split('/')
        for i in range(0, len(path)):
            screwed_path += '/' + path[i][0]
    return screwed_path
```

```

def main():
    while True:
        try:
            cmd = input("myshell [{}]> ".format(screw_path()))
            if cmd == "exit":
                break
            elif cmd[:3] == "cd ":
                change_dir(cmd[3:])
            else:
                run_command(cmd)
        except EOFError:
            break
    print("Goodbye!")

```

```
main()
```

### 3 Task 3

```

import subprocess
import os
import logging

```

```

def log(cmd, proc, stdout):
    cmd = cmd.split()
    logging.debug('%s, args: %s, stdout: %d, pid: %d, exit: %d',
                  cmd[0],
                  cmd[1:],
                  stdout.count("\n"),
                  proc.pid,
                  proc.returncode)

```

```

def log_cd(cmd, exit_code):
    cmd = cmd.split()
    logging.debug('%s, args: %s, stdout: %d, exit: %d',
                  cmd[0],
                  cmd[1:],
                  0,
                  exit_code)

```

```
def run_command(cmd):
```

```

proc = subprocess.Popen(cmd,
                        shell=True,
                        universal_newlines=True,
                        stdout=subprocess.PIPE,
                        stderr=subprocess.PIPE,
                        encoding="cp866")

try:
    stdout, stderr = proc.communicate(timeout=10)
except subprocess.TimeoutExpired:
    proc.kill()
    stdout, stderr = proc.communicate()
log(cmd, proc, stdout)
print(stdout)
print(stderr)

def change_dir(cmd):
    try:
        os.chdir(os.path.abspath(cmd[3:]))
        log_cd(cmd, 0)
    except Exception:
        print("myshell> cd: no such file or directory: {}".format(cmd[3:]))
        log_cd(cmd, -1)

def screw_path():
    path = os.getcwd()
    screwed_path = ""
    if os.name == 'nt':
        path = path.split('\\')
        screwed_path += path[0]
        if len(path) != 1:
            for i in range(1, len(path)):
                screwed_path += '\\'+ path[i][0]
    else:
        path = path.split('/')
        for i in range(0, len(path)):
            screwed_path += '/' + path[i][0]
    return screwed_path

def main():
    while True:
        try:
            cmd = input("myshell [{}]> ".format(screw_path()))
            if cmd == "exit":

```

```

        break
    elif cmd[:3] == "cd ":
        change_dir(cmd)
    else:
        run_command(cmd)
except EOFError:
    break
print("Goodbye!")

```

```

LOG_FILE = "myshell.log"
logging.basicConfig(level=logging.DEBUG,
                    filename=LOG_FILE,
                    format='%(asctime)s] cmd:%(message)s')
main()

```

## 4 Task 4

```

import subprocess
import os
import logging

def log(cmd, proc, stdout):
    cmd = cmd.split()
    logging.debug('%s, args: %s, stdout: %d, pid: %d, exit: %d',
                  cmd[0],
                  cmd[1:],
                  stdout.count("\n"),
                  proc.pid,
                  proc.returncode)

def log_cd(cmd, exit_code):
    cmd = cmd.split()
    logging.debug('%s, args: %s, stdout: %d, exit: %d',
                  cmd[0],
                  cmd[1:],
                  0,
                  exit_code)

def run_command(cmd, err_file):
    proc = subprocess.Popen(cmd,
                             shell=True,
                             universal_newlines=True,

```

```

                                stdout=subprocess.PIPE,
                                stderr=err_file ,
                                encoding="cp866")

    try:
        stdout, stderr = proc.communicate(timeout=10)
    except subprocess.TimeoutExpired:
        proc.kill()
        stdout, stderr = proc.communicate()
    print(stdout)
    log(cmd, proc, stdout)

def change_dir(cmd, err_file):
    try:
        os.chdir(os.path.abspath(cmd[3:]))
        log_cd(cmd, 0)
    except Exception:
        err_file.write("cd: no such file or directory: {}".format(cmd[3:]))

def screw_path():
    path = os.getcwd()
    screwed_path = ""
    if os.name == 'nt':
        path = path.split('\\')
        screwed_path += path[0]
        if len(path) != 1:
            for i in range(1, len(path)):
                screwed_path += '\\'+ path[i][0]
    else:
        path = path.split('/')
        for i in range(0, len(path)):
            screwed_path += '/' + path[i][0]
    return screwed_path

def main():
    err_file = open("myshell.stderr", "a+")
    while True:
        try:
            cmd = input("myshell [{}]> ".format(screw_path()))
            if cmd == "exit":
                break
            elif cmd[:3] == "cd ":
                change_dir(cmd, err_file)
            else:

```

```
        run_command(cmd, err_file)
    except EOFError:
        break
    err_file.close()
print("Goodbye!")
```

```
LOG_FILE = "myshell.log"
logging.basicConfig(level=logging.DEBUG,
                    filename=LOG_FILE,
                    format='%(asctime)s] cmd:%(message)s ')
main()
```