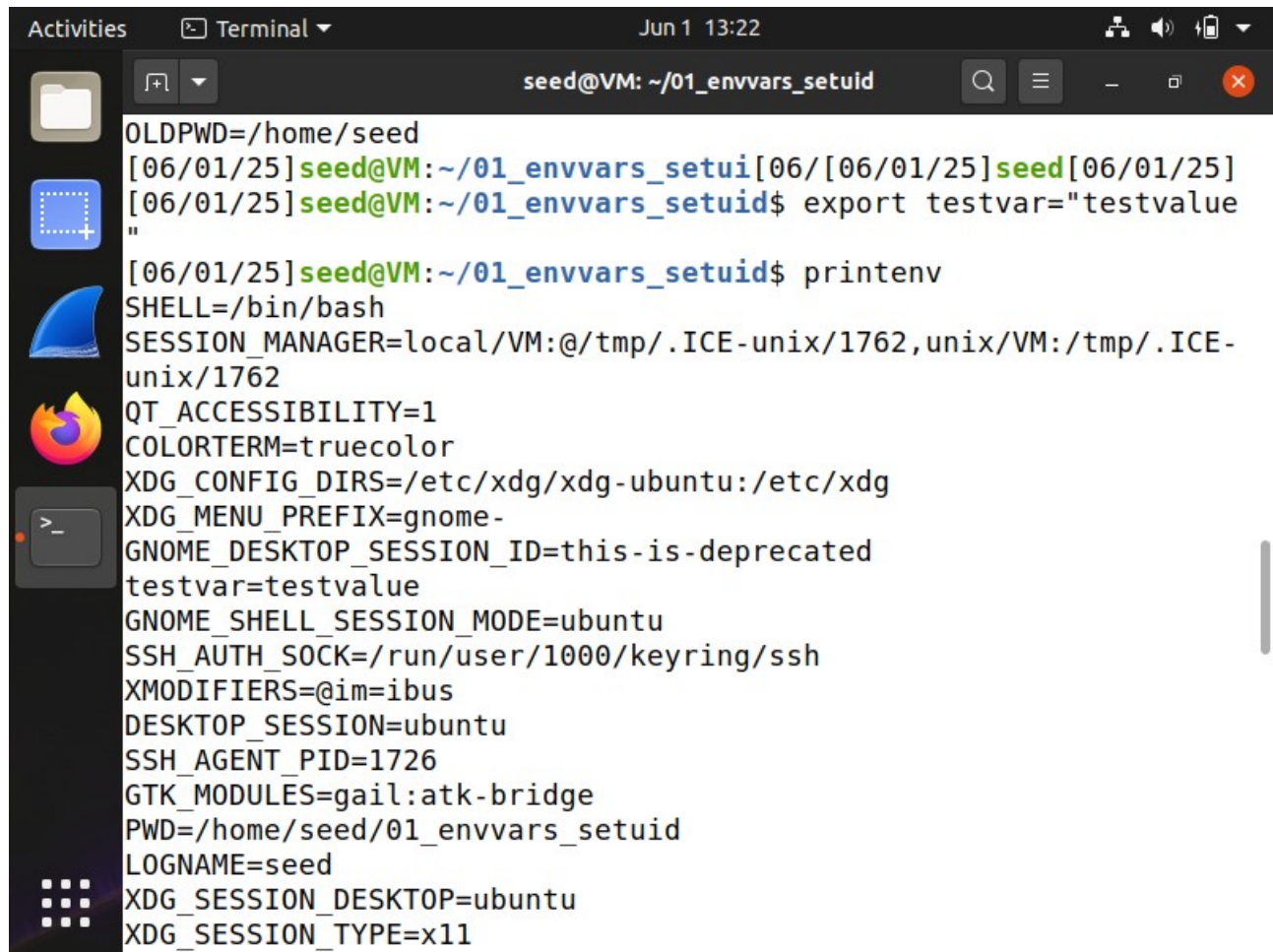


## Task 1: Manipulating Environment Variables

### Task 1.1: Viewing Environment Variables

I used the `printenv` command to display all current environment variables.

A terminal window titled 'seed@VM: ~/01\_envvars\_setuid' showing the output of the 'printenv' command. The output lists various environment variables such as OLDPWD, SHELL, SESSION\_MANAGER, QT\_ACCESSIBILITY, and XDG\_SESSION\_TYPE. The terminal interface includes a sidebar with application icons and a top bar with system status and window controls.

```
Activities Terminal Jun 1 13:22
seed@VM: ~/01_envvars_setuid
OLDPWD=/home/seed
[06/01/25] seed@VM: ~/01_envvars_setuid [06/01/25] seed [06/01/25]
[06/01/25] seed@VM: ~/01_envvars_setuid$ export testvar="testvalue"
[06/01/25] seed@VM: ~/01_envvars_setuid$ printenv
SHELL=/bin/bash
SESSION_MANAGER=local/VM:@/tmp/.ICE-unix/1762,unix/VM:/tmp/.ICE-unix/1762
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
testvar=testvalue
GNOME_SHELL_SESSION_MODE=ubuntu
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
SSH_AGENT_PID=1726
GTK_MODULES=gail:atk-bridge
PWD=/home/seed/01_envvars_setuid
LOGNAME=seed
XDG_SESSION_DESKTOP=ubuntu
XDG_SESSION_TYPE=x11
```

Observations: The output lists key-value pairs representing the environment variables available in the current shell session.

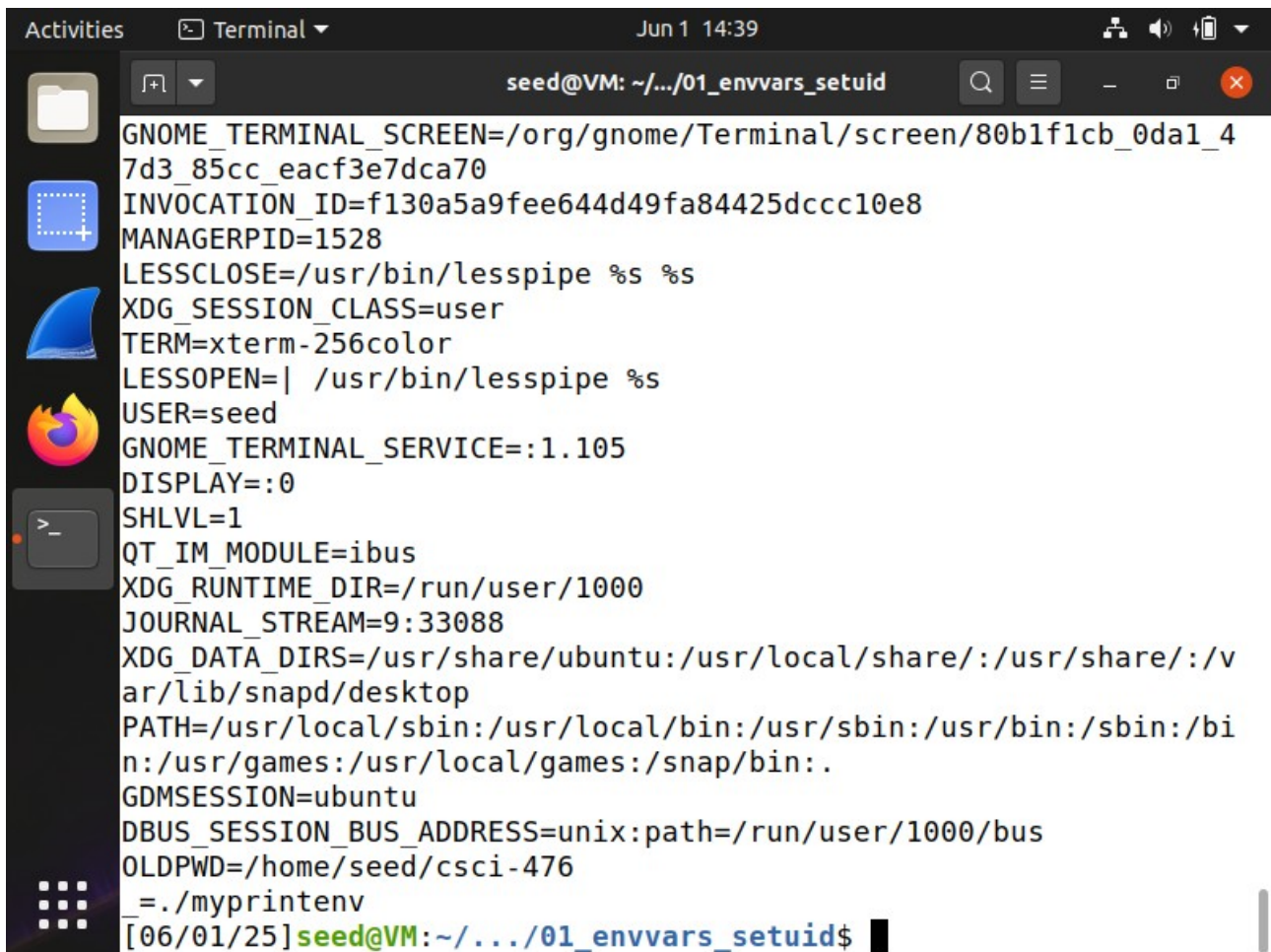
## Task 2: Passing Environment Variables (Parent → Child)

### Task 2.1: Child Process Environment Variables

I compiled and ran the provided `myprintenv.c` program, which prints environment variables from the child process. The output was redirected to a file named `myenv1`.

```
Activities  Terminal Jun 1 14:38
seed@VM: ~/.../01_envvars_setuid

remote: Total 582 (delta 115), reused 524 (delta 76), pack-reuse
d 0 (from 0)
Receiving objects: 100% (582/582), 12.13 MiB | 1.12 MiB/s, done.
Resolving deltas: 100% (115/115), done.
[06/01/25]seed@VM:~$ ls
01_envvars_setuid  Documents  Music      Templates
csci-476           Downloads  Pictures   Videos
Desktop           lab0       Public
[06/01/25]seed@VM:~$ cd csci-476/
[06/01/25]seed@VM:~/csci-476$ ls
00_intro          04_sqli      08_ske      README.md
01_envvars_setuid 05_xss       09_hashing  sniff_spoof
02_shellshock     06_tcp_attacks apple_arm
03_buffer_overflow 07_dns_attacks arm_build
[06/01/25]seed@VM:~/csci-476$ cd 01_envvars_setuid/
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ls
cal.c      ls_vuln.c      myenv_execve.c  myprintenv.c
cap_leak.c Makefile        myenv_pwd.c     passenv.c
catall.c   myenv_environ.c myenv_system.c  README.md
hello.c    myenv_envp.c    mylib.c         sleep_prog.c
[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc myprintenv.c -o m
yprintenv
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ./myprintenv > myenv1
[06/01/25]seed@VM:~/.../01_envvars_setuid$
```

A terminal window titled 'seed@VM: ~/.../01\_envvars\_setuid' displays a list of environment variables. The variables include GNOME\_TERMINAL\_SCREEN, INVOCATION\_ID, MANAGERPID, LESSCLOSE, XDG\_SESSION\_CLASS, TERM, LESSOPEN, USER, GNOME\_TERMINAL\_SERVICE, DISPLAY, SHLVL, QT\_IM\_MODULE, XDG\_RUNTIME\_DIR, JOURNAL\_STREAM, XDG\_DATA\_DIRS, PATH, GDMSESSION, DBUS\_SESSION\_BUS\_ADDRESS, OLDPWD, and the command './myprintenv'. The output shows the values for each variable, such as '/org/gnome/Terminal/screen/80b1f1cb\_0da1\_47d3\_85cc\_eacf3e7dca70' for GNOME\_TERMINAL\_SCREEN and 'seed' for USER. The prompt at the bottom is '[06/01/25] seed@VM: ~/.../01\_envvars\_setuid\$'.

```
GNOME_TERMINAL_SCREEN=/org/gnome/Terminal/screen/80b1f1cb_0da1_47d3_85cc_eacf3e7dca70
INVOCATION_ID=f130a5a9fee644d49fa84425dccc10e8
MANAGERPID=1528
LESSCLOSE=/usr/bin/lesspipe %s %s
XDG_SESSION_CLASS=user
TERM=xterm-256color
LESSOPEN=| /usr/bin/lesspipe %s
USER=seed
GNOME_TERMINAL_SERVICE=:1.105
DISPLAY=:0
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
JOURNAL_STREAM=9:33088
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/local/share:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:.
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
OLDPWD=/home/seed/csci-476
./myprintenv
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
```

Observations: The child process inherits environment variables from the parent process, as evidenced by the environment variables listed in myenv1.

## Task 2.2: Parent Process Environment Variables

I modified myprintenv.c to comment out the printenv() call in the child process and uncomment it in the parent process. After recompiling and running the program, I redirected the output to out2.



```
Activities Terminal Jun 1 14:42
seed@VM: ~/.../01_envvars_setuid

TERM=xterm-256color
LESSOPEN=| /usr/bin/lesspipe %s
USER=seed
GNOME_TERMINAL_SERVICE=:1.105
DISPLAY=:0
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
JOURNAL_STREAM=9:33088
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/local/share:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:.
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
OLDPWD=/home/seed/csci-476
./myprintenv
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ls
cal.c      ls_vuln.c      myenv_envp.c    mylib.c         passenv.c
cap_leak.c Makefile        myenv_execve.c  myprintenv      README.md
catall.c   myenv1         myenv_pwd.c     myprintenv.c    sleep_prog.c
hello.c    myenv_envron.c myenv_system.c  out2
[06/01/25]seed@VM:~/.../01_envvars_setuid$ vim myenv1
[06/01/25]seed@VM:~/.../01_envvars_setuid$ vim out2
[06/01/25]seed@VM:~/.../01_envvars_setuid$
```

Observations: The parent process's environment variables are consistent with those of the child process, indicating inheritance.

### Task 2.3: Comparing Parent and Child Environment Variables

I used the diff myenv1 out2 command to compare the environment variables of the parent and child processes.

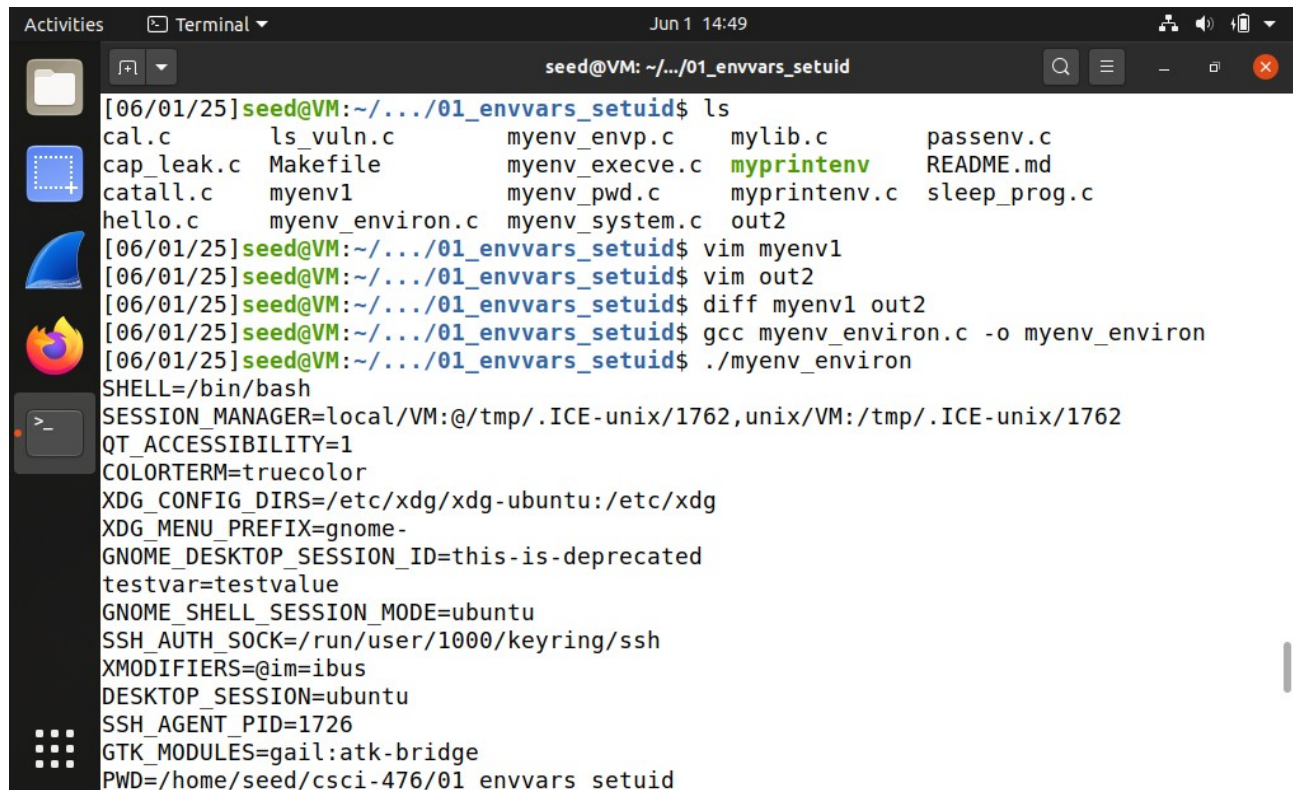
```
Activities Terminal Jun 1 14:43
seed@VM: ~/.../01_envvars_setuid

LESSOPEN=| /usr/bin/lesspipe %s
USER=seed
GNOME_TERMINAL_SERVICE=:1.105
DISPLAY=:0
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
JOURNAL_STREAM=9:33088
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/local/share:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:.
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
OLDPWD=/home/seed/csci-476
./myprintenv
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ls
cal.c      ls_vuln.c      myenv_envp.c    mylib.c         passenv.c
cap_leak.c Makefile        myenv_execve.c  myprintenv      README.md
catall.c   myenv1         myenv_pwd.c     myprintenv.c    sleep_prog.c
hello.c    myenv_envron.c myenv_system.c  out2
[06/01/25]seed@VM:~/.../01_envvars_setuid$ vim myenv1
[06/01/25]seed@VM:~/.../01_envvars_setuid$ vim out2
[06/01/25]seed@VM:~/.../01_envvars_setuid$ diff myenv1 out2
[06/01/25]seed@VM:~/.../01_envvars_setuid$
```

Observations: The absence of differences confirms that environment variables are inherited from parent to child processes.

### Task 3: Environment Variables and execve()

#### Task 3.1: Executing /usr/bin/env with NULL Environment



```
Activities  Terminal  Jun 1 14:49
seed@VM: ~/.../01_envvars_setuid

[06/01/25] seed@VM:~/.../01_envvars_setuid$ ls
cal.c      ls_vuln.c      myenv_envp.c    mylib.c        passenv.c
cap_leak.c Makefile        myenv_execve.c  myprintenv     README.md
catall.c   myenv1          myenv_pwd.c     myprintenv.c    sleep_prog.c
hello.c    myenv_environ.c myenv_system.c  out2

[06/01/25] seed@VM:~/.../01_envvars_setuid$ vim myenv1
[06/01/25] seed@VM:~/.../01_envvars_setuid$ vim out2
[06/01/25] seed@VM:~/.../01_envvars_setuid$ diff myenv1 out2
[06/01/25] seed@VM:~/.../01_envvars_setuid$ gcc myenv_environ.c -o myenv_environ
[06/01/25] seed@VM:~/.../01_envvars_setuid$ ./myenv_environ
SHELL=/bin/bash
SESSION_MANAGER=local/VM:@/tmp/.ICE-unix/1762,unix/VM:/tmp/.ICE-unix/1762
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
XDG_MENU_PREFIX=gnome-
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
testvar=testvalue
GNOME_SHELL_SESSION_MODE=ubuntu
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
XMODIFIERS=@im=ibus
DESKTOP_SESSION=ubuntu
SSH_AGENT_PID=1726
GTK_MODULES=gail:atk-bridge
PWD=/home/seed/csci-476/01_envvars_setuid
```

#### Task 3.2:

```
Activities Terminal Jun 1 14:51 seed@VM: ~/.../01_envvars_setuid
0
INVOCATION_ID=f130a5a9fee644d49fa84425dccc10e8
MANAGERPID=1528
LESSCLOSE=/usr/bin/lesspipe %s %s
XDG_SESSION_CLASS=user
TERM=xterm-256color
LESSOPEN=| /usr/bin/lesspipe %s
USER=seed
GNOME_TERMINAL_SERVICE=:1.105
DISPLAY=:0
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
JOURNAL_STREAM=9:33088
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/local/share/:/usr/share:/var/lib/snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:.
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
OLDPWD=/home/seed/csci-476
./myenv_environ
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chown root myenv_environ
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chmod 4755 myenv_environ
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
```

```
Activities Terminal Jun 1 15:02 seed@VM: ~/.../01_envvars_setuid
snapd/desktop
PATH=/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:.
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
./usr/bin/env
OLDPWD=/home/seed/csci-476
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ export PATH=.:$PATH
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ export LD_LIBRARY_PATH=.:$LD_LIBRARY_PATH
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ export TASK5="completed"
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ export TASK5="uuhhh"
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ./myenv_environ
SHELL=/bin/bash
SESSION_MANAGER=local/VM:@/tmp/.ICE-unix/1762,unix/VM:/tmp/.ICE-unix/1762
QT_ACCESSIBILITY=1
COLORTERM=truecolor
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/etc/xdg
```



```
Activities Terminal Jun 1 15:03
seed@VM: ~/.../01_envvars_setuid

INVOCATION_ID=f130a5a9fee644d49fa84425dccc10e8
MANAGERPID=1528
LESSCLOSE=/usr/bin/lesspipe %s %s
XDG_SESSION_CLASS=user
TERM=xterm-256color
LESSOPEN=| /usr/bin/lesspipe %s
USER=seed
GNOME_TERMINAL_SERVICE=:1.105
TASK5=uuhhh
DISPLAY=:0
SHLVL=1
QT_IM_MODULE=ibus
XDG_RUNTIME_DIR=/run/user/1000
JOURNAL_STREAM=9:33088
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/local/share/:/usr/share/:/var/lib/
snapd/desktop
PATH=./usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/us
r/games:/usr/local/games:/snap/bin:.
GDMSESSION=ubuntu
DBUS_SESSION_BUS_ADDRESS=unix:path=/run/user/1000/bus
OLDPWD=/home/seed/csci-476
```

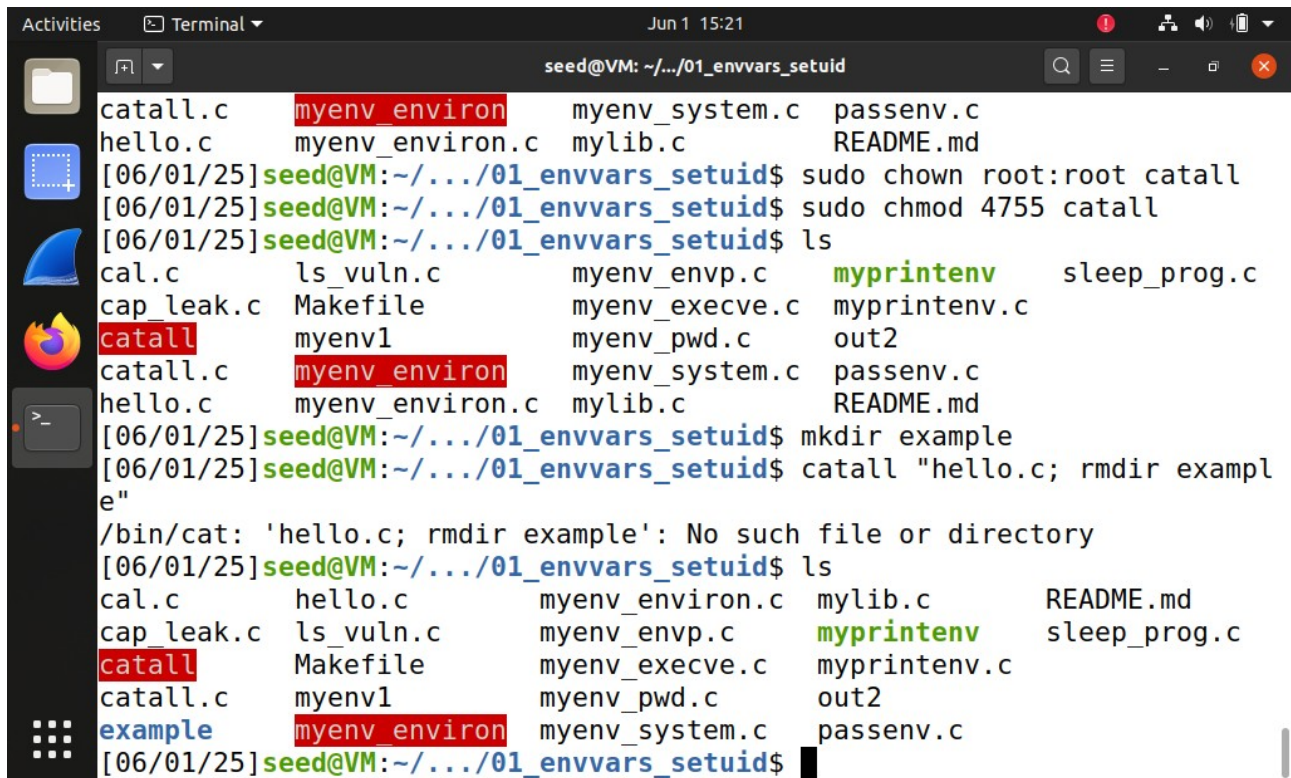
#### Task 4: Environment Variables and system()

I compiled and ran a program that uses the system() function to execute rmdir

```
Activities Terminal Jun 1 15:19
seed@VM: ~/.../01_envvars_setuid

[06/01/25] seed@VM: ~/.../01_envvars_setuid$ $ ./catall "hello.c; rmdir -f
example"
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ catall "; hello.c; rmdir -f e
xample"
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ $ catall "hello.c; rmdir - ex
ample"
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ catall "hello.c; rmdir exampl
e"
#include <stdio.h>
int main(void)
{
    printf("hello world\n");
    return 0;
}
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
cal.c      ls_vuln.c      myenv_envp.c    myprintenv      sleep_prog.c
cap_leak.c Makefile        myenv_execve.c  myprintenv.c
catall     myenv1          myenv_pwd.c     out2
catall.c   myenv_environ  myenv_system.c  passenv.c
hello.c    myenv_environ.c mylib.c          README.md
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
```

Observations: The `system()` function invokes a shell, which inherits the environment variables, allowing the executed command to access them.



```
Activities  Terminal  Jun 1 15:21
seed@VM: ~/.../01_envvars_setuid

catall.c    myenv_environ    myenv_system.c  passenv.c
hello.c     myenv_environ.c  mylib.c         README.md
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chown root:root catall
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chmod 4755 catall
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
cal.c       ls_vuln.c       myenv_envp.c    myprintenv    sleep_prog.c
cap_leak.c  Makefile        myenv_execve.c  myprintenv.c
catall      myenv1          myenv_pwd.c     out2
catall.c    myenv_environ    myenv_system.c  passenv.c
hello.c     myenv_environ.c  mylib.c         README.md
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ mkdir example
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ catall "hello.c; rmdir example"
/bin/cat: 'hello.c; rmdir example': No such file or directory
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
cal.c       hello.c         myenv_environ.c  mylib.c       README.md
cap_leak.c  ls_vuln.c       myenv_envp.c    myprintenv    sleep_prog.c
catall      Makefile        myenv_execve.c  myprintenv.c
catall.c    myenv1          myenv_pwd.c     out2
example     myenv_environ    myenv_system.c  passenv.c
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
```

only `system()` seems to make a new terminal, the other option seems to try the enclosed as a full command

## Task 5: Environment Variables and Set-UID Programs

### Task 5.1: Creating a Set-UID Program

I wrote a program that prints environment variables, compiled it, changed its ownership to root, and set the Set-UID bit.



```
Activities Terminal Jun 1 16:00 seed@VM: ~/.../01_envvars_setuid
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ mkdir example
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ catall "hello.c; rmdir exampl
e"
/bin/cat: 'hello.c; rmdir example': No such file or directory
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
cal.c      hello.c      myenv_environ.c  mylib.c      README.md
cap_leak.c ls_vuln.c    myenv_envp.c     myprintenv   sleep_prog.c
catall     Makefile     myenv_execve.c   myprintenv.c
catall.c   myenv1       myenv_pwd.c      out2
example    myenv_environ myenv_system.c   passenv.c
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ export PATH=/home/seed:$PATH
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ vim ls.c
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ gcc ls.c -o ls
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
redirected
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ gcc ls_vuln.c -o ls_vuln
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chmod 4755 ls_vuln
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chown root:root ls_vuln
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ./ls_vuln
redirected
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
```

```
Activities Terminal Jun 1 16:02 seed@VM: ~/.../01_envvars_setuid
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
cal.c      hello.c      myenv_environ.c  mylib.c      README.md
cap_leak.c ls_vuln.c    myenv_envp.c     myprintenv   sleep_prog.c
catall     Makefile     myenv_execve.c   myprintenv.c
catall.c   myenv1       myenv_pwd.c      out2
example    myenv_environ myenv_system.c   passenv.c
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ export PATH=/home/seed:$PATH
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ vim ls.c
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ gcc ls.c -o ls
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ls
redirected
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ gcc ls_vuln.c -o ls_vuln
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chmod 4755 ls_vuln
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ sudo chown root:root ls_vuln
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ./ls_vuln
redirected
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ vim ls.c
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ gcc ls.c -o ls
[06/01/25] seed@VM: ~/.../01_envvars_setuid$ ./ls_vuln
Not running as root (effective UID is 1000)
[06/01/25] seed@VM: ~/.../01_envvars_setuid$
```

Observations: The program runs with root privileges due to the Set-UID bit, but the environment variables available to it may differ from those of the invoking user.

#### Task 6: The PATH Environment Variable and Set-UID Programs

```
Activities Terminal Jun 1 16:14
seed@VM: ~/.../01_envvars_setuid

[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc -fPIC -g -c mylib.c
[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc -shared -o libmylib.so.1.0.1 mylib.o -lc
[06/01/25]seed@VM:~/.../01_envvars_setuid$ export LD_PRELOAD=./libmylib.so.1.0.1
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ls
cal.c          ls.c          myenv_envp.c  myprintenv.c
cap_leak.c     ls_vuln      myenv_execve.c out2
catall         ls_vuln.c    myenv_pwd.c   passenv.c
catall.c       Makefile     myenv_system.c README.md
example        myenv1       mylib.c       sleep_prog.c
hello.c        myenv_envron mylib.o
libmylib.so.1.0.1 myenv_envron.c myprintenv
[06/01/25]seed@VM:~/.../01_envvars_setuid$ vim myprog.c
[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc myprog.c -o myprog.c
gcc: fatal error: input file 'myprog.c' is the same as output file
compilation terminated.
[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc myprog.c -o myprog
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ./myprog
I'm not sleeping!
[06/01/25]seed@VM:~/.../01_envvars_setuid$
```

Observations: Modifying PATH can cause a Set-UID program to execute unintended commands, highlighting a security vulnerability.

```
Activities Terminal Jun 1 16:18
seed@VM: ~/.../01_envvars_setuid

cap_leak.c     ls_vuln      myenv_execve.c out2
catall         ls_vuln.c    myenv_pwd.c   passenv.c
catall.c       Makefile     myenv_system.c README.md
example        myenv1       mylib.c       sleep_prog.c
hello.c        myenv_envron mylib.o
libmylib.so.1.0.1 myenv_envron.c myprintenv
[06/01/25]seed@VM:~/.../01_envvars_setuid$ vim myprog.c
[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc myprog.c -o myprog.c
gcc: fatal error: input file 'myprog.c' is the same as output file
compilation terminated.
[06/01/25]seed@VM:~/.../01_envvars_setuid$ gcc myprog.c -o myprog
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ./myprog
I'm not sleeping!
[06/01/25]seed@VM:~/.../01_envvars_setuid$ sudo chown root:root myprog
[06/01/25]seed@VM:~/.../01_envvars_setuid$ sudo chmod 4755 myprog
[06/01/25]seed@VM:~/.../01_envvars_setuid$ ./myprog
[06/01/25]seed@VM:~/.../01_envvars_setuid$ sudo su
root@VM:/home/seed/csci-476/01_envvars_setuid# export LD_PRELOAD=./libmylib.so.1.0.1
root@VM:/home/seed/csci-476/01_envvars_setuid# ./myprog
I'm not sleeping!
```