

Task3

- 1) Nothing happened. That means the new program will not inherit the environment variables.

```
[09/09/21]seed@VM:~/Lab1$ vi task3.c
[09/09/21]seed@VM:~/Lab1$ cat task3.c
#include <stdio.h>
#include <stdlib.h>

extern char **environ;
int main()
{
char *argv[2];
argv[0] = "/usr/bin/env";
argv[1] = NULL;
execve("/usr/bin/env", argv, NULL);
return 0 ;
}
[09/09/21]seed@VM:~/Lab1$ gcc task3.c -o task3
task3.c: In function 'main':
task3.c:10:1: warning: implicit declaration of function 'execve' [-Wimplicit-function-declaration]
  execve("/usr/bin/env", argv, NULL);
  ^
[09/09/21]seed@VM:~/Lab1$ ./task3
[09/09/21]seed@VM:~/Lab1$
```

- 2) After chsngrng the third argument in execve from NULL to passing "environ," the environment variables are passed and printed.

```
[09/09/21]seed@VM:~/Lab1$ cat task3.c
#include <stdio.h>
#include <stdlib.h>

extern char **environ;
int main()
{
char *argv[2];
argv[0] = "/usr/bin/env";
argv[1] = NULL;
execve("/usr/bin/env", argv, environ);
return 0 ;
}
[09/09/21]seed@VM:~/Lab1$ ./task3
XDG_VTNR=7
XDG_SESSION_ID=c1
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed
CLUTTER_IM_MODULE=xim
SESSION=ubuntu
ANDROID_HOME=/home/seed/android/android-sdk-linux
GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1
TERM=xterm-256color
VTE_VERSION=4205
XDG_MENU_PREFIX=gnome-
SHELL=/bin/bash
DERBY_HOME=/usr/lib/jvm/java-8-oracle/db
QT_LINUX_ACCESSIBILITY_ALWAYS_ON=1
LD_PRELOAD=/home/seed/lib/boost/libboost_program_options.so
```

- 3) We conclude that the third argument to execve specifies which environment variables the new process should get.

Task4

- 1) After compiling and running, we can confirm that the environment variables of the calling process is passed to the new program using system().

```
[09/09/21]seed@VM:~/Lab1$ ./task4
LESSOPEN=| /usr/bin/lesspipe %s
GNOME_KEYRING_PID=
USER=seed
LANGUAGE=en_US
J2SDKDIR=/usr/lib/jvm/java-8-oracle
XDG_SEAT=seat0
SESSION=ubuntu
XDG_SESSION_TYPE=x11
COMPIZ_CONFIG_PROFILE=ubuntu
LD_LIBRARY_PATH=/home/seed/source/boost_1_64_0/stage/lib:/home/seed/source/boost_1_64_0/stage/lib:
SHLVL=1
LIBGL_ALWAYS_SOFTWARE=1
J2REDIR=/usr/lib/jvm/java-8-oracle/jre
HOME=/home/seed
System Settings  =xim
OLDPWD=/home/seed
DESKTOP_SESSION=ubuntu
QT_LINUX_ACCESSIBILITY_ALWAYS_ON=1
GTK_MODULES=gail:atk-bridge:unity-gtk-module
XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0
INSTANCE=
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-UTGfzprPra
GNOME_KEYRING_CONTROL=
QT_QPA_PLATFORMTHEME=appmenu-qt5
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
IM_CONFIG_PHASE=1
SESSIONTYPE=gnome-session
LOGNAME=seed
GTK_IM_MODULE=ibus
```

Task5

- 1)