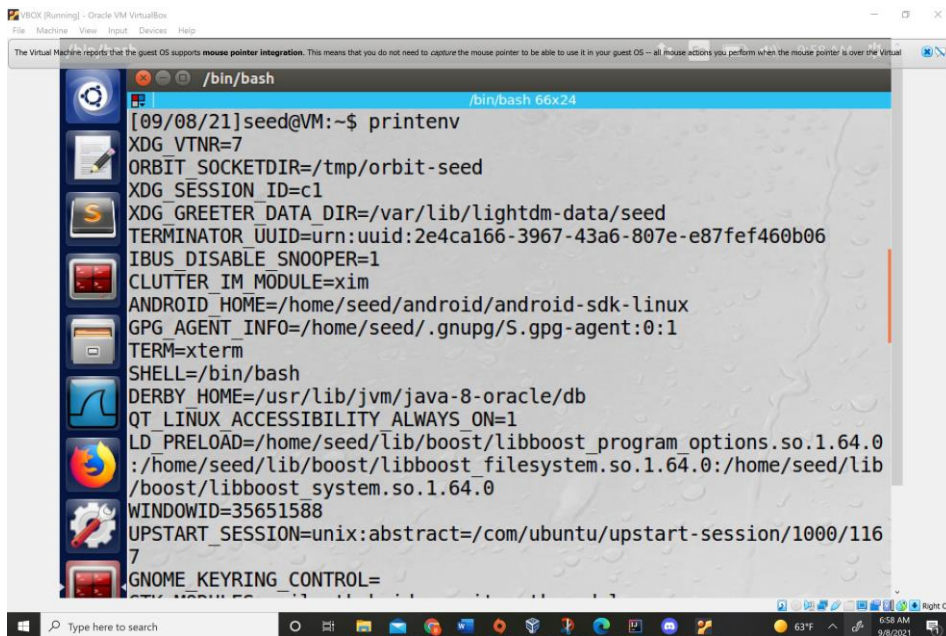


Ben Sottile

Set UID and Environmental Variable Challenge

Lab Task 2.1

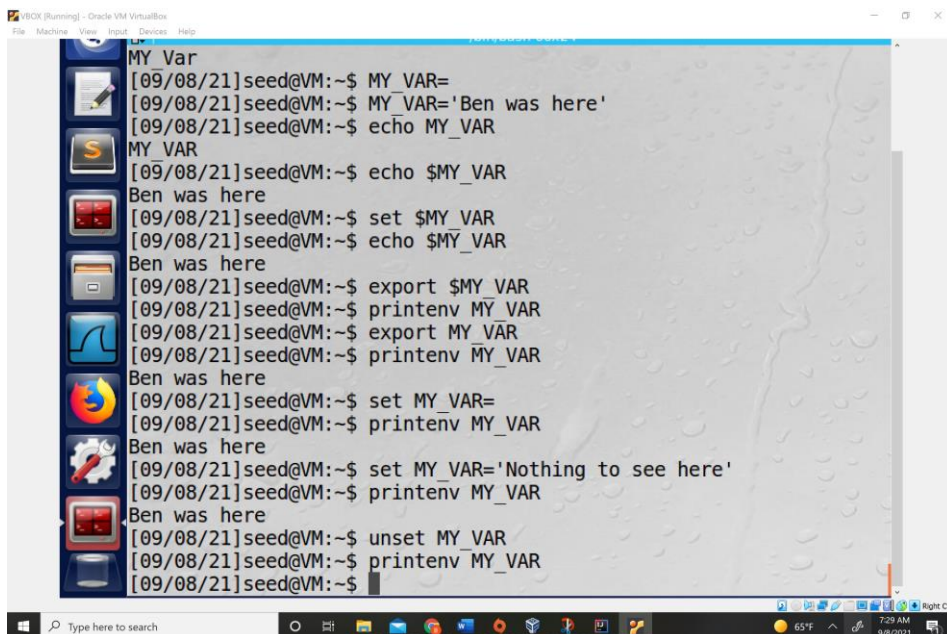
Using printenv to print environmental variables



The screenshot shows a terminal window titled "/bin/bash" with a prompt "[09/08/21]seed@VM:~\$". The command "printenv" has been executed, displaying a list of environment variables. The variables include XDG_VTNR, ORBIT_SOCKETDIR, XDG_SESSION_ID, XDG_GREETER_DATA_DIR, TERMINATOR_UUID, IBUS_DISABLE_SNOOPER, CLUTTER_IM_MODULE, ANDROID_HOME, GPG_AGENT_INFO, TERM, SHELL, DERBY_HOME, QT_LINUX_ACCESSIBILITY_ALWAYS_ON, LD_PRELOAD, WINDOWID, UPSTART_SESSION, and GNOME_KEYRING_CONTROL. The terminal window is running inside an Oracle VM VirtualBox, with the host OS being Windows 10.

```
/bin/bash
[09/08/21]seed@VM:~$ printenv
XDG_VTNR=7
ORBIT_SOCKETDIR=/tmp/orbit-seed
XDG_SESSION_ID=c1
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed
TERMINATOR_UUID=urn:uuid:2e4ca166-3967-43a6-807e-e87fef460b06
IBUS_DISABLE_SNOOPER=1
CLUTTER_IM_MODULE=xim
ANDROID_HOME=/home/seed/android/android-sdk-linux
GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1
TERM=xterm
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.1.64.0
:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib
/boost/libboost_system.so.1.64.0
WINDOWID=35651588
UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/116
7
GNOME_KEYRING_CONTROL=
```

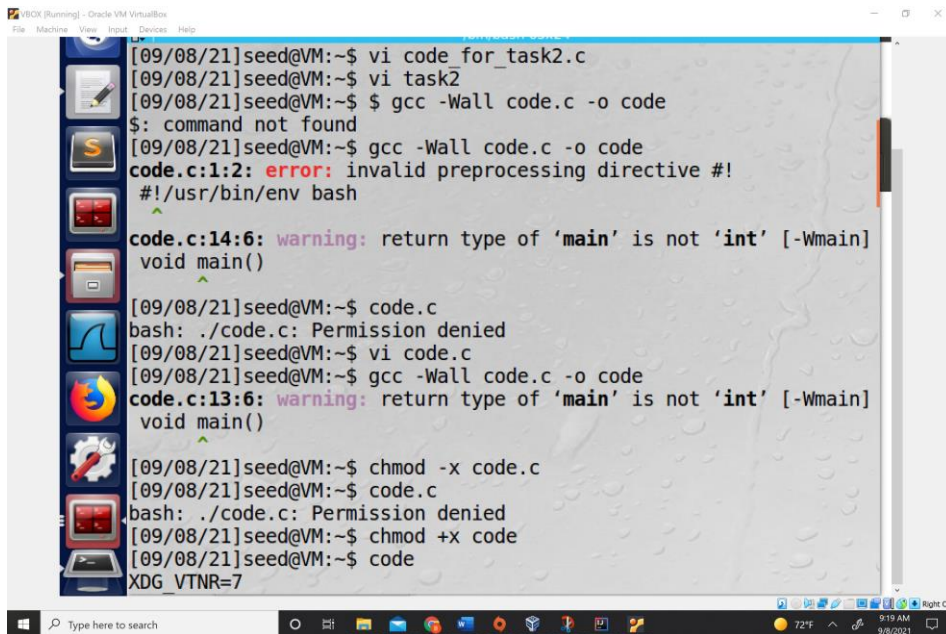
Using Export and Unset to set and unset an Environmental Variable MY_VAR



```
MY_Var
[09/08/21]seed@VM:~$ MY_VAR=
[09/08/21]seed@VM:~$ MY_VAR='Ben was here'
[09/08/21]seed@VM:~$ echo MY_VAR
MY_Var
[09/08/21]seed@VM:~$ echo $MY_VAR
Ben was here
[09/08/21]seed@VM:~$ set $MY_VAR
[09/08/21]seed@VM:~$ echo $MY_VAR
Ben was here
[09/08/21]seed@VM:~$ export $MY_VAR
[09/08/21]seed@VM:~$ printenv MY_VAR
[09/08/21]seed@VM:~$ export MY_VAR
[09/08/21]seed@VM:~$ printenv MY_VAR
Ben was here
[09/08/21]seed@VM:~$ set MY_VAR=
[09/08/21]seed@VM:~$ printenv MY_VAR
Ben was here
[09/08/21]seed@VM:~$ set MY_VAR='Nothing to see here'
[09/08/21]seed@VM:~$ printenv MY_VAR
Ben was here
[09/08/21]seed@VM:~$ unset MY_VAR
[09/08/21]seed@VM:~$ printenv MY_VAR
[09/08/21]seed@VM:~$
```

Lab 2.2 Passing Environment Variables from Parent Process to Child Process

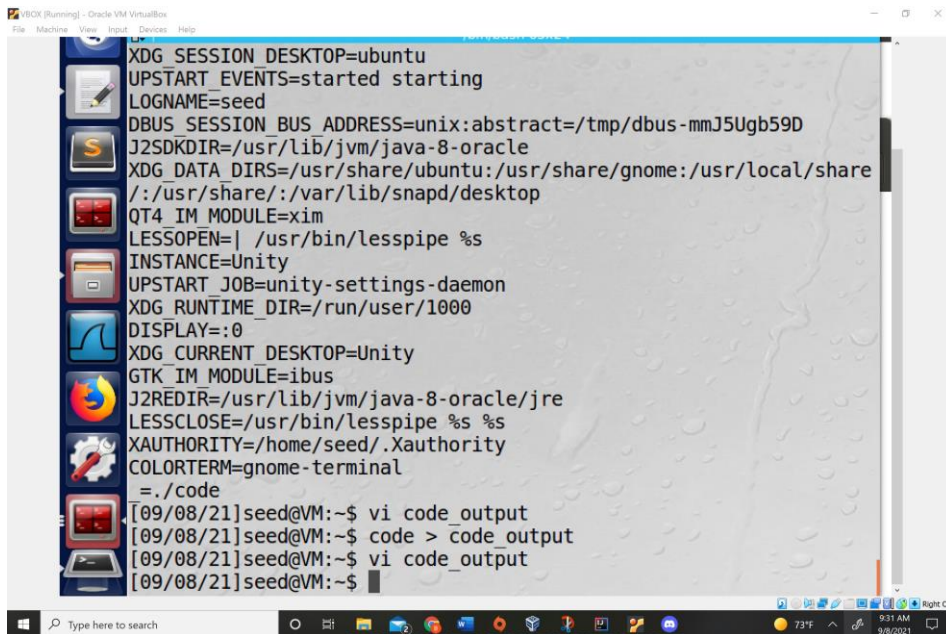
1. Run code



```
[09/08/21]seed@VM:~$ vi code_for_task2.c
[09/08/21]seed@VM:~$ vi task2
[09/08/21]seed@VM:~$ gcc -Wall code.c -o code
$: command not found
[09/08/21]seed@VM:~$ gcc -Wall code.c -o code
code.c:1:2: error: invalid preprocessing directive #!
#!/usr/bin/env bash
code.c:14:6: warning: return type of 'main' is not 'int' [-Wmain]
void main()
[09/08/21]seed@VM:~$ code.c
bash: ./code.c: Permission denied
[09/08/21]seed@VM:~$ vi code.c
[09/08/21]seed@VM:~$ gcc -Wall code.c -o code
code.c:13:6: warning: return type of 'main' is not 'int' [-Wmain]
void main()
[09/08/21]seed@VM:~$ chmod -x code.c
[09/08/21]seed@VM:~$ code.c
bash: ./code.c: Permission denied
[09/08/21]seed@VM:~$ chmod +x code
[09/08/21]seed@VM:~$ code
XDG_VTNR=7
```

Output

Saved to file



```
XDG_SESSION_DESKTOP=ubuntu
UPSTART_EVENTS=started starting
LOGNAME=seed
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
J2SDKDIR=/usr/lib/jvm/java-8-oracle
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share
:/usr/share/:/var/lib/snapd/desktop
QT4_IM_MODULE=xim
LESSOPEN=| /usr/bin/lesspipe %s
INSTANCE=Unity
UPSTART_JOB=unity-settings-daemon
XDG_RUNTIME_DIR=/run/user/1000
DISPLAY=:0
XDG_CURRENT_DESKTOP=Unity
GTK_IM_MODULE=ibus
J2REDIR=/usr/lib/jvm/java-8-oracle/jre
LESSCLOSE=/usr/bin/lesspipe %s %s
XAUTHORITY=/home/seed/.Xauthority
COLORTERM=gnome-terminal
= ./code
[09/08/21]seed@VM:~$ vi code_output
[09/08/21]seed@VM:~$ code > code_output
[09/08/21]seed@VM:~$ vi code_output
[09/08/21]seed@VM:~$
```

Output

XDG_VTNR=7

ORBIT_SOCKETDIR=/tmp/orbit-seed

XDG_SESSION_ID=c1

XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed

TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2

IBUS_DISABLE_SNOOPER=1

CLUTTER_IM_MODULE=xim

ANDROID_HOME=/home/seed/android/android-sdk-linux

GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1

TERM=xterm

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.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0

WINDOWID=71303172

UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167

GNOME_KEYRING_CONTROL=

GTK_MODULES=gail:atk-bridge:unity-gtk-module

USER=seed

LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33:01:cd=40;33:01:or=40;31:01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:

QT_ACCESSIBILITY=1

LD_LIBRARY_PATH=/home/seed/source/boost_1_64_0/stage/lib:/home/seed/source/boost_1_64_0/stage/lib:

XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0

XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0

SSH_AUTH_SOCK=/run/user/1000/keyring/ssh

DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path

XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/usr/share/upstart/xdg:/etc/xdg

DESKTOP_SESSION=ubuntu

PATH=/home/seed/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/usr/lib/jvm/java-8-oracle/bin:/usr/lib/jvm/java-8-oracle/db/bin:/usr/lib/jvm/java-8-oracle/jre/bin:/home/seed/android/android-sdk-linux/tools:/home/seed/android/android-sdk-linux/platform-tools:/home/seed/android/android-ndk/android-ndk-r8d:/home/seed/.local/bin

QT_IM_MODULE=ibus
QT_QPA_PLATFORMTHEME=appmenu-qt5
XDG_SESSION_TYPE=x11
PWD=/home/seed
JOB=gnome-session
XMODIFIERS=@im=ibus
JAVA_HOME=/usr/lib/jvm/java-8-oracle
GNOME_KEYRING_PID=
LANG=en_US.UTF-8
GDM_LANG=en_US
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
COMPIZ_CONFIG_PROFILE=ubuntu
IM_CONFIG_PHASE=1
GDMSESSION=ubuntu
SESSIONTYPE=gnome-session
GTK2_MODULES=overlay-scrollbar
SHLVL=1
HOME=/home/seed
XDG_SEAT=seat0
LANGUAGE=en_US
LIBGL_ALWAYS_SOFTWARE=1
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
UPSTART_INSTANCE=
XDG_SESSION_DESKTOP=ubuntu
UPSTART_EVENTS=started starting
LOGNAME=seed
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
J2SDKDIR=/usr/lib/jvm/java-8-oracle

XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop

QT4_IM_MODULE=xim

LESSOPEN=| /usr/bin/lesspipe %s

INSTANCE=Unity

UPSTART_JOB=unity-settings-daemon

XDG_RUNTIME_DIR=/run/user/1000

DISPLAY=:0

XDG_CURRENT_DESKTOP=Unity

GTK_IM_MODULE=ibus

J2REDIR=/usr/lib/jvm/java-8-oracle/jre

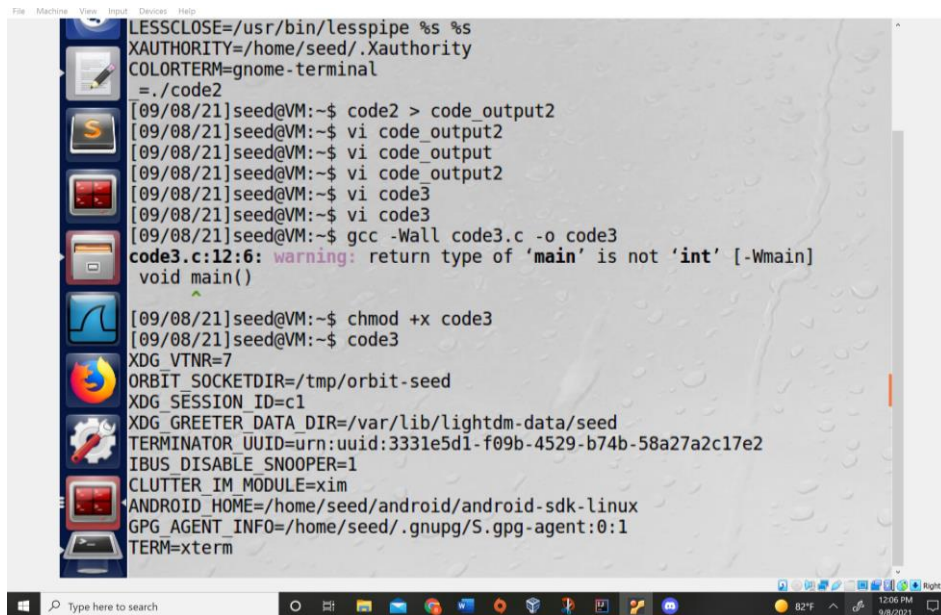
LESSCLOSE=/usr/bin/lesspipe %s %s

XAUTHORITY=/home/seed/.Xauthority

COLORTERM=gnome-terminal

_=./code

Creating code



```
File Machine View Input Devices Help
LESSCLOSE=/usr/bin/lesspipe %s %s
XAUTHORITY=/home/seed/.Xauthority
COLORTERM=gnome-terminal
= ./code2
[09/08/21]seed@VM:~$ code2 > code_output2
[09/08/21]seed@VM:~$ vi code_output2
[09/08/21]seed@VM:~$ vi code_output
[09/08/21]seed@VM:~$ vi code_output2
[09/08/21]seed@VM:~$ vi code3
[09/08/21]seed@VM:~$ vi code3
[09/08/21]seed@VM:~$ gcc -Wall code3.c -o code3
code3.c:12:6: warning: return type of 'main' is not 'int' [-Wmain]
void main()
[09/08/21]seed@VM:~$ chmod +x code3
[09/08/21]seed@VM:~$ code3
XDG_VTNR=7
ORBIT_SOCKETDIR=/tmp/orbit-seed
XDG_SESSION_ID=c1
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed
TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2
IBUS_DISABLE_SNOOPER=1
CLUTTER_IM_MODULE=xim
ANDROID_HOME=/home/seed/android/android-sdk-linux
GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1
TERM=xterm
```

XDG_VTNR=7

ORBIT_SOCKETDIR=/tmp/orbit-seed

XDG_SESSION_ID=c1

XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed

TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2

IBUS_DISABLE_SNOOPER=1

CLUTTER_IM_MODULE=xim

ANDROID_HOME=/home/seed/android/android-sdk-linux

GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1

TERM=xterm

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.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0

WINDOWID=71303172

UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167

GNOME_KEYRING_CONTROL=

GTK_MODULES=gail:atk-bridge:unity-gtk-module

USER=seed

LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33:01:cd=40;33:01:or=40;31:01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:

QT_ACCESSIBILITY=1

LD_LIBRARY_PATH=/home/seed/source/boost_1_64_0/stage/lib:/home/seed/source/boost_1_64_0/stage/lib:

XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0

XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0

SSH_AUTH_SOCK=/run/user/1000/keyring/ssh

DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path

XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/usr/share/upstart/xdg:/etc/xdg

DESKTOP_SESSION=ubuntu

PATH=/home/seed/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/usr/lib/jvm/java-8-oracle/bin:/usr/lib/jvm/java-8-oracle/db/bin:/usr/lib/jvm/java-8-oracle/jre/bin:/home/seed/android/android-sdk-linux/tools:/home/seed/android/android-sdk-linux/platform-tools:/home/seed/android/android-ndk/android-ndk-r8d:/home/seed/.local/bin

QT_IM_MODULE=ibus
QT_QPA_PLATFORMTHEME=appmenu-qt5
XDG_SESSION_TYPE=x11
PWD=/home/seed
JOB=gnome-session
XMODIFIERS=@im=ibus
JAVA_HOME=/usr/lib/jvm/java-8-oracle
GNOME_KEYRING_PID=
LANG=en_US.UTF-8
GDM_LANG=en_US
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
COMPIZ_CONFIG_PROFILE=ubuntu
IM_CONFIG_PHASE=1
GDMSESSION=ubuntu
SESSIONTYPE=gnome-session
GTK2_MODULES=overlay-scrollbar
SHLVL=1
HOME=/home/seed
XDG_SEAT=seat0
LANGUAGE=en_US
LIBGL_ALWAYS_SOFTWARE=1
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
UPSTART_INSTANCE=
XDG_SESSION_DESKTOP=ubuntu
UPSTART_EVENTS=started starting
LOGNAME=seed
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
J2SDKDIR=/usr/lib/jvm/java-8-oracle

XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop

QT4_IM_MODULE=xim

LESSOPEN=| /usr/bin/lesspipe %s

INSTANCE=Unity

UPSTART_JOB=unity-settings-daemon

XDG_RUNTIME_DIR=/run/user/1000

DISPLAY=:0

XDG_CURRENT_DESKTOP=Unity

GTK_IM_MODULE=ibus

J2REDIR=/usr/lib/jvm/java-8-oracle/jre

LESSCLOSE=/usr/bin/lesspipe %s %s

XAUTHORITY=/home/seed/.Xauthority

COLORTERM=gnome-terminal

_=./code3

Output for diff

[09/08/21]seed@VM:~\$ diff code3_output code_output

71c71

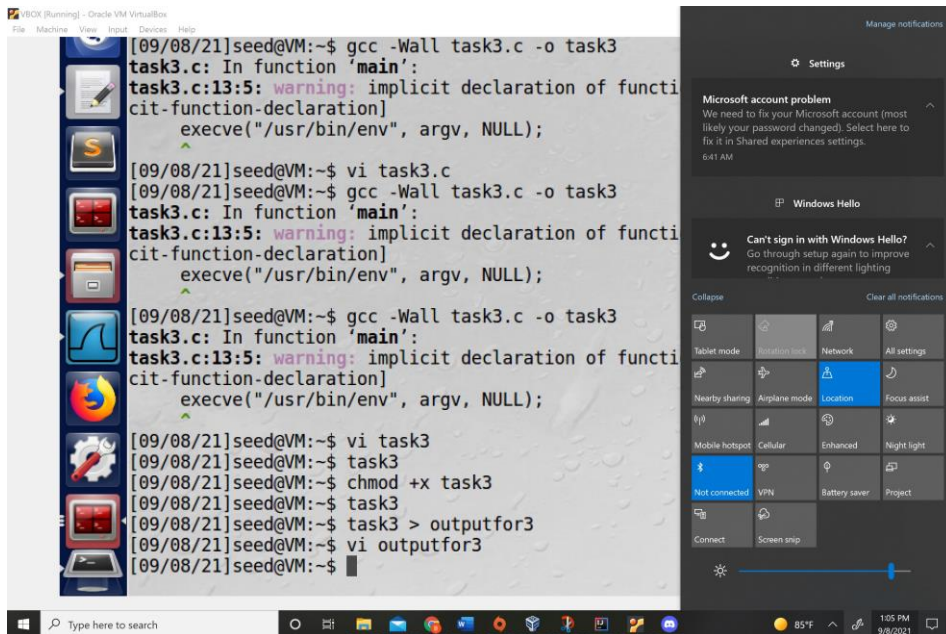
< _=./code3

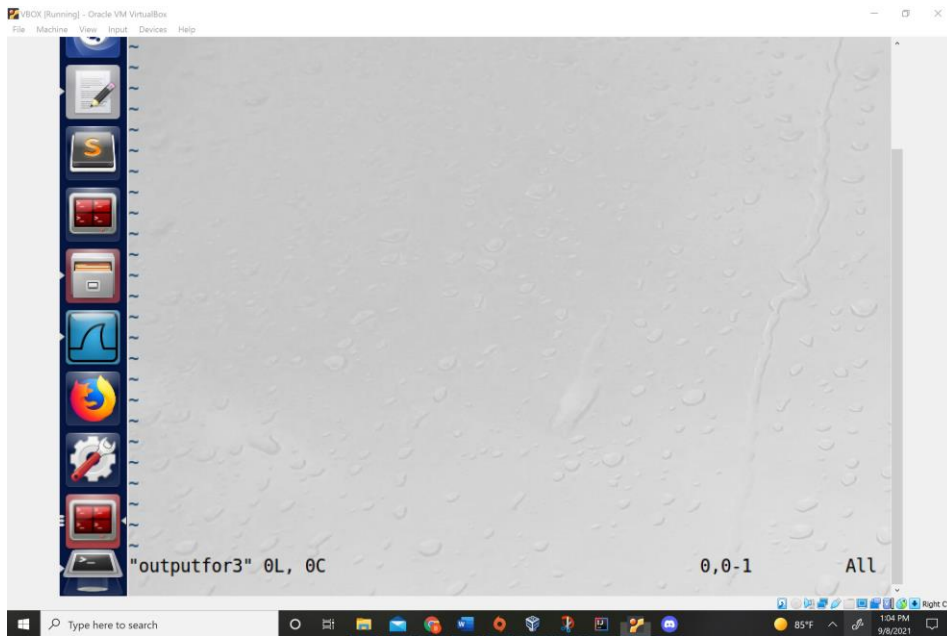
> _=./code

```
> LOGNAME=seed
> DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
> J2SDKDIR=/usr/lib/jvm/java-8-oracle
> XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr
/share:/var/lib/snapd/desktop
> QT4_IM_MODULE=xim
> LESSOPEN=| /usr/bin/lesspipe %s
> INSTANCE=Unity
> UPSTART_JOB=unity-settings-daemon
> XDG_RUNTIME_DIR=/run/user/1000
> DISPLAY=:0
> XDG_CURRENT_DESKTOP=Unity
> GTK_IM_MODULE=ibus
> J2REDIR=/usr/lib/jvm/java-8-oracle/jre
> LESSCLOSE=/usr/bin/lesspipe %s %s
> XAUTHORITY=/home/seed/.Xauthority
> COLORTERM=gnome-terminal
> =./code2
[09/08/21]seed@VM:~$ diff code3_output code_output
71c71
< =./code3
---
> =./code
[09/08/21]seed@VM:~$ ^C
[09/08/21]seed@VM:~$ ^C
[09/08/21]seed@VM:~$
```

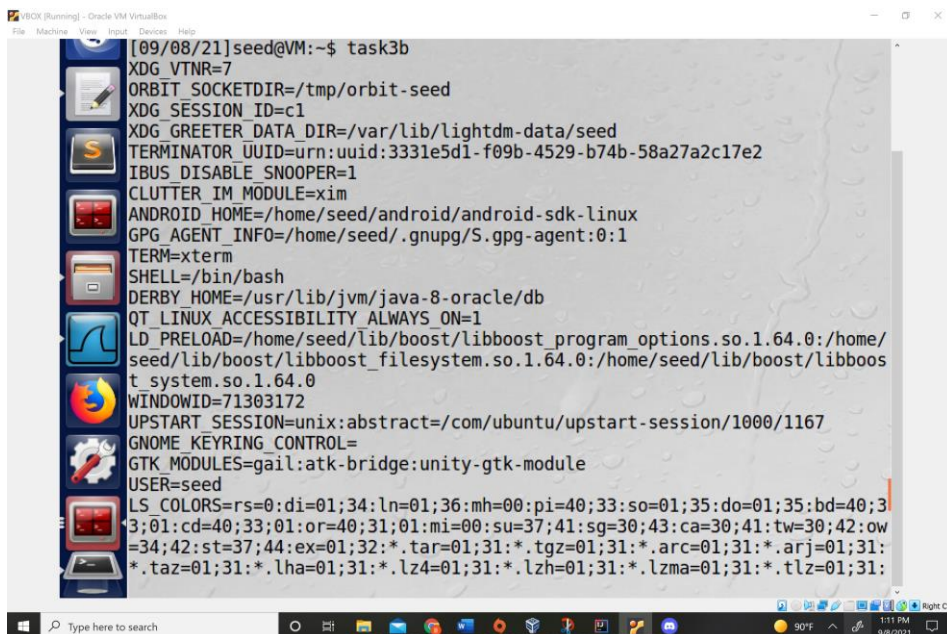
Task 3

Compiled but nothing was printed to console





Task 3b program seems to print Environmental Variables



```
[09/08/21]seed@VM:~$ task3b
XDG_VTNR=7
ORBIT_SOCKETDIR=/tmp/orbit-seed
XDG_SESSION_ID=c1
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed
TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2
IBUS_DISABLE_SNOOPER=1
CLUTTER_IM_MODULE=xim
ANDROID_HOME=/home/seed/android/android-sdk-linux
GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1
TERM=xterm
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.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0
WINDOWID=71303172
UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167
GNOME_KEYRING_CONTROL=
GTK_MODULES=gail:atk-bridge:unity-gtk-module
USER=seed
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:
```

Output

XDG_VTNR=7

ORBIT_SOCKETDIR=/tmp/orbit-seed

XDG_SESSION_ID=c1

XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed

TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2

IBUS_DISABLE_SNOOPER=1

CLUTTER_IM_MODULE=xim

ANDROID_HOME=/home/seed/android/android-sdk-linux

GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1

TERM=xterm

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.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0

WINDOWID=71303172

UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167

GNOME_KEYRING_CONTROL=

GTK_MODULES=gail:atk-bridge:unity-gtk-module

USER=seed

LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33:01:cd=40;33:01:or=40;31:01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:

QT_ACCESSIBILITY=1

LD_LIBRARY_PATH=/home/seed/source/boost_1_64_0/stage/lib:/home/seed/source/boost_1_64_0/stage/lib:

XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0

XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0

SSH_AUTH_SOCK=/run/user/1000/keyring/ssh

DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path

XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/usr/share/upstart/xdg:/etc/xdg

DESKTOP_SESSION=ubuntu

PATH=/home/seed/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/usr/lib/jvm/java-8-oracle/bin:/usr/lib/jvm/java-8-oracle/db/bin:/usr/lib/jvm/java-8-oracle/jre/bin:/home/seed/android/android-sdk-linux/tools:/home/seed/android/android-sdk-linux/platform-tools:/home/seed/android/android-ndk/android-ndk-r8d:/home/seed/.local/bin

QT_IM_MODULE=ibus
QT_QPA_PLATFORMTHEME=appmenu-qt5
XDG_SESSION_TYPE=x11
PWD=/home/seed
JOB=gnome-session
XMODIFIERS=@im=ibus
JAVA_HOME=/usr/lib/jvm/java-8-oracle
GNOME_KEYRING_PID=
LANG=en_US.UTF-8
GDM_LANG=en_US
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
COMPIZ_CONFIG_PROFILE=ubuntu
IM_CONFIG_PHASE=1
GDMSESSION=ubuntu
SESSIONTYPE=gnome-session
GTK2_MODULES=overlay-scrollbar
SHLVL=1
HOME=/home/seed
XDG_SEAT=seat0
LANGUAGE=en_US
LIBGL_ALWAYS_SOFTWARE=1
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
UPSTART_INSTANCE=
XDG_SESSION_DESKTOP=ubuntu
UPSTART_EVENTS=started starting
LOGNAME=seed
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
J2SDKDIR=/usr/lib/jvm/java-8-oracle

XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop

QT4_IM_MODULE=xim

LESSOPEN=| /usr/bin/lesspipe %s

INSTANCE=Unity

UPSTART_JOB=unity-settings-daemon

XDG_RUNTIME_DIR=/run/user/1000

DISPLAY=:0

XDG_CURRENT_DESKTOP=Unity

GTK_IM_MODULE=ibus

J2REDIR=/usr/lib/jvm/java-8-oracle/jre

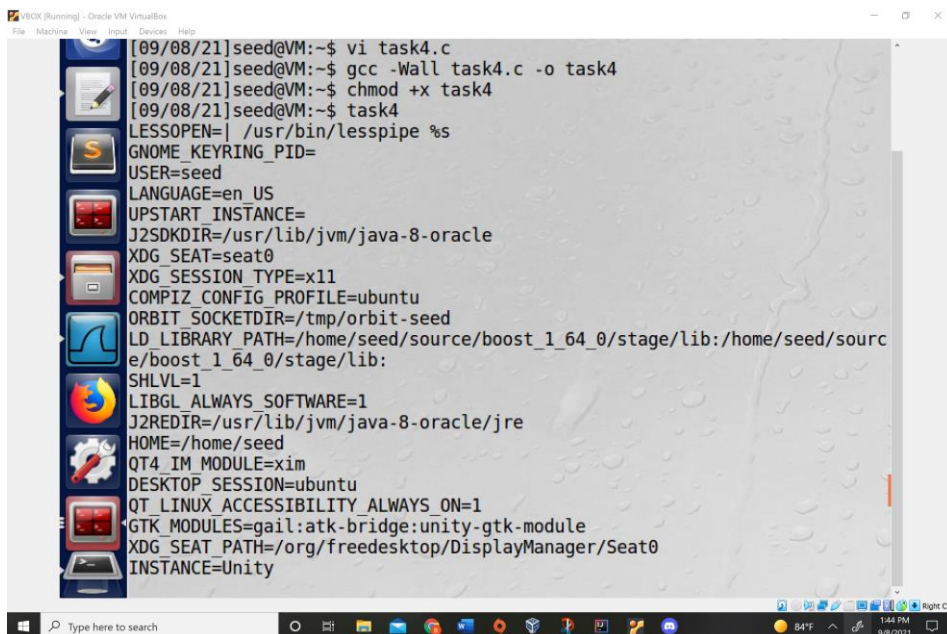
LESSCLOSE=/usr/bin/lesspipe %s %s

XAUTHORITY=/home/seed/.Xauthority

COLORTERM=gnome-terminal

_=./task3b

Task 4: Environment Variables and system()



```
[09/08/21]seed@VM:~$ vi task4.c
[09/08/21]seed@VM:~$ gcc -Wall task4.c -o task4
[09/08/21]seed@VM:~$ chmod +x task4
[09/08/21]seed@VM:~$ task4
LESSOPEN=| /usr/bin/lesspipe %s
GNOME_KEYRING_PID=
USER=seed
LANGUAGE=en_US
UPSTART_INSTANCE=
J2SDKDIR=/usr/lib/jvm/java-8-oracle
XDG_SEAT=seat0
XDG_SESSION_TYPE=x11
COMPIZ_CONFIG_PROFILE=ubuntu
ORBIT_SOCKETDIR=/tmp/orbit-seed
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
QT4_IM_MODULE=xim
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=Unity
```

Expanded Text

[09/08/21]seed@VM:~\$ task4

LESSOPEN=| /usr/bin/lesspipe %s

GNOME_KEYRING_PID=

USER=seed

LANGUAGE=en_US

UPSTART_INSTANCE=

J2SDKDIR=/usr/lib/jvm/java-8-oracle

XDG_SEAT=seat0

XDG_SESSION_TYPE=x11

COMPIZ_CONFIG_PROFILE=ubuntu

ORBIT_SOCKETDIR=/tmp/orbit-seed

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
QT4_IM_MODULE=xim
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=Unity
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
COLORTERM=gnome-terminal
GNOME_KEYRING_CONTROL=
QT_QPA_PLATFORMTHEME=appmenu-qt5
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
IM_CONFIG_PHASE=1
SESSIONTYPE=gnome-session
UPSTART_JOB=unity-settings-daemon
LOGNAME=seed
GTK_IM_MODULE=ibus
WINDOWID=71303172
_=./task4
DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path
XDG_SESSION_ID=c1
TERM=xterm
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
GTK2_MODULES=overlay-scrollbar
PATH=/home/seed/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games::/snap/bin:/usr/lib/jvm/java-8-oracle/bin:/usr/lib/jvm/java-8-oracle/db/bin:/usr/lib/jvm/java-8-oracle/jre/bin:/home/seed/android/android-sdk-linux/tools:/home/seed/android/android-sdk-linux/platform-tools:/home/seed/android/android-ndk/android-ndk-r8d:/home/seed/.local/bin

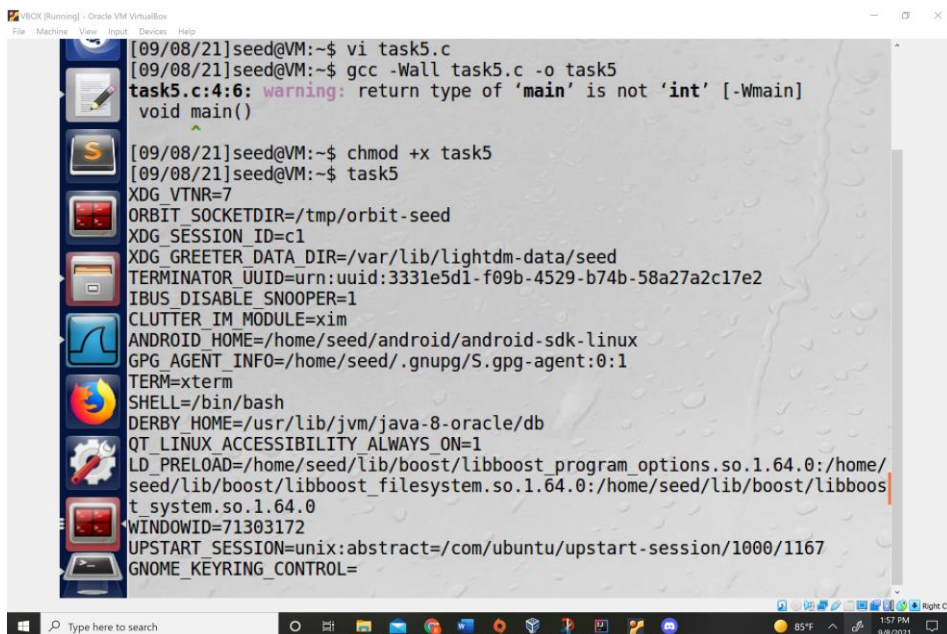
```
DBY_HOME=/usr/lib/jvm/java-8-oracle/db
GDM_LANG=en_US
XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0
XDG_RUNTIME_DIR=/run/user/1000
DISPLAY=:0
IBUS_DISABLE_SNOOPER=1
LD_PRELOAD=/home/seed/lib/boost/libboost_program_options.so.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0
LANG=en_US.UTF-8
XDG_CURRENT_DESKTOP=Unity
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:
XMODIFIERS=@im=ibus
XDG_SESSION_DESKTOP=ubuntu
XAUTHORITY=/home/seed/.Xauthority
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed
SSH_AUTH_SOCK=/run/user/1000/keyring/ssh
TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2
SHELL=/bin/bash
QT_ACCESSIBILITY=1
GDMSESSION=ubuntu
```

LESSCLOSE=/usr/bin/lesspipe %s %s
UPSTART_EVENTS=started starting
GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1
UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167
XDG_VTNR=7
QT_IM_MODULE=ibus
PWD=/home/seed
JAVA_HOME=/usr/lib/jvm/java-8-oracle
CLUTTER_IM_MODULE=xim
ANDROID_HOME=/home/seed/android/android-sdk-linux
XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/usr/share/upstart/xdg:/etc/xdg
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop
JOB=gnome-session

Task 5

Part 1 Prints Process and environmental Variables

Commented [BS1]:



```
[09/08/21]seed@VM:~$ vi task5.c
[09/08/21]seed@VM:~$ gcc -Wall task5.c -o task5
task5.c:4:6: warning: return type of 'main' is not 'int' [-Wmain]
void main()
      ^
[09/08/21]seed@VM:~$ chmod +x task5
[09/08/21]seed@VM:~$ task5
XDG_VTNR=7
ORBIT_SOCKETDIR=/tmp/orbit-seed
XDG_SESSION_ID=c1
XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed
TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2
IBUS_DISABLE_SNOOPER=1
CLUTTER_IM_MODULE=xim
ANDROID_HOME=/home/seed/android/android-sdk-linux
GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1
TERM=xterm
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.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0
WINDOWID=71303172
UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167
GNOME_KEYRING_CONTROL=
```

Output

XDG_VTNR=7

ORBIT_SOCKETDIR=/tmp/orbit-seed

XDG_SESSION_ID=c1

XDG_GREETER_DATA_DIR=/var/lib/lightdm-data/seed

TERMINATOR_UUID=urn:uuid:3331e5d1-f09b-4529-b74b-58a27a2c17e2

IBUS_DISABLE_SNOOPER=1

CLUTTER_IM_MODULE=xim

ANDROID_HOME=/home/seed/android/android-sdk-linux

GPG_AGENT_INFO=/home/seed/.gnupg/S.gpg-agent:0:1

TERM=xterm

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.1.64.0:/home/seed/lib/boost/libboost_filesystem.so.1.64.0:/home/seed/lib/boost/libboost_system.so.1.64.0

WINDOWID=71303172

UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167

GNOME_KEYRING_CONTROL=

GTK_MODULES=gail:atk-bridge:unity-gtk-module

USER=seed

LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33:01:cd=40;33:01:or=40;31:01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:

QT_ACCESSIBILITY=1

LD_LIBRARY_PATH=/home/seed/source/boost_1_64_0/stage/lib:/home/seed/source/boost_1_64_0/stage/lib:

XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0

XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0

SSH_AUTH_SOCK=/run/user/1000/keyring/ssh

DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path

XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/usr/share/upstart/xdg:/etc/xdg

DESKTOP_SESSION=ubuntu

PATH=/home/seed/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/usr/lib/jvm/java-8-oracle/bin:/usr/lib/jvm/java-8-oracle/db/bin:/usr/lib/jvm/java-8-oracle/jre/bin:/home/seed/android/android-sdk-linux/tools:/home/seed/android/android-sdk-linux/platform-tools:/home/seed/android/android-ndk/android-ndk-r8d:/home/seed/.local/bin

QT_IM_MODULE=ibus
QT_QPA_PLATFORMTHEME=appmenu-qt5
XDG_SESSION_TYPE=x11
PWD=/home/seed
JOB=gnome-session
XMODIFIERS=@im=ibus
JAVA_HOME=/usr/lib/jvm/java-8-oracle
GNOME_KEYRING_PID=
LANG=en_US.UTF-8
GDM_LANG=en_US
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
COMPIZ_CONFIG_PROFILE=ubuntu
IM_CONFIG_PHASE=1
GDMSESSION=ubuntu
SESSIONTYPE=gnome-session
GTK2_MODULES=overlay-scrollbar
SHLVL=1
HOME=/home/seed
XDG_SEAT=seat0
LANGUAGE=en_US
LIBGL_ALWAYS_SOFTWARE=1
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
UPSTART_INSTANCE=
XDG_SESSION_DESKTOP=ubuntu
UPSTART_EVENTS=started starting
LOGNAME=seed
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
J2SDKDIR=/usr/lib/jvm/java-8-oracle

XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/desktop

QT4_IM_MODULE=xim

LESSOPEN=| /usr/bin/lesspipe %s

INSTANCE=Unity

UPSTART_JOB=unity-settings-daemon

XDG_RUNTIME_DIR=/run/user/1000

DISPLAY=:0

XDG_CURRENT_DESKTOP=Unity

GTK_IM_MODULE=ibus

J2REDIR=/usr/lib/jvm/java-8-oracle/jre

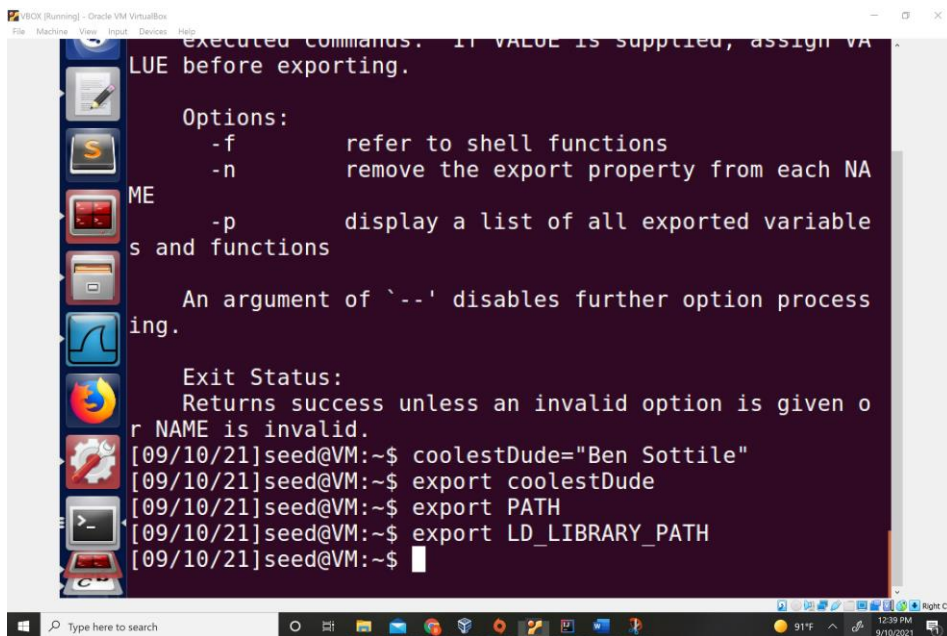
LESSCLOSE=/usr/bin/lesspipe %s %s

XAUTHORITY=/home/seed/.Xauthority

COLORTERM=gnome-terminal

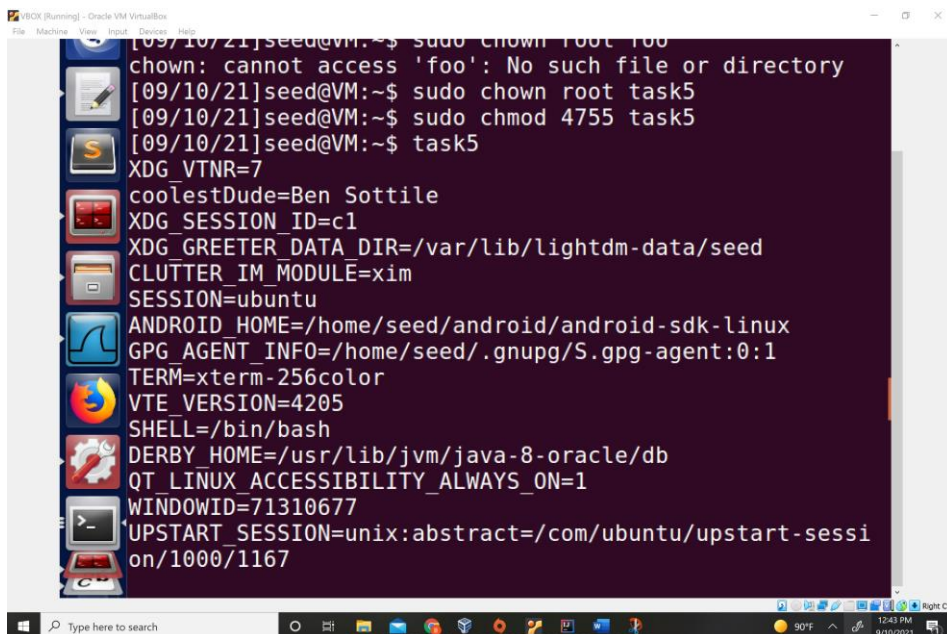
_=./task5

Part2 Set PATH,LD_LIBRARY_PATH,variableOfChoice (coolestDude) for export



```
executed commands. If VALUE is supplied, assign VA  
LUE before exporting.  
  
Options:  
-f      refer to shell functions  
-n      remove the export property from each NA  
ME  
-p      display a list of all exported variable  
s and functions  
  
An argument of '--' disables further option process  
ing.  
  
Exit Status:  
Returns success unless an invalid option is given o  
r NAME is invalid.  
[09/10/21]seed@VM:~$ coolestDude="Ben Sottile"  
[09/10/21]seed@VM:~$ export coolestDude  
[09/10/21]seed@VM:~$ export PATH  
[09/10/21]seed@VM:~$ export LD_LIBRARY_PATH  
[09/10/21]seed@VM:~$
```

Make program Set UID Program and Run



The screenshot shows a terminal window titled "VBOX (Running) - Oracle VM VirtualBox". The terminal output is as follows:

```
[09/10/21]seed@VM:~$ sudo chown root root
chown: cannot access 'foo': No such file or directory
[09/10/21]seed@VM:~$ sudo chown root task5
[09/10/21]seed@VM:~$ sudo chmod 4755 task5
[09/10/21]seed@VM:~$ task5
XDG_VTNR=7
coolestDude=Ben Sottile
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
SHELL=/bin/bash
DERBY_HOME=/usr/lib/jvm/java-8-oracle/db
QT_LINUX_ACCESSIBILITY_ALWAYS_ON=1
WINDOWID=71310677
UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167
```

coolestDude made it to the program.

Code Output Full

```
[09/10/21]seed@VM:~$ task5
```

```
XDG_VTNR=7
```

```
coolestDude=Ben Sottile
```

```
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
```

```
SHELL=/bin/bash
```

DERBY_HOME=/usr/lib/jvm/java-8-oracle/db

QT_LINUX_ACCESSIBILITY_ALWAYS_ON=1

WINDOWID=71310677

UPSTART_SESSION=unix:abstract=/com/ubuntu/upstart-session/1000/1167

GNOME_KEYRING_CONTROL=

GTK_MODULES=gail:atk-bridge:unity-gtk-module

USER=seed

LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;41:sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01;31:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*.lzma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=01;31:*.Z=01;31:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;31:*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.rar=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01;31:*.cab=01;31:*.jpg=01;35:*.jpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.pgm=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=01;35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;35:*.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*.mp4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=01;35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35:*.flv=01;35:*.gl=01;35:*.dl=01;35:*.xcf=01;35:*.xwd=01;35:*.yuv=01;35:*.cgm=01;35:*.emf=01;35:*.ogv=01;35:*.ogx=01;35:*.aac=00;36:*.au=00;36:*.flac=00;36:*.m4a=00;36:*.mid=00;36:*.midi=00;36:*.mka=00;36:*.mp3=00;36:*.mpc=00;36:*.ogg=00;36:*.ra=00;36:*.wav=00;36:*.oga=00;36:*.opus=00;36:*.spx=00;36:*.xspf=00;36:

QT_ACCESSIBILITY=1

XDG_SESSION_PATH=/org/freedesktop/DisplayManager/Session0

XDG_SEAT_PATH=/org/freedesktop/DisplayManager/Seat0

SSH_AUTH_SOCK=/run/user/1000/keyring/ssh

DEFAULTS_PATH=/usr/share/gconf/ubuntu.default.path

XDG_CONFIG_DIRS=/etc/xdg/xdg-ubuntu:/usr/share/upstart/xdg:/etc/xdg

DESKTOP_SESSION=ubuntu

PATH=/home/seed/bin:/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/local/games:/snap/bin:/usr/lib/jvm/java-8-oracle/bin:/usr/lib/jvm/java-8-oracle/db/bin:/usr/lib/jvm/java-8-oracle/jre/bin:/home/seed/android/android-sdk-linux/tools:/home/seed/android/android-sdk-linux/platform-tools:/home/seed/android/android-ndk/android-ndk-r8d:/home/seed/.local/bin

QT_IM_MODULE=ibus

QT_QPA_PLATFORMTHEME=appmenu-qt5

XDG_SESSION_TYPE=x11
PWD=/home/seed
JOB=unity-settings-daemon
XMODIFIERS=@im=ibus
JAVA_HOME=/usr/lib/jvm/java-8-oracle
GNOME_KEYRING_PID=
LANG=en_US.UTF-8
GDM_LANG=en_US
MANDATORY_PATH=/usr/share/gconf/ubuntu.mandatory.path
COMPIZ_CONFIG_PROFILE=ubuntu-lowgfx
IM_CONFIG_PHASE=1
GDMSESSION=ubuntu
SESSIONTYPE=gnome-session
GTK2_MODULES=overlay-scrollbar
SHLVL=1
HOME=/home/seed
XDG_SEAT=seat0
LANGUAGE=en_US
LIBGL_ALWAYS_SOFTWARE=1
GNOME_DESKTOP_SESSION_ID=this-is-deprecated
UPSTART_INSTANCE=
UPSTART_EVENTS=xsession started
XDG_SESSION_DESKTOP=ubuntu
LOGNAME=seed
COMPIZ_BIN_PATH=/usr/bin/
DBUS_SESSION_BUS_ADDRESS=unix:abstract=/tmp/dbus-mmJ5Ugb59D
J2SDKDIR=/usr/lib/jvm/java-8-oracle
XDG_DATA_DIRS=/usr/share/ubuntu:/usr/share/gnome:/usr/local/share:/usr/share:/var/lib/snapd/de
sktop

```
QT4_IM_MODULE=xim
LESSOPEN=| /usr/bin/lesspipe %s
INSTANCE=
UPSTART_JOB=unity7
XDG_RUNTIME_DIR=/run/user/1000
DISPLAY=:0
XDG_CURRENT_DESKTOP=Unity
GTK_IM_MODULE=ibus
J2REDIR=/usr/lib/jvm/java-8-oracle/jre
LESSCLOSE=/usr/bin/lesspipe %s %s
XAUTHORITY=/home/seed/.Xauthority
_=./task5
```