

## Linux Environment Variable

1. State the command for the following.
  - a. view current environment variables

**Ans:** printenv

- b. display the PATH environment variable value

**Ans:** echo \$PATH

- c. update PATH to include the path to your home directory

**Ans:** export PATH=\$HOME:\$PATH

2. How will you make the environment changes applicable to all users? Which script is to be modified?

**Ans:** sudo nano /etc/profile

3. I have installed an application named “myapp”. After installation, if I invoke the application, it fails with error as “Command myapp not found”. How will you fix this?

**Ans:** add the location of application to the PATH

1. Create a script named “myscript” in current directory to do the following.

a) create a dir named “subdl” in current directory

b) create a file named “dircontent” with contents of the current directory

c) display the contents of the file “dircontent”

d) display the contents of a non-existing file named “unknownfile”

Ans:

```
user41@trainux01: ~/30023479/assignments/day_02
1 /bin/bash
2
3 mkdir subdl
4
5 ls > discontent
6
7 cat discontent
8
9 cat unknownfile
10
```

“myscript.sh” 10L, 76C

```
user41@trainux01: ~/30023479/assignments/day_02
Last login: Tue Oct 29 06:11:08 2024 from 10.186.132.5
user41@trainux01:~$ ls
30023479 Batch17OCT2024 479 CGBatch17OCT2024 bhimaFldr test
user41@trainux01:~$ cd 30023479/
-bash: 30023479/: Is a directory
user41@trainux01:~$ ls
30023479 Batch17OCT2024 479 CGBatch17OCT2024 bhimaFldr test
user41@trainux01:~$ cd 30023479/
user41@trainux01:~/30023479$ ls
assignments day04
user41@trainux01:~/30023479$ a
aa-enabled acpid agetty apport-collect apt-ftparchive as automake-1.15
aa-exec acpidbg alert apport-unpack apt-get at automat-visualize3
aa-remove-unknown add-apt-repository alias apropos apt-key atd autoreconf
aa-status add-shell apm available apt apt-mark atq autoscan
accessdb addgnupghome apparmor_parser apt-add-repository apt-sortpkgs atrm autoupdate
aclocal addgroup apparmor_status apt-cache ar autoconf
aclocal-1.15 addpart applygnupgdefaults apt-cdrom arch autoheader
acpi_available add2line apport-bug apt-config arp automte
acpi_listen adduser apport-cli apt-extracttemplates arpd automake
user41@trainux01:~/30023479$ cd assignments/
user41@trainux01:~/30023479/assignments$ ls
dl
user41@trainux01:~/30023479/assignments$ mkdir day_02
user41@trainux01:~/30023479/assignments$ cd day_02/
user41@trainux01:~/30023479/assignments/day_02$ vi myscript
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ rm myscript
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
-bash: ./myscript.sh: Permission denied
user41@trainux01:~/30023479/assignments/day_02$ chmod +x myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
discontent
myscript.sh
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$
```

## 2. Run the script and validate the output in following cases

### a) Redirect only the stdout to an o/p file named stdout.txt

```
user41@trainux01: ~/30023479/assignments/day_02
user41@trainux01:~$ ls
30023479 Batch17Oct2024 479 CGBatch17Oct2024 bhimaflr test
user41@trainux01:~$ cd 30023479/
user41@trainux01:~/30023479$ ls
assignments day04
user41@trainux01:~/30023479$ a
aa-enabled acpid agetty apport-collect apt-ftparchive as automake-1.15
aa-excc acpidbg alert apport-unpack apt-get at automat-visualize3
aa-remove-unknown add-apt-repository alias apropos apt-key atd autoreconf
aa-status add-shell apm_available apt apt-mark atq autoscan
accessdb addgnupghome apparmor_parser apt-add-repository apt-sortpkgs atrm autotconf
aclocal addgroup apparmor_status apt-cache ar autoconf autoheader awk
aclocal-1.15 addpart applygnupgdefaults apt-cdrom arch automake
acpi_available addr2line apport-bug apt-config arp autom4te
acpi_listen adduser apport-cli apt-extracttemplates arpd automake
user41@trainux01:~/30023479$ cd assignments/
user41@trainux01:~/30023479/assignments$ ls
d1
user41@trainux01:~/30023479/assignments$ mkdir day_02
user41@trainux01:~/30023479/assignments$ cd day_02/
user41@trainux01:~/30023479/assignments/day_02$ vi myscript
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ rm myscript
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
-bash: ./myscript.sh: Permission denied
user41@trainux01:~/30023479/assignments/day_02$ chmod +x myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
discontent
myscript.sh
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdout.txt
mkdir: cannot create directory 'subdl': File exists
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent myscript.sh stdout.txt subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdout.txt
user41@trainux01:~/30023479/assignments/day_02$
```

```
user41@trainux01: ~/30023479/assignments/day_02
1 discontent
2 myscript.sh
3 stdout.txt
4 subdl

"stdout.txt" 4L, 40C
1,1 All
```

b) Redirect only the stderr to an o/p file named stderr.txt

```
user41@trainux01: ~/30023479/assignments/day_02
aa-remove-unknown  add-apt-repository  alias  apropos  apt-key  atd  autoreconf
aa-status          add-shell           apm_available  apt       apt-mark  atq  autoscan
accessdb           addnugphome         apparmor_parser  apt-add-repository  apt-sortpkgs  atrm  autoupdate
aclocal            addgroup            apparmor_status  apt-cache  ar        autoconf
aclocal-1.15       addpart             applynugpgdefaults  apt-cdrom  arch      autoheader
acpi_available     add2line            apport-bug       apt-config  arp        autom4te
acpi_listen        adduser             apport-cgi       apt-extracttemplates  arpd        automake
user41@trainux01:~/30023479$ cd assignments/
user41@trainux01:~/30023479/assignments$ ls
dl
user41@trainux01:~/30023479/assignments$ mkdir day_02
user41@trainux01:~/30023479/assignments$ cd day_02/
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ rm myscript
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
-bash: ./myscript.sh: Permission denied
user41@trainux01:~/30023479/assignments/day_02$ chmod +x myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
discontent
myscript.sh
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdout.txt
mkdir: cannot create directory 'subdl': File exists
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent  myscript.sh  stdout.txt  subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdout.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript 2.sh > stderr.txt
-bash: ./myscript: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh 2> stderr.txt
discontent
myscript.sh
stderr.txt
stdout.txt
subdl
user41@trainux01:~/30023479/assignments/day_02$
```

```
user41@trainux01: ~/30023479/assignments/day_02
1 mkdir: cannot create directory 'subdl': File exists
2 cat: unknownfile: No such file or directory

"stderr.txt" 2L, 100C
1,1 All
```

c) Redirect both stdout and stderr to an o/p file named stdall.txt

```
user41@trainux01: ~/30023479/assignments/day_02
a2local-1.15      addpart      applygnupgdefaults  apt-cdrom      arch          autoheader
acpi_available    addr2line    apport-bug         apt-config     arp           automate
acpi_listen       adduser      apport-cgi         apt-extracttemplates  arpd          automake
user41@trainux01:~/30023479$ cd assignments/
user41@trainux01:~/30023479/assignments$ ls
dl
user41@trainux01:~/30023479/assignments$ mkdir day_02
user41@trainux01:~/30023479/assignments$ cd day_02/
user41@trainux01:~/30023479/assignments/day_02$ vi myscript
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript
myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ rm myscript
user41@trainux01:~/30023479/assignments/day_02$ ls
myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
-bash: ./myscript.sh: permission denied
user41@trainux01:~/30023479/assignments/day_02$ chmod +x myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh
discontent
myscript.sh
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdout.txt
mkdir: cannot create directory 'subdl': File exists
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent  myscript.sh  stdout.txt  subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdout.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stderr.txt
-bash: ./myscript.sh: permission denied
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh 2> stderr.txt
discontent
myscript.sh
stderr.txt
stdout.txt
subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stderr.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdall.txt 2>&1
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent  myscript.sh  stdall.txt  stderr.txt  stdout.txt  subdl
user41@trainux01:~/30023479/assignments/day_02$
```

```
user41@trainux01: ~/30023479/assignments/day_02
1 mkdir: cannot create directory 'subdl': File exists
2 discontent
3 myscript.sh
4 stdall.txt
5 stderr.txt
6 stdout.txt
7 subdl
8 cat: unknownfile: No such file or directory

"stdall.txt" 8L, 162C
1,1 All
```

- d) Display all o/p and error and also redirect both stdout and stderr to an o/p file named stdall.txt

```
user41@trainux01: ~/30023479/assignments/day_02
myscript.sh
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdout.txt
mkdir: cannot create directory 'subdl': File exists
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent myscript.sh stdout.txt subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdout.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript 2.sh > stderr.txt
-bash: ./myscript: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh 2> stderr.txt
discontent
myscript.sh
stderr.txt
stdout.txt
subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stderr.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdall.txt 2>&1
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent myscript.sh stdall.txt stderr.txt stdout.txt subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdall.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh | tee stdall.txt
mkdir: cannot create directory 'subdl': File exists
discontent
myscript.sh
stdall.txt
stderr.txt
stdout.txt
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi stdall.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh 2>&1 | tee stdall.txt
mkdir: cannot create directory 'subdl': File exists
discontent
myscript.sh
stdall.txt
stderr.txt
stdout.txt
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi stdall.txt
user41@trainux01:~/30023479/assignments/day_02$
```

```
user41@trainux01: ~/30023479/assignments/day_02
1 mkdir: cannot create directory 'subdl': File exists
2 discontent
3 myscript.sh
4 stdall.txt
5 stderr.txt
6 stdout.txt
7 subdl
8 cat: unknownfile: No such file or directory

"stdall.txt" 8L, 162C
1,1 All
```

3. Redirect the output of command below using pipe (|) to wc and get the output. ls -l

```
user41@trainux01: ~/30023479/assignments/day_02
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi myscript.sh
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdout.txt
mkdir: cannot create directory 'subdl': File exists
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent  myscript.sh  stdout.txt  subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdout.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript 2.sh > stderr.txt
-bash: ./myscript: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh 2> stderr.txt
discontent
myscript.sh
stderr.txt
stdout.txt
subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stderr.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh > stdall.txt 2>&1
user41@trainux01:~/30023479/assignments/day_02$ ls
discontent  myscript.sh  stdall.txt  stderr.txt  stdout.txt  subdl
user41@trainux01:~/30023479/assignments/day_02$ vi stdall.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh | tee stdall.txt
mkdir: cannot create directory 'subdl': File exists
discontent
myscript.sh
stdall.txt
stderr.txt
stdout.txt
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi stdall.txt
user41@trainux01:~/30023479/assignments/day_02$ ./myscript.sh 2>&1 | tee stdall.txt
mkdir: cannot create directory 'subdl': File exists
discontent
myscript.sh
stdall.txt
stderr.txt
stdout.txt
subdl
cat: unknownfile: No such file or directory
user41@trainux01:~/30023479/assignments/day_02$ vi stdall.txt
user41@trainux01:~/30023479/assignments/day_02$ ls -l | wc
 7    56   341
user41@trainux01:~/30023479/assignments/day_02$
```