Linux

Variables

Variable types

- **Shell variables** are variables that are contained exclusively within the shell in which they were set or defined. They are often used to keep track of ephemeral data, like the current working directory.

```
kpch@w:~$ TEST_VAR="Hey"
kpch@w:~$ printenv | grep TEST_VAR
kpch@w:~$
```

- **Environmental variables** are variables that are defined for the current shell and are inherited by any child shells or processes. Environmental variables are used to pass information into processes that are spawned from the shell.

```
kpch@w:~$ export TEST_VAR="Hello"
kpch@w:~$ printenv | grep TEST_VAR
TEST_VAR=Hello
kpch@w:~$
```

Example with a list of common environment variables

```
kpch@w:~$ printenv
LS_COLORS=rs=0:di=01;34:ln=01;36:mh=00:pi=40;33:so=01;35:do=01;...
HOSTTYPE=x86_64
LESSCLOSE=/usr/bin/lesspipe %s %s
LANG=C.UTF-8
OLDPWD=/home/kpch/git
WSL_INTEROP=/run/WSL/7_interop
WSL_DISTRO_NAME=Ubuntu
S_COLORS=auto
USER=kpch
PWD=/home/kpch/git/test
HOME=/home/kpch
NAME=w
TMUX=/tmp/tmux-1000/default,14,0
XDG_DATA_DIRS=/usr/local/share:/usr/share:/var/lib/snapd/desktop
TERM=screen-256color
SHELL=/bin/bash
TMUX_PANE=%1
SHLVL=1
LOGNAME=kpch
_=/usr/bin/printenv
PATH=/home/kpch/.npm-global/bin:/home/kpch/venv/bin:/home/kpch/.local/bin:...
PS1=\e[0;32m\]\u\e[m@\h\e[33m:$\e[00m
```

PATH

PATH is an environment variable that tells the shell which directories should be searched for executable files

```
kpch@w:~$ printenv | grep PATH
PATH=/home/kpch/.npm-global/bin:/home/kpch/venv/bin:/home/kpch/.local/bin:...
```

PATH depends on the following:

- Usage of sudo / su and environment-preserving options
- Interactive / non-interactive login
- Root / non-root login

HOME and SHELL

HOME contains the path to the home directory of the current user.

```
kpch@w:~$ printenv | grep HOME
HOME=/home/kpch
```

SHELL contains the path to the current user's shell

```
kpch@w:~$ printenv | grep SHELL
SHELL=/bin/bash
```

Useful commands

which

Locates the path to an executable file.

```
kpch@w:$ which bash
/bin/bash
```

unset

Removes shell or environment variable

```
kpch@w:$ unset my_pretty_var
kpch@w:$
```

Persistent variables

All persistent variables are stored in files.

- /etc/profile
- ~/.bash_profile
- ~/.bash_login
- ~/.profile
- ~/.bash_logout

Aliases

You can modify existing commands or create your own by using aliases.
Moreover, you already have aliases in your system by default.

```
kpch@w:~$  alias
alias alert='notify-send --urgency=low -i "$([ $? = 0 ] && echo terminal || echo error)" "$(history|tail -n1|sed -e '\''s/^\s*[0-
9]\+\s*//;s/[;&|]\s*alert$//'\'')"'
alias egrep='egrep --color=auto'
alias fgrep='fgrep --color=auto'
alias grep='grep --color=auto'
alias l='ls -CF'
alias la='ls -A'
alias ll='ls -alF'
alias ls='ls --color=auto'
alias nuget='mono /usr/local/bin/nuget.exe'

kpch@w:$ test_command
test_command: command not found
kpch@w:$ alias test_command='pwd'
kpch@w:$ test_command
/home/kpch
```

Useful links

- https://help.ubuntu.com/community/EnvironmentVariables
  Ubuntu documentation for environment variables
- https://www.digitalocean.com/community/tutorials/how-to-read-and-set-environmental-and-shell-variables-on-linux
  How To Read and Set Environmental and Shell Variables on Linux
- https://www.tecmint.com/linux-locate-command-practical-examples/
  10 Useful ‘locate’ Command Practical Examples
- https://tldp.org/LDP/Bash-Beginners-Guide/html/sect_03_01.html
  Shell initialization files

THANK YOU