Hassan Assani Lecturer: Dr. Simina Fluture

**HMWK# 2 CS340**

**• Standard Directories and Files**

**1.** [asha4206@venus ~]$ ls -l

total 196

-rw-r--r-- 1 asha4206 underg 1442 Sep 17 2015 a2\_asha.cpp

-rw-r--r-- 1 asha4206 underg 374 Sep 29 2015 a3\_asha.cpp

-rw-r--r-- 1 asha4206 underg 453 Oct 8 2015 a4\_asha.cpp

-rw-r--r-- 1 asha4206 underg 1287 Nov 2 2015 a5\_asha.cpp

-rw-r--r-- 1 asha4206 underg 807 Nov 5 2015 a6\_asha.cpp

-rw-r--r-- 1 asha4206 underg 937 Nov 17 2015 a8\_asha.cpp

-rw-r--r-- 1 asha4206 underg 1310 Dec 10 2015 a9\_asha.cpp

-rwxr-xr-x 1 asha4206 underg 13471 Nov 17 2015 a.out

drwxr-xr-x 3 asha4206 underg 4096 Sep 1 2015 cs111

-rw-r--r-- 1 asha4206 underg 1 Sep 3 17:41 dateFile

-rw------- 1 asha4206 underg 404 Nov 3 2015 dead.letter

-rw-r--r-- 1 asha4206 underg 439 Sep 3 19:20 dirlist

drwxr-xr-x 2 asha4206 underg 4096 Nov 27 2015 ex2

drwxr-xr-x 2 asha4206 underg 4096 Oct 12 2015 exam1

drwxr-xr-x 2 asha4206 underg 4096 Nov 15 2015 exam2

-rw-r--r-- 1 asha4206 underg 168 Oct 15 2015 exam.cpp

-rw-r--r-- 1 asha4206 underg 329 Oct 8 2015 examq10.cpp

-rw-r--r-- 1 asha4206 underg 267 Oct 8 2015 examq8.cpp

-rw-r--r-- 1 asha4206 underg 57 Oct 4 2015 exe.cpp

drwxr-xr-x 2 asha4206 underg 4096 Feb 9 2016 FI

-rw-r--r-- 1 asha4206 underg 17 Sep 3 17:29 first

-rw-r--r-- 1 asha4206 underg 18 Sep 3 17:28 first.cpp

-rwxr----- 1 asha4206 underg 56 Sep 3 17:44 full

-rw-r--r-- 1 asha4206 underg 111 Sep 3 18:28 July\_OH

-rw-r--r-- 1 asha4206 underg 1102 Oct 29 2015 lab13\_recursive.cpp

drwxr-xr-x 2 asha4206 underg 4096 Feb 1 2016 lab211

-rw-r--r-- 1 asha4206 underg 23 Sep 3 17:29 last

-rw-r--r-- 1 asha4206 underg 20 Sep 3 17:28 last.cpp

-rw-r--r-- 1 asha4206 underg 459 Oct 21 2015 lch4quadratic.cpp

-rw-r--r-- 1 asha4206 underg 222 Oct 21 2015 lch4randoms.cpp

-rw-r--r-- 1 asha4206 underg 190 Oct 1 2015 loop.cpp

drwx------ 2 asha4206 underg 4096 Dec 10 2015 mail

-rw-r--r-- 1 asha4206 underg 107 Sep 3 18:32 October\_OH

-rw------- 1 asha4206 underg 18 Sep 3 18:31 pico.save

-rw-r--r-- 1 asha4206 underg 320 Nov 17 2015 t.cpp

-rw-r--r-- 1 asha4206 underg 80 Sep 3 18:53 temp

-rwxr----- 1 asha4206 underg 56 Sep 3 17:55 temp2

lrwxrwxrwx 1 asha4206 underg 5 Sep 3 18:24 temp3 -> temp3

-rw-r--r-- 1 asha4206 underg 225 Oct 21 2015 test15.cpp

-rw-r--r-- 1 asha4206 underg 330 Oct 6 2015 test1.cpp

-rw-r--r-- 1 asha4206 underg 255 Oct 8 2015 test2.cpp

-rw-r--r-- 1 asha4206 underg 332 Oct 7 2015 test3.cpp

-rw-r--r-- 1 asha4206 underg 249 Oct 8 2015 test4.cpp

-rw-r--r-- 1 asha4206 underg 352 Nov 2 2015 test555.cpp

-rw-r--r-- 1 asha4206 underg 221 Oct 22 2015 test55.cpp

-rw-r--r-- 1 asha4206 underg 288 Oct 8 2015 test5.cpp

-rw-r--r-- 1 asha4206 underg 310 Oct 5 2015 test.cpp

2. [asha4206@ venus ~]$ cd /bin

3. [asha4206@venus bin]$ ls -l

-rwxr-xr-x 1 root root 24448 Aug 4 00:07 sg\_opcodes

-rwxr-xr-x 1 root root 36680 Aug 4 00:07 sgp\_dd

-rwxr-xr-x 1 root root 29032 Aug 4 00:07 sg\_persist

-rwxr-xr-x 1 root root 11568 Aug 4 00:07 sg\_prevent

-rwxr-xr-x 1 root root 20264 Aug 4 00:07 sg\_raw

-rwxr-xr-x 1 root root 20128 Aug 4 00:07 sg\_rbuf

-rwxr-xr-x 1 root root 15488 Aug 4 00:07 sg\_rdac

-rwxr-xr-x 1 root root 23888 Aug 4 00:07 sg\_read

-rwxr-xr-x 1 root root 11568 Aug 4 00:07 sg\_read\_block\_limits

-rwxr-xr-x 1 root root 15920 Aug 4 00:07 sg\_read\_buffer

-rwxr-xr-x 1 root root 20136 Aug 4 00:07 sg\_readcap

-rwxr-xr-x 1 root root 15920 Aug 4 00:07 sg\_read\_long

-rwxr-xr-x 1 root root 15904 Aug 4 00:07 sg\_reassign

-rwxr-xr-x 1 root root 15840 Aug 4 00:07 sg\_referrals

-rwxr-xr-x 1 root root 15952 Aug 4 00:07 sg\_requests

-rwxr-xr-x 1 root root 11736 Aug 4 00:07 sg\_reset

-rwxr-xr-x 1 root root 11592 Aug 4 00:07 sg\_rmsn

-rwxr-xr-x 1 root root 15752 Aug 4 00:07 sg\_rtpg

-rwxr-xr-x 1 root root 20056 Aug 4 00:07 sg\_safte

-rwxr-xr-x 1 root root 20344 Aug 4 00:07 sg\_sanitize

-rwxr-xr-x 1 root root 15912 Aug 4 00:07 sg\_sat\_identify

-rwxr-xr-x 1 root root 16216 Aug 4 00:07 sg\_sat\_phy\_event

-rwxr-xr-x 1 root root 15784 Aug 4 00:07 sg\_sat\_set\_features

-rwxr-xr-x 1 root root 15712 Aug 4 00:07 sg\_scan

-rwxr-xr-x 1 root root 20504 Aug 4 00:07 sg\_senddiag

-rwxr-xr-x 1 root root 69176 Aug 4 00:07 sg\_ses

-rwxr-xr-x 1 root root 20168 Aug 4 00:07 sg\_start

-rwxr-xr-x 1 root root 20080 Aug 4 00:07 sg\_stpg

-rwxr-xr-x 1 root root 15880 Aug 4 00:07 sg\_sync

-rwxr-xr-x 1 root root 15968 Aug 4 00:07 sg\_test\_rwbuf

-rwxr-xr-x 1 root root 15856 Aug 4 00:07 sg\_turs

-rwxr-xr-x 1 root root 15864 Aug 4 00:07 sg\_unmap

-rwxr-xr-x 1 root root 16080 Aug 4 00:07 sg\_verify

-rwxr-xr-x 1 root root 79528 Aug 4 00:07 sg\_vpd

-rwxr-xr-x 1 root root 16048 Aug 4 00:07 sg\_write\_buffer

-rwxr-xr-x 1 root root 15920 Aug 4 00:07 sg\_write\_long

-rwxr-xr-x 1 root root 20368 Aug 4 00:07 sg\_write\_same

-rwxr-xr-x 1 root root 20016 Aug 4 00:07 sg\_wr\_mode

-rwxr-xr-x 1 root root 36464 Aug 4 00:07 sg\_xcopy

lrwxrwxrwx 1 root root 4 Sep 17 16:10 sh -> bash

-rwxr-xr-x. 1 root root 37456 Nov 5 2016 sha1sum

-rwxr-xr-x. 1 root root 41600 Nov 5 2016 sha224sum

-rwxr-xr-x. 1 root root 41600 Nov 5 2016 sha256sum

-rwxr-xr-x. 1 root root 41592 Nov 5 2016 sha384sum

-rwxr-xr-x. 1 root root 41592 Nov 5 2016 sha512sum

-rwxr-xr-x 1 root root 31840 Sep 21 06:31 sharesec

-rwxr-xr-x 1 root root 1518976 Aug 2 04:20 shcomp

-rwxr-xr-x 1 root root 10371 Aug 11 06:23 show-changed-rco

-rwxr-xr-x 1 root root 15832 Aug 2 09:09 showconsolefont

-rwxr-xr-x 1 root root 16572 Aug 11 06:23 show-installed

-rwxr-xr-x 1 root root 15600 Aug 2 09:09 showkey

-rwxr-xr-x 1 root root 7248 Aug 11 14:43 showrgb

-rwxr-xr-x. 1 root root 54216 Nov 5 2016 shred

-rwxr-xr-x. 1 root root 50320 Nov 5 2016 shuf

-rwxr-xr-x 1 root root 171984 Sep 29 08:51 signtool

-rwxr-xr-x 1 root root 92552 Sep 29 08:51 signver

-rwxr-xr-x 1 root root 108344 Aug 3 12:25 simc\_lsmplugin

-rwxr-xr-x 1 root root 1251 Aug 3 12:25 sim\_lsmplugin

-rwxr-xr-x 1 root root 33128 Sep 6 12:47 size

-rwxr-xr-x 1 root root 24184 Aug 4 07:12 skill

-rwxr-xr-x 1 root root 19984 Aug 4 07:12 slabtop

-rwxr-xr-x. 1 root root 33112 Nov 5 2016 sleep

-rwxr-xr-x. 1 root root 2039 Jun 9 2014 sliceprint

lrwxrwxrwx 1 root root 5 Sep 17 16:14 slogin -> ./ssh

-rwxr-xr-x. 1 root root 15504 Nov 5 2016 slptool

-rwxr-xr-x 1 root root 40072 Sep 21 06:31 smbcacls

-rwxr-xr-x 1 root root 144112 Sep 21 06:31 smbclient

-rwxr-xr-x 1 root root 53360 Sep 21 06:31 smbcontrol

-rwxr-xr-x 1 root root 23616 Sep 21 06:31 smbcquotas

-rwxr-xr-x 1 root root 27840 Sep 21 06:31 smbget

-rwxr-xr-x 1 root root 31808 Sep 21 06:31 smbpasswd

-rwxr--r-- 1 root root 2288 Sep 21 06:30 smbprint

-rwxr-xr-x 1 root root 19472 Sep 21 06:31 smbspool

-rwxr-xr-x 1 root root 68888 Sep 21 06:31 smbstatus

-rwxr-xr-x 1 root root 4896 Jan 11 2017 smbtar

-rwxr-xr-x 1 root root 15336 Sep 21 06:31 smbtree

-rwxr-xr-x 1 root root 18539 Aug 3 20:39 smtpd.py

-rwxr-xr-x. 1 root root 15552 Jun 10 2014 sndfile-resample

-rwxr-xr-x 1 root root 24184 Aug 4 07:12 snice

-rwxr-xr-x 1 root root 11280 Aug 3 18:04 snmpbulkget

-rwxr-xr-x 1 root root 15384 Aug 3 18:04 snmpbulkwalk

-rwxr-xr-x 1 root root 26137 Aug 3 18:04 snmpconf

-rwxr-xr-x 1 root root 19592 Aug 3 18:04 snmpdelta

-rwxr-xr-x 1 root root 15296 Aug 3 18:04 snmpdf

-rwxr-xr-x 1 root root 11152 Aug 3 18:04 snmpget

-rwxr-xr-x 1 root root 11160 Aug 3 18:04 snmpgetnext

lrwxrwxrwx 1 root root 8 Sep 17 16:11 snmpinform -> snmptrap

-rwxr-xr-x 1 root root 49168 Aug 3 18:04 snmpnetstat

-rwxr-xr-x 1 root root 15256 Aug 3 18:04 snmpset

-rwxr-xr-x 1 root root 16160 Aug 3 18:04 snmpstatus

-rwxr-xr-x 1 root root 23560 Aug 3 18:04 snmptable

-rwxr-xr-x 1 root root 15264 Aug 3 18:04 snmptest

-rwxr-xr-x 1 root root 19504 Aug 3 18:04 snmptls

-rwxr-xr-x 1 root root 15264 Aug 3 18:04 snmptranslate

-rwxr-xr-x 1 root root 15648 Aug 3 18:04 snmptrap

-rwxr-xr-x 1 root root 36064 Aug 3 18:04 snmpusm

-rwxr-xr-x 1 root root 32880 Aug 3 18:04 snmpvacm

-rwxr-xr-x 1 root root 15352 Aug 3 18:04 snmpwalk

-rwxr-xr-x. 1 root root 33368 Jun 9 2014 soelim

lrwxrwxrwx 1 root root 38 Sep 17 16:13 soffice -> /usr/lib64/libreoffice/program/soffice

-rwxr-xr-x. 1 root root 77752 Nov 5 2016 softhsm2-dump-file

-rwxr-xr-x. 1 root root 19616 Nov 5 2016 softhsm2-keyconv

-rwxr-xr-x. 1 root root 23904 Nov 5 2016 softhsm2-migrate

-rwxr-xr-x. 1 root root 11544 Nov 5 2016 softhsm2-pk11install

-rwxr-xr-x. 1 root root 36320 Nov 5 2016 softhsm2-util

-rwxr-xr-x. 1 root root 117728 Nov 5 2016 sort

-rwxr-xr-x 1 root root 4341 Aug 1 16:40 sotruss

-rwxr-xr-x. 1 root root 15696 Jun 9 2014 sound\_dump

-rwxr-xr-x. 1 root root 27224 Jun 9 2014 soundstretch

-rwxr-xr-x. 1 root root 70360 Jun 9 2014 sox

lrwxrwxrwx. 1 root root 3 Dec 12 2016 soxi -> sox

-rwxr-xr-x. 1 root root 218 Sep 10 2010 spd-conf

-rwxr-xr-x. 1 root root 20456 Jun 9 2014 spd-say

-rwxr-xr-x. 1 root root 15928 Jun 9 2014 spdsend

-rwxr-xr-x 1 root root 32576 Aug 3 03:08 speaker-test

-rwxr-xr-x. 1 root root 141792 Jun 9 2014 speech-dispatcher

-rwxr-xr-x. 1 root root 62520 Nov 5 2016 spice-vdagent

-rwxr-xr-x 1 root root 18459 Aug 2 13:45 splain

-rwxr-xr-x. 1 root root 71128 Nov 5 2016 split

-rwxr-xr-x. 1 root root 3186 Jun 9 2014 splitdiff

-rwxr-xr-x 1 root root 23152 Aug 1 17:09 sprof

-rwxr-xr-x. 1 root root 56240 Nov 20 2015 sqlite3

-rwxr-xr-x 1 root root 778752 Sep 6 18:17 ssh

-rwxr-xr-x 1 root root 360920 Sep 6 18:17 ssh-add

---x--s--x 1 root nobody 382232 Sep 6 18:17 ssh-agent

-rwxr-xr-x 1 root root 10469 Sep 6 18:17 ssh-copy-id

-rwxr-xr-x 1 root root 419232 Sep 6 18:17 ssh-keygen

-rwxr-xr-x 1 root root 441088 Sep 6 18:17 ssh-keyscan

-rwxr-xr-x 1 root root 24320 Sep 6 11:57 sslget

-rwxr-xr-x 1 root root 112904 Sep 29 08:51 ssltap

-rwxr-xr-x 1 root root 23864 Sep 6 22:18 sss\_ssh\_authorizedkeys

-rwxr-xr-x 1 root root 27960 Sep 6 22:18 sss\_ssh\_knownhostsproxy

-rwxr-xr-x 1 root root 3225072 Aug 3 11:58 stap

-rwxr-xr-x 1 root root 183400 Aug 3 11:58 stapdyn

-rwxr-xr-x 1 root root 11224 Aug 3 11:58 stap-merge

-rwxr-xr-x 1 root root 4031 Aug 3 11:58 stap-prep

-rwxr-xr-x 1 root root 4520 Aug 3 11:58 stap-report

---s--x--- 1 root stapusr 191328 Aug 3 11:58 staprun

-rwxr-xr-x 1 root root 23736 Aug 3 11:58 stapsh

-rwxr-xr-x 1 root root 1340 Aug 6 13:38 start-pulseaudio-x11

-rwxr-xr-x. 1 root root 5570 Nov 22 2015 startx

-rwxr-xr-x. 1 root root 74904 Nov 5 2016 stat

-rwxr-xr-x. 1 root root 99392 Jun 9 2014 states

-rwxr-xr-x. 1 root root 66448 Nov 5 2016 stdbuf

-rwxr-xr-x 1 root root 646216 Aug 4 01:38 strace

-rwxr-xr-x 1 root root 944 Aug 4 01:38 strace-log-merge

-rwxr-xr-x 1 root root 7200 Jun 16 2016 stream

-rwxr-xr-x 1 root root 29088 Sep 6 12:47 strings

-rwxr-xr-x 1 root root 228528 Sep 6 12:47 strip

-rwxr-xr-x. 1 root root 70264 Nov 5 2016 stty

-rwxr-xr-x. 1 root root 45352 Jun 9 2014 stunbdc

-rwxr-xr-x. 1 root root 41040 Jun 9 2014 stund

-rwsr-xr-x 1 root root 32096 Aug 4 07:18 su

---s--x--x 1 root root 143192 Sep 6 22:26 sudo

lrwxrwxrwx 1 root root 4 Sep 17 16:16 sudoedit -> sudo

---x--x--x 1 root root 48912 Sep 6 22:26 sudoreplay

-rwxr-xr-x. 1 root root 37432 Nov 5 2016 sum

-rwxr-xr-x 1 root root 546 Aug 8 23:05 sushi

-rwxr-xr-x 1 root root 238024 Aug 23 16:47 svn

-rwxr-xr-x 1 root root 69016 Aug 23 16:47 svnadmin

-rwxr-xr-x 1 root root 36160 Aug 23 16:47 svndumpfilter

-rwxr-xr-x 1 root root 69064 Aug 23 16:47 svnlook

-rwxr-xr-x 1 root root 52760 Aug 23 16:47 svnrdump

-rwxr-xr-x 1 root root 85984 Aug 23 16:47 svnserve

-rwxr-xr-x 1 root root 52832 Aug 23 16:47 svnsync

-rwxr-xr-x 1 root root 15512 Aug 23 16:47 svnversion

-rwxr-xr-x. 1 root root 1414688 Nov 5 2016 swig

-rwxr-xr-x. 3 root root 80872 Jun 9 2014 sx

-rwxr-xr-x. 1 root root 28976 Nov 5 2016 sync

-rwxr-xr-x 1 root root 19120 Aug 11 13:47 synclient

-rwxr-xr-x 1 root root 20000 Aug 11 13:47 syndaemon

-rwxr-xr-x 1 root root 15632 Aug 9 22:17 system-config-abrt

-rwxr-xr-x. 1 root root 95 Nov 3 2014 system-config-printer

-rwxr-xr-x. 1 root root 80 Nov 3 2014 system-config-printer-applet

-rwxr-xr-x 1 root root 641808 Sep 6 22:39 systemctl

-rwxr-xr-x 1 root root 1440552 Sep 6 22:39 systemd-analyze

-rwxr-xr-x 1 root root 49512 Sep 6 22:39 systemd-ask-password

-rwxr-xr-x 1 root root 32904 Sep 6 22:39 systemd-cat

-rwxr-xr-x 1 root root 283896 Sep 6 22:39 systemd-cgls

-rwxr-xr-x 1 root root 66464 Sep 6 22:39 systemd-cgtop

lrwxrwxrwx 1 root root 11 Sep 17 16:13 systemd-coredumpctl -> coredumpctl

-rwxr-xr-x 1 root root 62192 Sep 6 22:39 systemd-delta

-rwxr-xr-x 1 root root 32872 Sep 6 22:39 systemd-detect-virt

-rwxr-xr-x 1 root root 37096 Sep 6 22:39 systemd-escape

-rwxr-xr-x 1 root root 83176 Sep 6 22:39 systemd-firstboot

-rwxr-xr-x 1 root root 70720 Sep 6 22:39 systemd-hwdb

-rwxr-xr-x 1 root root 275440 Sep 6 22:39 systemd-inhibit

lrwxrwxrwx 1 root root 8 Sep 17 16:13 systemd-loginctl -> loginctl

-rwxr-xr-x 1 root root 41248 Sep 6 22:39 systemd-machine-id-setup

-rwxr-xr-x 1 root root 37024 Sep 6 22:39 systemd-notify

-rwxr-xr-x 1 root root 483552 Sep 6 22:39 systemd-nspawn

-rwxr-xr-x 1 root root 41256 Sep 6 22:39 systemd-path

-rwxr-xr-x 1 root root 350176 Sep 6 22:39 systemd-run

-rwxr-xr-x 1 root root 271328 Sep 6 22:39 systemd-stdio-bridge

-rwxr-xr-x 1 root root 3979 Sep 6 22:38 systemd-sysv-convert

-rwxr-xr-x 1 root root 120560 Sep 6 22:39 systemd-tmpfiles

-rwxr-xr-x 1 root root 66192 Sep 6 22:39 systemd-tty-ask-password-agent

-rwxr-xr-x. 3 root root 80872 Jun 9 2014 sz

-rwxr-xr-x 1 root root 15680 Sep 6 18:08 tabs

-rwxr-xr-x. 1 root root 33256 Nov 5 2016 tac

-rwxr-xr-x. 1 root root 66808 Nov 5 2016 tail

-rwxr-xr-x 1 root root 24408 Aug 4 07:18 tailf

-rwxr-xr-x 1 root root 53784 Aug 3 05:31 tapestat

-rwxr-xr-x 1 root root 346096 Aug 2 12:27 tar

-rwxr-xr-x 1 root root 3967 Aug 2 14:45 targetcli

-rwxr-xr-x 1 root root 2137 Aug 4 03:08 targetctl

-rwxr-xr-x 1 root root 837 Aug 3 19:11 targetd

-rwxr-xr-x 1 root root 28856 Aug 4 07:18 taskset

-rwxr-xr-x. 1 root root 118744 Jun 9 2014 tbl

lrwxrwxrwx. 1 root root 8 Dec 12 2016 tclsh -> tclsh8.5

-rwxr-xr-x. 1 root root 7168 Nov 20 2015 tclsh8.5

-rwxr-xr-x. 1 root root 1472 Nov 5 2016 tcptraceroute

-rwxr-xr-x 1 root root 404648 Aug 2 21:17 tcsh

-rwxr-xr-x 1 root root 283368 Feb 9 2016 tdspool

-rwxr-xr-x 1 root root 154600 Aug 3 03:13 teamd

-rwxr-xr-x 1 root root 29664 Aug 3 03:13 teamdctl

-rwxr-xr-x 1 root root 19568 Aug 3 03:13 teamnl

-rwxr-xr-x. 1 root root 33152 Nov 5 2016 tee

-rwxr-xr-x. 1 root root 13960 Jun 9 2014 telepathy-gabble-xmpp-console

-rwxr-xr-x 1 root root 101776 Aug 3 16:00 telnet

-rwxr-xr-x. 1 root root 37328 Nov 5 2016 test

-rwxr-xr-x. 1 root root 30488 Jun 9 2014 testgdbm

-rwxr-xr-x. 1 root root 15736 Jun 10 2014 testlibraw

-rwxr-xr-x 1 root root 31760 Sep 21 06:31 testparm

-rwxr-xr-x. 1 root root 6843 Nov 6 2000 test\_ppa

-rwxr-xr-x 1 root root 74 Aug 2 15:49 testrb

-rwxr-xr-x. 1 root root 6465 Jun 9 2014 text2wave

-rwxr-xr-x. 1 root root 2295 Jun 10 2014 tgz

-rwxr-xr-x. 1 root root 15920 Jun 9 2014 theora\_dump\_video

-rwxr-xr-x. 1 root root 45488 Jun 9 2014 theora\_encode

-rwxr-xr-x. 1 root root 24248 Jun 9 2014 theora\_player

-rwxr-xr-x 1 root root 65800 Sep 6 18:08 tic

-rwxr-xr-x. 1 root root 15920 Jun 12 2014 time

-rwxr-xr-x 1 root root 296208 Sep 6 22:39 timedatectl

-rwxr-xr-x. 1 root root 54592 Nov 5 2016 timeout

-rwxr-xr-x 1 root root 141184 Sep 6 11:57 tkstool

-rwxr-xr-x 1 root root 15736 Aug 4 07:12 tload

-rwxr-xr-x 1 root root 31856 Sep 12 19:00 tmon

-rwxr-xr-x. 1 root root 30664 Jun 9 2014 tn5250

-rwxr-xr-x 1 root root 15800 Sep 6 18:08 toe

-rwxr-xr-x 1 root root 4238 Sep 6 11:55 TokenInfo

-rwxr-xr-x 1 root root 1123 Aug 7 00:32 tomcat-digest

-rwxr-xr-x 1 root root 1039 Aug 7 00:32 tomcat-tool-wrapper

-rwxr-xr-x 1 root root 106848 Aug 4 07:12 top

-rwxr-xr-x 1 root root 11384 Aug 8 23:30 totem

-rwxr-xr-x 1 root root 15824 Aug 8 23:30 totem-audio-preview

-rwxr-xr-x 1 root root 37264 Aug 8 23:30 totem-video-thumbnailer

-rwxr-xr-x. 1 root root 62488 Nov 5 2016 touch

-rwxr-xr-x 1 root root 103864 Aug 4 19:48 tpmtool

-rwxr-xr-x 1 root root 15784 Sep 6 18:08 tput

-rwxr-xr-x. 1 root root 45656 Nov 5 2016 tr

-rwxr-xr-x 1 root root 15408 Aug 4 04:01 tracepath

-rwxr-xr-x 1 root root 15408 Aug 4 04:01 tracepath6

-rwxr-xr-x. 1 root root 63344 Nov 5 2016 traceroute

lrwxrwxrwx. 1 root root 10 Dec 12 2016 traceroute6 -> traceroute

-rwxr-xr-x 1 root root 117456 Aug 8 23:43 tracker

-rwxr-xr-x. 1 root root 11656 Mar 5 2015 tred

-rwxr-xr-x. 1 root root 525272 Jun 9 2014 troff

-rwxr-xr-x. 1 root root 28920 Nov 5 2016 true

-rwxr-xr-x. 1 root root 53936 Nov 5 2016 truncate

-rwxr-xr-x 1 root root 183376 Aug 4 19:36 trust

-rwxr-xr-x 1 root root 20072 Sep 6 18:08 tset

-rwxr-xr-x. 1 root root 37344 Nov 5 2016 tsort

-rwxr-xr-x 1 root root 279008 Feb 9 2016 tsql

-rwxr-xr-x. 1 root root 101416 Nov 20 2015 ttmkfdir

-rwxr-xr-x. 1 root root 28960 Nov 5 2016 tty

-rwxr-xr-x 1 root root 83800 Sep 12 19:00 turbostat

lrwxrwxrwx. 1 root root 3 Dec 12 2016 twopi -> dot

-rwxr-xr-x 1 root root 7339 Aug 1 16:39 tzselect

-rwxr-xr-x 1 root root 20056 Aug 4 06:22 ucmatose

-rwxr-xr-x. 1 root root 19832 Nov 22 2015 ucs2any

-rwxr-xr-x 1 root root 20048 Aug 4 06:22 udaddy

-rwxr-xr-x 1 root root 373688 Sep 6 22:39 udevadm

-rwxr-xr-x. 1 root root 52656 Nov 20 2015 udisksctl

-rwxr-xr-x 1 root root 19984 Aug 4 06:22 udpong

-rwxr-xr-x 1 root root 19944 Aug 4 07:18 ul

-rwxr-xr-x 1 root root 15392 Aug 3 19:49 ulockmgr\_server

-rwxr-xr-x 1 root root 29 Sep 6 12:25 umask

-rwsr-xr-x 1 root root 31968 Aug 4 07:18 umount

-rwxr-xr-x 1 root root 31 Sep 6 12:25 unalias

-rwxr-xr-x. 1 root root 33080 Nov 5 2016 uname

lrwxrwxrwx. 1 root root 8 Dec 12 2016 uncompress -> compress

-rwxr-xr-x. 1 root root 33232 Nov 5 2016 unexpand

-rwxr-xr-x. 1 root root 15776 Mar 5 2015 unflatten

-rwxr-xr-x 1 root root 2555 Aug 2 09:07 unicode\_start

-rwxr-xr-x 1 root root 363 Aug 2 09:07 unicode\_stop

-rwxr-xr-x. 1 root root 45784 Nov 5 2016 uniq

-rwxr-xr-x 1 root root 4165 Sep 6 13:22 unix-lpr.sh

-rwxr-xr-x. 1 root root 28984 Nov 5 2016 unlink

-rwxr-xr-x. 1 root root 58726 Jun 9 2014 unoconv

-rwxr-xr-x 1 root root 370 Aug 7 06:54 unopkg

-rwxr-xr-x 1 root root 15824 Aug 4 07:18 unshare

-rwxr-xr-x. 1 root root 5940 Jun 9 2014 unwrapdiff

lrwxrwxrwx. 1 root root 2 Dec 12 2016 unxz -> xz

-rwxr-xr-x. 2 root root 185488 Nov 5 2016 unzip

-rwxr-xr-x. 1 root root 90728 Nov 5 2016 unzipsfx

-rwxr-xr-x 1 root root 1054 May 5 08:57 update-ca-trust

-rwxr-xr-x. 1 root root 48792 Nov 5 2016 updatedb

-rwxr-xr-x 1 root root 20096 Aug 2 08:15 update-desktop-database

-rwxr-xr-x 1 root root 313 Aug 2 01:52 update-gtk-immodules

-rwxr-xr-x 1 root root 54080 Aug 3 01:47 update-mime-database

-rwxr-xr-x 1 root root 15408 Aug 8 08:23 upower

-rwxr-xr-x 1 root root 11480 Aug 4 07:12 uptime

-rwxr-xr-x. 1 root root 12465 Nov 5 2016 urlgrabber

-rwxr-xr-x. 1 root root 4216 Jun 6 2013 usb-devices

-rwxr-xr-x. 1 root root 28384 Nov 20 2015 usbhid-dump

-rwxr-x---. 1 root root 33192 Nov 5 2016 users

-rwxr-xr-x 1 root root 11208 Aug 3 19:57 usleep

-rwxr-xr-x. 1 root root 15776 Nov 5 2016 usx2yloader

-rwxr-xr-x 1 root root 15816 Aug 4 07:18 utmpdump

-rwxr-xr-x 1 root root 11472 Aug 4 07:18 uuidgen

-rwxr-xr-x. 1 root root 3674 Jun 9 2014 uxterm

-rwxr-xr-x. 1 root root 2307 Jun 10 2014 uz

-rwxr-xr-x. 1 root root 117656 Nov 5 2016 vdir

-rwxr-xr-x. 1 root root 11360 Nov 5 2016 verify\_blkparse

-rwxr-xr-x 1 root root 10820 Aug 11 06:23 verifytree

-rwxr-xr-x 1 root root 128424 Aug 7 14:15 VGAuthService

-rwxr-xr-x 1 root root 910136 Aug 1 20:45 vi

lrwxrwxrwx 1 root root 2 Sep 17 16:12 view -> vi

-rwxr-xr-x 1 root root 2289640 Aug 1 20:45 vim

lrwxrwxrwx 1 root root 3 Sep 17 16:12 vimdiff -> vim

-rwxr-xr-x. 1 root root 1117 Mar 5 2015 vimdot

-rwxr-xr-x 1 root root 2084 Aug 1 20:45 vimtutor

-rwxr-xr-x 1 root root 315704 Aug 6 15:48 vinagre

-rwxr-xr-x 1 root root 636584 Sep 7 07:31 virsh

-rwxr-xr-x 1 root root 28008 Sep 7 07:31 virt-host-validate

-rwxr-xr-x 1 root root 9801 Sep 7 07:31 virt-pki-validate

-rwxr-xr-x 1 root root 2279 Sep 7 07:31 virt-xml-validate

-rwxr-xr-x 1 root root 16104 Aug 2 09:09 vlock

-rwxr-xr-x 1 root root 49936 Aug 7 14:15 vmhgfs-fuse

-rwxr-xr-x 1 root root 11560 Aug 11 14:05 vmmouse\_detect

-rwxr-xr-x 1 root root 32224 Aug 4 07:12 vmstat

-rwxr-xr-x 1 root root 9727 Aug 7 14:15 vm-support

-rwxr-xr-x 1 root root 48888 Aug 7 14:15 vmtoolsd

-rwxr-xr-x 1 root root 11328 Aug 7 14:15 vmware-checkvm

-rwxr-xr-x 1 root root 32536 Aug 7 14:15 vmware-guestproxycerttool

-rwxr-xr-x 1 root root 11472 Aug 7 14:15 vmware-hgfsclient

-rwxr-xr-x 1 root root 19488 Aug 7 14:15 vmware-namespace-cmd

-rwxr-xr-x 1 root root 49088 Aug 7 14:15 vmware-rpctool

-rwxr-xr-x 1 root root 40672 Aug 7 14:15 vmware-toolbox-cmd

-rwxr-xr-x 1 root root 11416 Aug 7 14:15 vmware-user-suid-wrapper

-rwxr-xr-x 1 root root 15360 Aug 7 14:15 vmware-vgauth-cmd

-rwxr-xr-x 1 root root 16080 Aug 7 14:15 vmware-vmblock-fuse

-rwxr-xr-x 1 root root 11336 Aug 7 14:15 vmware-xferlogs

-rwxr-xr-x 1 root root 24144 Aug 6 17:46 vstp

-rwxr-xr-x. 1 root root 15744 Nov 5 2016 vxloader

-rwxr-x---+ 1 root root 19904 Aug 4 07:12 w

-rwxr-xr-x 1 root root 28 Sep 6 12:25 wait

-rwxr-x---. 1 root tty 15344 Jun 9 2014 wall

-rwxr-xr-x 1 root root 24720 Aug 4 07:12 watch

-rwxr-xr-x. 1 root root 15648 Nov 5 2016 watchgnupg

-rwxr-xr-x. 1 root root 45040 Jun 10 2014 wavpack

-rwxr-xr-x 1 root root 2048 Jan 20 2015 wbemcat

-rwxr-xr-x 1 root pegasus 77912 Aug 9 16:37 wbemexec

-rwxr-xr-x. 1 root root 41640 Nov 5 2016 wc

-rwxr-xr-x 1 root root 41568 Aug 4 07:18 wdctl

-rwxr-xr-x 1 root root 286 Sep 6 13:22 wftopfa

-rwxr-xr-x 1 root root 418736 Aug 3 22:35 wget

-rwxr-xr-x. 1 root root 46456 Jun 9 2014 whatis

-rwxr-xr-x 1 root root 20664 Aug 4 07:18 whereis

-rwxr-xr-x. 1 root root 24336 Jun 9 2014 which

-rwxr-xr-x. 1 root root 28504 Jun 10 2014 whiptail

-rwxr-x---+ 1 root root 49872 Nov 5 2016 who

-rwxr-xr-x. 1 root root 28984 Nov 5 2016 whoami

lrwxrwxrwx. 1 root root 7 Dec 12 2016 wish -> wish8.5

-rwxr-xr-x. 1 root root 7208 Nov 20 2015 wish8.5

-rwxr-xr-x. 1 root root 229 Nov 5 2016 withsctp

-rwxr-xr-x 1 root root 11656 Aug 5 23:57 wnck-urgency-monitor

-rwxr-xr-x. 1 root root 311744 Nov 20 2015 wodim

-rwxr-s--- 1 root tty 19536 Aug 4 07:18 write

-rwxr-xr-x. 1 root root 20320 Jun 10 2014 wseventmgr

-rwxr-xr-x. 1 root root 33128 Jun 10 2014 wsman

-rwxr-xr-x. 1 root root 158096 Jun 9 2014 wvdial

-rwxr-xr-x. 1 root root 57592 Jun 9 2014 wvdialconf

-rwxr-xr-x. 1 root root 33080 Jun 10 2014 wvgain

-rwxr-xr-x. 1 root root 45176 Jun 10 2014 wvunpack

lrwxrwxrwx 1 root root 4 Sep 17 16:13 X -> Xorg

-rwxr-xr-x. 1 root root 1265880 Jun 9 2014 x3270

-rwxr-xr-x. 1 root root 15688 Jun 9 2014 x3270if

lrwxrwxrwx 1 root root 7 Sep 17 16:13 x86\_64 -> setarch

-rwxr-xr-x 4 root root 772688 Aug 1 14:24 x86\_64-redhat-linux-c++

-rwxr-xr-x 4 root root 772688 Aug 1 14:24 x86\_64-redhat-linux-g++

-rwxr-xr-x 2 root root 768592 Aug 1 14:24 x86\_64-redhat-linux-gcc

-rwxr-xr-x 1 root root 10504 Sep 12 19:00 x86\_energy\_perf\_policy

-rwxr-xr-x. 1 root root 62288 Nov 20 2015 xargs

-rwxr-xr-x. 1 root root 41784 Nov 22 2015 xauth

-rwxr-xr-x 1 root root 80152 Aug 6 17:46 xbrlapi

-rwxr-xr-x. 1 root root 19511 Nov 5 2016 xdg-desktop-icon

-rwxr-xr-x. 1 root root 42913 Nov 5 2016 xdg-desktop-menu

-rwxr-xr-x. 1 root root 23964 Nov 5 2016 xdg-email

-rwxr-xr-x. 1 root root 28727 Nov 5 2016 xdg-icon-resource

-rwxr-xr-x. 1 root root 39354 Nov 5 2016 xdg-mime

-rwxr-xr-x. 1 root root 19296 Nov 5 2016 xdg-open

-rwxr-xr-x. 1 root root 28532 Nov 5 2016 xdg-screensaver

-rwxr-xr-x. 1 root root 33576 Nov 5 2016 xdg-settings

-rwxr-xr-x. 1 root root 234 Jun 9 2014 xdg-user-dir

-rwxr-xr-x. 1 root root 20296 Jun 10 2014 xdg-user-dirs-gtk-update

-rwxr-xr-x. 1 root root 20168 Jun 9 2014 xdg-user-dirs-update

-rwxr-xr-x 1 root root 37664 Aug 11 14:51 xdpyinfo

-rwxr-xr-x. 1 root root 11336 Nov 5 2016 xdriinfo

lrwxrwxrwx 1 root root 24 Jan 25 2017 xemacs -> /etc/alternatives/xemacs

-rwxr-xr-x 1 root root 9600440 Aug 12 2014 xemacs-21.5-b34

lrwxrwxrwx 1 root root 15 Jan 25 2017 xemacs-script -> xemacs-21.5-b34

-rwxr-xr-x. 1 root root 430 Sep 30 2014 xerces-j2-constants

-rwxr-xr-x. 1 root root 424 Sep 30 2014 xerces-j2-version

-rwxr-xr-x 1 root root 32520 Aug 11 14:51 xev

-rwxr-xr-x 1 root root 11416 Aug 11 14:43 xgamma

-rwxr-xr-x 1 root root 271784 Aug 2 22:24 xgettext

-rwxr-xr-x 1 root root 15752 Aug 11 14:43 xhost

-rwxr-xr-x. 1 root root 20088 Nov 22 2015 xinit

-rwxr-xr-x 1 root root 54080 Aug 11 14:43 xinput

-rwxr-xr-x. 1 root root 213248 Nov 22 2015 xkbcomp

-rwxr-xr-x 1 root root 15632 Aug 11 14:43 xkill

-rwxr-xr-x 1 root root 11464 Aug 11 14:51 xlsatoms

-rwxr-xr-x 1 root root 15736 Aug 11 14:51 xlsclients

-rwxr-xr-x 1 root root 19864 Aug 11 14:51 xlsfonts

-rwxr-xr-x. 1 root root 19752 Jun 23 2016 xmlcatalog

-rwxr-xr-x. 1 root root 63408 Jun 23 2016 xmllint

-rwxr-xr-x. 1 root root 513 Jun 9 2014 xml-resolver

-rwxr-xr-x 1 root root 61368 Aug 31 11:28 xmlsec1

-rwxr-xr-x 1 root root 3028 Jan 20 2015 xmltest

-rwxr-xr-x. 1 root root 24568 Nov 28 2016 xmlwf

-rwxr-xr-x. 1 root root 507 Jun 9 2014 xml-xparse

-rwxr-xr-x. 1 root root 505 Jun 9 2014 xml-xread

-rwxr-xr-x 1 root root 33056 Aug 11 14:43 xmodmap

-rwxr-xr-x. 1 root root 1063 Nov 20 2015 xmvn-builddep

-rwsr-xr-x 1 root root 2401112 Aug 5 02:20 Xorg

-rwxr--r--. 1 root root 1322 Nov 22 2015 xorg-x11-fonts-update-dirs

-rwxr-xr-x 1 root root 39248 Aug 11 14:51 xprop

-rwxr-xr-x 1 root root 61504 Aug 11 14:43 xrandr

-rwxr-xr-x 1 root root 28448 Aug 11 14:43 xrdb

-rwxr-xr-x 1 root root 11424 Aug 11 14:43 xrefresh

-rwxr-xr-x 1 root root 32480 Aug 11 14:43 xset

-rwxr-xr-x 1 root root 11368 Aug 11 14:43 xsetmode

-rwxr-xr-x 1 root root 11400 Aug 11 14:43 xsetpointer

-rwxr-xr-x 1 root root 19840 Aug 11 14:43 xsetroot

-rwxr-xr-x 1 root root 50192 Aug 11 14:23 xsetwacom

-rwxr-xr-x. 1 root root 24056 Jun 10 2014 xsltproc

-rwxr-xr-x 1 root root 16144 Aug 11 14:43 xstdcmap

-rwxr-xr-x. 1 root root 2771 Jun 9 2014 xt5250

-rwxr-xr-x. 1 root root 500488 Jun 9 2014 xterm

-rwxr-xr-x. 1 root root 1563 Mar 31 2015 xulrunner

-rwxr-xr-x. 1 root root 11592 Jun 9 2014 xvattr

-rwxr-xr-x 1 root root 15536 Aug 11 14:51 xvinfo

-rwxr-xr-x 1 root root 45152 Aug 11 14:51 xwininfo

-rwxr-xr-x 1 root root 14768 Aug 1 20:45 xxd

-rwxr-xr-x. 1 root root 75280 Nov 5 2016 xz

lrwxrwxrwx. 1 root root 2 Dec 12 2016 xzcat -> xz

lrwxrwxrwx. 1 root root 6 Dec 12 2016 xzcmp -> xzdiff

-rwxr-xr-x. 1 root root 11472 Nov 5 2016 xzdec

-rwxr-xr-x. 1 root root 6632 Nov 5 2016 xzdiff

lrwxrwxrwx. 1 root root 6 Dec 12 2016 xzegrep -> xzgrep

lrwxrwxrwx. 1 root root 6 Dec 12 2016 xzfgrep -> xzgrep

-rwxr-xr-x. 1 root root 5628 Nov 5 2016 xzgrep

-rwxr-xr-x. 1 root root 1802 Nov 5 2016 xzless

-rwxr-xr-x. 1 root root 2161 Nov 5 2016 xzmore

-rwxr-xr-x. 1 root root 86504 Jun 9 2014 yacc

-rwxr-xr-x 1 root root 55016 Aug 8 23:59 yelp

-rwxr-xr-x. 1 root root 28976 Nov 5 2016 yes

lrwxrwxrwx. 1 root root 8 Dec 12 2016 ypdomainname -> hostname

-rwxr-xr-x 1 root root 801 Aug 5 15:13 yum

-rwxr-xr-x 1 root root 9429 Aug 11 06:23 yum-builddep

-rwxr-xr-x 1 root root 9039 Aug 11 06:23 yum-config-manager

-rwxr-xr-x 1 root root 7609 Aug 11 06:23 yum-debug-dump

-rwxr-xr-x 1 root root 7903 Aug 11 06:23 yum-debug-restore

-rwxr-xr-x 1 root root 10999 Aug 11 06:23 yumdownloader

-rwxr-xr-x 1 root root 11031 Aug 11 06:23 yum-groups-manager

-rwxr-xr-x 1 root root 1941 Aug 2 11:49 zcat

-rwxr-xr-x 1 root root 1760 Aug 2 11:49 zcmp

-rwxr-xr-x 1 root root 5768 Aug 2 11:49 zdiff

-rwxr-xr-x 1 root root 123 Aug 2 11:49 zegrep

-rwxr-xr-x. 1 root root 1118 Dec 29 2013 zenheiset

-rwxr-xr-x 1 root root 103608 Aug 2 02:40 zenity

-rwxr-xr-x 1 root root 123 Aug 2 11:49 zfgrep

-rwxr-xr-x 1 root root 2144 Aug 2 11:49 zforce

-rwxr-xr-x 1 root root 5916 Aug 2 11:49 zgrep

-rwxr-xr-x. 1 root root 215840 Nov 5 2016 zip

-rwxr-xr-x. 1 root root 100456 Nov 5 2016 zipcloak

-rwxr-xr-x 1 root root 11992 Jun 9 2014 zipcmp

-rwxr-xr-x. 1 root root 48451 Jun 9 2014 zipdetails

-rwxr-xr-x. 1 root root 2953 Oct 10 2008 zipgrep

-rwxr-xr-x. 2 root root 185488 Nov 5 2016 zipinfo

-rwxr-xr-x 1 root root 12040 Jun 9 2014 zipmerge

-rwxr-xr-x. 1 root root 95984 Nov 5 2016 zipnote

-rwxr-xr-x. 1 root root 100096 Nov 5 2016 zipsplit

-rwxr-xr-x 1 root root 11880 Jun 9 2014 ziptorrent

-rwxr-xr-x 1 root root 2041 Aug 2 11:49 zless

-rwxr-xr-x 1 root root 2859 Aug 2 11:49 zmore

-rwxr-xr-x 1 root root 5343 Aug 2 11:49 znew

lrwxrwxrwx. 1 root root 6 Dec 12 2016 zsoelim -> soelim

-rwxr-xr-x 1 root root 4930376 Sep 16 08:55 zts-php

-rwxr-xr-x 1 root root 5560 Sep 16 08:55 zts-php-config

-rwxr-xr-x 1 root root 4788 Sep 16 08:55 zts-phpize

4. bash, sleep, ssh, uptime, truncate, and wait.

5. [asha4206@venus ~]$ ls /dev

Cdrom, disk, cpu, usb1mon(1,2,3), nvram. Lots of ttys (teletypes).

6. [asha4206@venus ~]$ cd /etc

7. default, hostname, jvm, netconfig, NetworkManager, sysconfig

8. drwxr-xr-x. = directory, read/write/make files, contents can be listed by users who can get access to this directory.

9. [asha4206@venus ~]$ cat /etc/passwd

Could not find my name.

**B.**

10. [asha4206@venus ~]$ echo $HOME

/home/fa17/340/asha4206

11. [asha4206@venus ~]$ pwd

/home/fa17/340/asha4206

**C.**

1. [asha4206@venus ~]$ echo $SHELL

/bin/bash

2. [asha4206@venus ~]$ chsh -l

/bin/sh

/bin/bash

/sbin/nologin

/usr/bin/sh

/usr/bin/bash

/usr/sbin/nologin

/bin/tcsh

/bin/csh

/bin/ksh

/bin/rksh

3. [asha4206@venus ~]$ chsh -s /bin/tcsh

Changing shell for asha4206.

Password:

Shell changed.

4. [asha4206@venus ~]$ ps

PID TTY TIME CMD

1534 pts/1 00:00:00 tcsh

1565 pts/1 00:00:00 ps

Shell changed from bash to tcsh when relogging.

**D.**

export TMOUT=18000

[asha4206@venus lib]$ cd

[asha4206@venus ~]$ echo $HOME

/home/fa17/340/asha4206

[asha4206@venus ~]$ pwd

/home/fa17/340/asha4206

[asha4206@venus ~]$ echo $SHELL

/bin/bash

[asha4206@venus ~]$ chsh

Changing shell for asha4206.

New shell [/bin/bash]: ls chsh

chsh: shell must be a full path name

[asha4206@venus ~]$ chsh -1

chsh: invalid option -- '1'

Usage:

chsh [options] [username]

Options:

-s, --shell <shell> specify login shell

-l, --list-shells print list of shells and exit

-u, --help display this help and exit

-v, --version output version information and exit

For more details see chsh(1).

[asha4206@venus ~]$ chsh -l

/bin/sh

/bin/bash

/sbin/nologin

/usr/bin/sh

/usr/bin/bash

/usr/sbin/nologin

/bin/tcsh

/bin/csh

/bin/ksh

/bin/rksh

[asha4206@venus ~]$ chsh -s /bin/tcsh

Changing shell for asha4206.

Password:

Shell changed.

[asha4206@venus ~]$ exit

Logout

2. ps –\*Letters\* command lists every process in the system

3. [asha4206@venus ~]$ ps -l

F S UID PID PPID C PRI NI ADDR SZ WCHAN TTY TIME CMD

0 S 2070 1534 1530 0 80 0 - 29871 sigsus pts/1 00:00:00 tcsh

0 R 2070 2472 1534 0 80 0 - 37236 - pts/1 00:00:00 ps

F = Flag, S = State, UID = useriD, PiD = Process iD, PPiD = Parent PiD, C = # of times process ran, PRI = kernel, NI = priority scheduling values, ADDR = mem address, SZ = size of file, WCHAN = kernel address, TTY = Terminal being used, TIME = how long process has taken to finish, CMD = command

4. [asha4206@venus ~]$ top

top - 18:24:10 up 124 days, 6:11, 15 users, load average: 1.02, 1.02, 1.05

Tasks: 1347 total, 2 running, 1345 sleeping, 0 stopped, 0 zombie

%Cpu(s): 0.3 us, 0.6 sy, 0.0 ni, 99.1 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st

KiB Mem : 65748024 total, 4829104 free, 4759656 used, 56159264 buff/cache

KiB Swap: 32964604 total, 27051740 free, 5912864 used. 53880124 avail Mem

PID USER PR NI VIRT RES SHR S %CPU %MEM TIME+ COMMAND

91756 kien7077 20 0 151168 156 80 R 100.0 0.0 32679:39 vim

3131 asha4206 20 0 158972 3536 1544 R 2.0 0.0 0:00.23 top

6577 root 20 0 277012 2496 272 S 0.3 0.0 49:55.78 pcscd

1 root 20 0 191564 3432 1628 S 0.0 0.0 61:45.82 systemd

2 root 20 0 0 0 0 S 0.0 0.0 0:06.39 kthreadd

3 root 20 0 0 0 0 S 0.0 0.0 0:24.84 ksoftirqd+

5 root 0 -20 0 0 0 S 0.0 0.0 0:00.00 kworker/0+

8 root rt 0 0 0 0 S 0.0 0.0 0:08.28 migration+

9 root 20 0 0 0 0 S 0.0 0.0 0:00.00 rcu\_bh

10 root 20 0 0 0 0 S 0.0 0.0 154:37.53 rcu\_sched

11 root rt 0 0 0 0 S 0.0 0.0 0:41.85 watchdog/0

12 root rt 0 0 0 0 S 0.0 0.0 0:38.83 watchdog/1

13 root rt 0 0 0 0 S 0.0 0.0 0:02.91 migration+

14 root 20 0 0 0 0 S 0.0 0.0 0:04.01 ksoftirqd+

16 root 0 -20 0 0 0 S 0.0 0.0 0:00.00 kworker/1+

18 root rt 0 0 0 0 S 0.0 0.0 0:42.54 watchdog/2

19 root rt 0 0 0 0 S 0.0 0.0 0:01.06 migration+

5. top - 18:24:10 up 124 days, 6:11, 15 users, load average: 1.02, 1.02, 1.05

Tasks: 1347 total, 2 running, 1345 sleeping, 0 stopped, 0 zombie

**E.**

1. https://msdn.microsoft.com/en-us/library/windows/desktop/ms682425(v=vs.85).aspx

When creating a process, if the original caller is impersonating another user, the token used will be of the original caller and not the user/token it is impersonating. Use commands CreateProcessAsUser or CreateProcessWithLogonW  when original caller wants to impersonate another.

BOOL WINAPI CreateProcess(

\_In\_opt\_    LPCTSTR               lpApplicationName,

\_Inout\_opt\_ LPTSTR                lpCommandLine,

\_In\_opt\_    LPSECURITY\_ATTRIBUTES lpProcessAttributes,

\_In\_opt\_    LPSECURITY\_ATTRIBUTES lpThreadAttributes,

\_In\_        BOOL                  bInheritHandles,

\_In\_        DWORD                 dwCreationFlags,

\_In\_opt\_    LPVOID                lpEnvironment,

\_In\_opt\_    LPCTSTR               lpCurrentDirectory,

\_In\_        LPSTARTUPINFO         lpStartupInfo,

\_Out\_       LPPROCESS\_INFORMATION lpProcessInformation

);

2. [asha4206@venus cs340]$ gcc parent.c -o parent

parent.c: In function âmainâ:

parent.c:7:3: warning: incompatible implicit declaration of built-in function âe

xitâ [enabled by default]

exit(0); /\* Should never get here, terminate\*/

^

parent.c:10:2: warning: incompatible implicit declaration of built-in function â

printfâ [enabled by default]

printf("Process[%d]: Parent in execution ...\n", getpid());

^

[asha4206@venus cs340]$ gcc child.c -o child

child.c: In function âmainâ:

child.c:4:2: warning: incompatible implicit declaration of built-in function âpr

intfâ [enabled by default]

printf("Process[%d]: child in execution ...\n", getpid());

^

[asha4206@venus cs340]$ ./parent

Process[7045]: Parent in execution ...

Process[7046]: child in execution ...

Process[7046]: child terminating ...

Process[7045]: Parent detects terminating child

Process[7045]: Parent terminating ...

[asha4206@venus cs340]$ gcc orphan.c -o orphan

[asha4206@venus cs340]$ ./orphan

I'm the original process with PID 7136 and PPID 6050.

I'm the parent process with PID 7136 and PPID 6050.

my child's PID 7137

PID 7136 terminates.

[asha4206@venus cs340]$ I'm the child process with PID 7137 and PPID 1.

PID 7137 terminates.

Parent runs, then child is allowed to run, parent waits while child executes and parent terminates after child terminates. Second command with “./orphan”, the parent terminates, then the child terminates with its exiting command as it is an orphan.

3.

#include<stdio.h>

#include <unistd.h>

main()

{

int z;

z = fork();

/\* z is non-zero, therefore zombie \*/

if (z != 0)

{

printf("I am the child with pid ... and my parent has ppid ...");

sleep(1);

}

else

{

printf("I am the parent and my id is… ");

sleep(30);

}

}

[asha4206@venus cs340]$ gcc zombie.c -o zombie

[asha4206@venus cs340]$ ./zombie

I am the child with pid ... and my parent has ppid ...