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Course:	Operating System (BSSE)
Section:	5-2

LAB 07

Task 01:

Step 1:

```
root@55766:/usr/bin# apt --version
apt 2.4.13 (amd64)
root@55766:/usr/bin#
```

Step 2:

```
root@55766:/home/sufyanahmed# apt install git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.15).
0 upgraded, 0 newly installed, 0 to remove and 230 not upgraded.
root@55766:/home/sufyanahmed#
```

Step 3:

```
root@55766:/home/sufyanahmed# apt list git
Listing... Done
git/jammy-security,now 1:2.34.1-1ubuntu1.15 amd64 [installed]
git/jammy-security 1:2.34.1-1ubuntu1.15 i386
root@55766:/home/sufyanahmed#
```

Step 4:

```
root@55766:/home/sufyanahmed# apt update
Hit:1 http://pk.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://pk.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://pk.archive.ubuntu.com/ubuntu jammy-backports InRelease
```

Step 5:

```
root@55766:/home/sufyanahmed# apt update
Hit:1 http://pk.archive.ubuntu.com/ubuntu jammy InRelease
Hit:2 http://pk.archive.ubuntu.com/ubuntu jammy-updates InRelease
Hit:3 http://pk.archive.ubuntu.com/ubuntu jammy-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu jammy-security InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
230 packages can be upgraded. Run 'apt list --upgradable' to see them.
root@55766:/home/sufyanahmed#
```

Step 6:

```
root@55766:/usr/bin# apt list g*
Listing... Done
gcc-11/jammy-security,now 11.4.0-1ubuntu1-22.04.2 amd64 [installed,automatic]
gcc-11/jammy-security 11.4.0-1ubuntu1-22.04.2 i386
gcc/jammy,now 4:11.2.0-1ubuntu1 amd64 [installed]
gcc/jammy 4:11.2.0-1ubuntu1 i386
gdb/jammy-updates,jammy-security,now 12.1-0ubuntu1-22.04.2 amd64 [installed,automatic]
gdb/jammy-updates,jammy-security 12.1-0ubuntu1-22.04.2 i386
gedit/jammy,now 41.0-3 amd64 [installed,automatic]
gedit/jammy 41.0-3 i386
genisoimage/jammy,now 9:1.1.11-3.2ubuntu1 amd64 [installed,automatic]
genisoimage/jammy 9:1.1.11-3.2ubuntu1 i386
gettext/jammy 0.21-4ubuntu4 amd64
gettext/jammy 0.21-4ubuntu4 i386
ghostscript/jammy-security 9.55.0-dfsg1-0ubuntu5.13 amd64 [upgradable from: 9.55.0-dfsg1-0ubuntu5.9]
ghostscript/jammy-security 9.55.0-dfsg1-0ubuntu5.13 i386
git/jammy-security,now 1:2.34.1-1ubuntu1.15 amd64 [installed]
git/jammy-security 1:2.34.1-1ubuntu1.15 i386
gjs/jammy-updates,now 1.72.4-0ubuntu0.22.04.3-really.1.72.2.0ubuntu2 amd64 [installed,automatic]
gjs/jammy-updates 1.72.4-0ubuntu0.22.04.3-really.1.72.2.0ubuntu2 i386
gnome-calculator/jammy,now 1:41.1-2ubuntu2 amd64 [installed,automatic]
gnome-calendar/jammy,now 41.2-3 amd64 [installed,automatic]
gnome-characters/jammy,now 41.0-4 amd64 [installed,automatic]
gnome-control-center/jammy-updates,jammy-security,now 1:41.7-0ubuntu0.22.04.8 amd64 [installed,automatic]
gnome-font-viewer/jammy,now 41.0-2 amd64 [installed,automatic]
gnome-keyring/jammy-updates,now 40.0-3ubuntu3 amd64 [installed,automatic]
gnome-logs/jammy,now 42.0-1 amd64 [installed,automatic]
gnome-session/jammy,jammy 42.0-1ubuntu2 all
gnome-shell/jammy-updates,jammy-security,now 42.9-0ubuntu2.2 amd64 [installed,automatic]
gnome-system-monitor/jammy,now 42.0-1 amd64 [installed,automatic]
gnome-terminal/jammy,now 3.44.0-1ubuntu1 amd64 [installed,automatic]
gnome-text-editor/jammy-updates 42.2-0ubuntu1 amd64
gnome-todo/jammy,now 3.28.1-6ubuntu1 amd64 [installed,automatic]
gpg-agent/jammy-security 2.2.27-3ubuntu2.4 amd64 [upgradable from: 2.2.27-3ubuntu2.1]
gpg-agent/jammy-security 2.2.27-3ubuntu2.4 i386
gpg-wks-server/jammy-security 2.2.27-3ubuntu2.4 amd64 [upgradable from: 2.2.27-3ubuntu2.1]
gpg-wks-server/jammy-security 2.2.27-3ubuntu2.4 i386
gnupg/jammy-security 2.2.27-3ubuntu2.4 amd64 [upgradable from: 2.2.27-3ubuntu2.1]
```

```
root@55766:/home/sufyanahmed# whereis git
git: /usr/bin/git /usr/share/man/man1/git.1.gz
root@55766:/home/sufyanahmed#
```

Step 7:

```
root@55766:/home/sufyanahmed# cd /usr/bin
root@55766:/usr/bin#
```

Step 8:

```
root@55766:/usr/bin# ls g*
gamemoded          genisoimage        gnome-keyring      gpgv               gs
gamma4scanimage    geqn               gnome-keyring-3    gpg-wks-server     gsbj
gapplication        getconf            gnome-keyring-daemon  gpg-zip            gsdj
gatttool           geteltorito        gnome-language-selector  gpic               gsdjs00
gcalccnd            getent             gnome-logs          gprof              gsettings
gcc                 getfacl            gnome-power-statistics  gpu-manager        gslj
gcc-11              getkeycodes        gnome-session        grctl              gslp
gcc-ar              getopt             gnome-session-custom-session  grep              gsnd
gcc-ar-11           gettext            gnome-session-inhibit  gresource          gst-device-monitor-1.0
gcc-nm              gettext.sh         gnome-session-properties  groff             gst-discoverer-1.0
gcc-nm-11           ghostscript        gnome-session-quit     grog               gst-inspect-1.0
gcc-ranlib          glinstall-info     gnome-shell           groops             gst-launch-1.0
gcc-ranlib-11       gio                gnome-shell-extension-tool  grotty            gst-play-1.0
gcore               gio-querymodules   gnome-shell-perf-tool  groups            gststreamer-codec-install
gcov               gipdddecode        gnome-system-monitor  grub-editenv       gst-stats-1.0
gcov-11            git                gnome-terminal        grub-file          gst-tester-1.0
gcov-dump          git-receive-pack   gnome-terminal.real    grub-fstest        gst-typefnd-1.0
gcov-dump-11       git-shell          gnome-terminal.wrapper  grub-glue-efl      gtbl
gcov-tool          git-upload-pack    gnome-text-editor      grub-kbdcomp       gtr
gcov-tool-11       gjs                gnome-thumbnail-font   grub-menulst2cfg   gtk4-builder-tool
gcr-viewer         gjs-console        gnome-todo              grub-mkfont         gtk4-encode-symbolic-svg
gdb                gjs-console        gnome-www-browser      grub-mkimage        gtk4-launch
gdb-add-index      gkbd-keyboard-display  gold                   grub-mklayout       gtk4-query-settings
gdbtui             glib-compile-schemas  gpasswd                grub-mknetdir       gtk4-update-icon-cache
gdbus              gnome-calculator    gpg                    grub-mkpasswd-pbkdf2  gtk-builder-tool
gdIALOG            gnome-calendar       gpg-agent              grub-mkrelpath      gtk-encode-symbolic-svg
gdk-pixbuf-csource gnome-characters      gpgcompose             grub-mkrescue        gtk-launch
gdk-pixbuf-pixdata gnome-control-center  gpgconf                grub-mkstandalone   gtk-query-settings
gdk-pixbuf-thumbnailer  gnome-disk-image-mounter  gpg-connect-agent     grub-mount          gtk-update-icon-cache
gdmflexiserver      gnome-disks          gpgparsemail           grub-ntldr-img      gunzip
gdm-screenshot      gnome-extensions     pgpasm                 grub-render-label   gzexe
gedit               gnome-font-viewer    pgpsplit               grub-script-check   gzip
gencat              gnome-help           pgptar                 grub-syslinux2cfg
```

Step 9:

```
root@55766:/usr/bin# ls git
git
root@55766:/usr/bin#
```

Step 10:

```
root@55766:/home/sufyanahmed# apt install --only-upgrade git
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
git is already the newest version (1:2.34.1-1ubuntu1.15).
0 upgraded, 0 newly installed, 0 to remove and 230 not upgraded.
root@55766:/home/sufyanahmed#
```

Task 02:

Step 1:

```
GNU nano 6.2
#include<stdio.h>
int main(){
    int x;

    printf("Enter Your Number: ");
    scanf("%d",&x);

    if(x%2==0){
        printf("You Entered Even Number");
    }else{
        printf("You Entered Odd Number");
    }
    return 0;
}
```

Step 2:

```
sufyanahmed@55766:~/Downloads/lab05$ gcc -o lab_07oddEvenChecker oddEvenChecker.c
```

Step 3:

```
sufyanahmed@55766:~/Downloads/lab05$ ./lab_07oddEvenChecker
Enter Your Number: 345
You Entered Odd Numbersufyanahmed@55766:~/Downloads/lab05$
```

Task 03:

Step 1:

```
sufyanahmed@55766:~/Downloads/lab07$ java --version
openjdk 11.0.28 2025-07-15
OpenJDK Runtime Environment (build 11.0.28+6-post-Ubuntu-1ubuntu122.04.1)
OpenJDK 64-Bit Server VM (build 11.0.28+6-post-Ubuntu-1ubuntu122.04.1, mixed mode, sharing)
sufyanahmed@55766:~/Downloads/lab07$
```

Step 2:

```
sufyanahmed@55766:~/Downloads/lab07$ touch CodesCracker.java
```

Step 3:

```
sufyanahmed@55766:~/Downloads/lab07$ nano CodesCracker.java
```

Step 4:

```
GNU nano 6.2 CodesCracker
import java.util.Scanner;

public class CodesCracker
{
    public static void main(String[] args)
    {
        int numberOne, numberTwo, largest;
        Scanner scan = new Scanner(System.in);

        System.out.print("Enter the First Number: ");
        numberOne = scan.nextInt();
        System.out.print("Enter the Second Number: ");
        numberTwo = scan.nextInt();

        if(numberOne>numberTwo)
            largest = numberOne;
        else
            largest = numberTwo;

        System.out.println("Largest Number = "+largest);
    }
}
```

Step 5:

```
sufyanahmed@55766:~/Downloads/lab07$ javac CodesCracker.java
```

Step 6:

```
sufyanahmed@55766:~/Downloads/lab07$ java CodesCracker
Enter the First Number: 45
Enter the Second Number: 90
Largest Number = 90
sufyanahmed@55766:~/Downloads/lab07$
```

Task 04:

Step 1:

```
sufyanahmed@55766:~/Downloads/lab07$ touch infiniteLoop.c
```

Step 2:

```
sufyanahmed@55766:~/Downloads/lab07$ nano infiniteLoop.c
```

Step 3:

```
GNU nano 6.2
#include <stdio.h>

int main() {
    int x = 1;

    while (1) {
        printf("Number: %d\n", x);
    }

    return 0;
}
```

Step 4:

```
sufyanahmed@55766:~/Downloads/lab07$ gcc -o infiniteLoop infiniteLoop.c
```

Step 5:

```
sufyanahmed@55766:~/Downloads/lab07$ ./infiniteLoop
```

Step 6:

[illegible]

Step 7:


```
sufyanahmed@55766:~/Downloads/lab07$ ps -u
```

USER	PID	%CPU	%MEM	VSZ	RSS	TTY	STAT	START	TIME	COMMAND
sufyana+	1254	0.0	0.1	171048	6016	tty2	Ssl+	Oct06	0:00	/usr/libexec/gdm-wayland-session env GNOME_SHELL_SESSION_MONI
sufyana+	1258	0.0	0.3	231700	15744	tty2	Sl+	Oct06	0:00	/usr/libexec/gnome-session-binary --session=ubuntu
sufyana+	4028	0.0	0.1	20324	5760	pts/2	Ss	00:05	0:00	bash
sufyana+	5619	41.9	0.0	2776	1408	pts/2	R+	00:39	0:05	./infiniteLoop
sufyana+	5624	0.6	0.1	19924	5376	pts/0	Ss	00:39	0:00	bash
sufyana+	5634	0.0	0.0	21328	3328	pts/0	R+	00:39	0:00	ps -u

Step 8:

```
sufyanahmed@55766:~/Downloads/lab07$ kill -9 5619
```

Step 9:

```
Number: 1
Number: 1Killed
```