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Reg.no: 2023-BSE-040

Subject: Cloud Computing

LAB # 5

Task 1:

1.

2.

3.

4.

5.

```
                  set a system property
    -verbose:[class|module|gc|jni]
                  enable verbose output for the given subsystem
    -version      print product version to the error stream and exit
    --version     print product version to the output stream and exit
    -showversion  print product version to the error stream and continue
    --show-version
                  print product version to the output stream and continue
    --show-module-resolution
                  show module resolution output during startup
    -? -h -help
                  print this help message to the error stream
    --help        print this help message to the output stream
    -X            print help on extra options to the error stream
    --help-extra  print help on extra options to the output stream
    -ea[:<packagename>...|:<classname>]
    -enableassertions[:<packagename>...|:<classname>]
                  enable assertions with specified granularity
    -da[:<packagename>...|:<classname>]
    -disableassertions[:<packagename>...|:<classname>]
                  disable assertions with specified granularity
    -esa | -enablesystemassertions
                  enable system assertions
    -dsa | -disablesystemassertions
                  disable system assertions
    -agentlib:<libname>[=<options>]
                  load native agent library <libname>, e.g. -agentlib:jdwp
                  see also -agentlib:jdwp=help
    -agentpath:<pathname>[=<options>]
                  load native agent library by full pathname
    -javaagent:<jarpath>[=<options>]
                  load Java programming language agent, see java.lang.instrument
    -splash:<imagepath>
                  show splash screen with specified image
                  HiDPI scaled images are automatically supported and used
                  if available. The unscaled image filename, e.g. image.ext,
                  should always be passed as the argument to the -splash option.
                  The most appropriate scaled image provided will be picked up
                  automatically.
                  See the SplashScreen API documentation for more information
    @argument files
                  one or more argument files containing options
    --disable-@files
                  prevent further argument file expansion
    --enable-preview
                  allow classes to depend on preview features of this release
  specify an argument for a long option, you can use --<name>=<value> or
  <name> <value>.
maira040@ubuntu64:~$
```

Task 2:

1.

```
maira040@ubuntu64:~$ sudo apt-get update
Hit:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
maira040@ubuntu64:~$
```

```
maira040@ubuntu64:~$ sudo apt-get install default-jre -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following NEW packages will be installed:
  default-jre
0 upgraded, 1 newly installed, 0 to remove and 67 not upgraded.
Need to get 0 B/922 B of archives.
After this operation, 6,144 B of additional disk space will be used.
Selecting previously unselected package default-jre.
(Reading database ... 101609 files and directories currently installed.)
Preparing to unpack .../default-jre_2%3a1.21-75+exp1_amd64.deb ...
Unpacking default-jre (2:1.21-75+exp1) ...
Setting up default-jre (2:1.21-75+exp1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
maira040@ubuntu64:~$ _
```

2.

```
maira040@ubuntu64:~$ java --version
openjdk 21.0.8 2025-07-15
OpenJDK Runtime Environment (build 21.0.8+9-Ubuntu-0ubuntu124.04.1)
OpenJDK 64-Bit Server VM (build 21.0.8+9-Ubuntu-0ubuntu124.04.1, mixed mode, sharing)
maira040@ubuntu64:~$
```

3.

```
maira040@ubuntu64:~$ sudo apt-get remove default-jre -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certif
  default-jre-headless fontconfig fonts-dejavu-extra gsettings-desktop-schemas gtk-update-i
  libasound2-data libasound2t64 libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-ja
  libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcolord2 libcups2t64
  libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common libgif7 libgl1 libgl1-me
  libgtk-3-bin libgtk-3-common libharfbuzz0b libice6 liblcms2-2 libllvm20 libpango-1.0-0 li
  libpixman-1-0 librsvg2-2 librsvg2-common libsm6 libthai-data libthai0 libvulkan1 libwayla
  libx11-xcb1 libxau7 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render
  libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1
  libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium mesa-vulkan-drivers openjdk-21-jre openjd
  x11-utils
Use 'sudo apt autoremove' to remove them.
The following packages will be REMOVED:
  default-jre
0 upgraded, 0 newly installed, 1 to remove and 67 not upgraded.
After this operation, 6,144 B disk space will be freed.
(Reading database ... 101610 files and directories currently installed.)
Removing default-jre (2:1.21-75+exp1) ...
maira040@ubuntu64:~$
```

4.
```
                enable verbose output for the given subsystem
-version       print product version to the error stream and exit
--version      print product version to the output stream and exit
-showversion   print product version to the error stream and continue
--show-version
                print product version to the output stream and continue
--show-module-resolution
                show module resolution output during startup
-? -h -help
                print this help message to the error stream
--help         print this help message to the output stream
-X             print help on extra options to the error stream
--help-extra   print help on extra options to the output stream
-ea[:<packagename>...|:<classname>]
-enableassertions[:<packagename>...|:<classname>]
                enable assertions with specified granularity
-da[:<packagename>...|:<classname>]
-disableassertions[:<packagename>...|:<classname>]
                disable assertions with specified granularity
-esa | -enablesystemassertions
                enable system assertions
-dsa | -disablesystemassertions
                disable system assertions
-agentlib:<libname>[=<options>]
                load native agent library <libname>, e.g. -agentlib:jdwp
                see also -agentlib:jdwp=help
-agentpath:<pathname>[=<options>]
                load native agent library by full pathname
-javaagent:<jarpath>[=<options>]
                load Java programming language agent, see java.lang.instrument
-splash:<imagepath>
                show splash screen with specified image
                HiDPI scaled images are automatically supported and used
                if available. The unscaled image filename, e.g. image.ext,
                should always be passed as the argument to the -splash option.
                The most appropriate scaled image provided will be picked up
                automatically.
                See the SplashScreen API documentation for more information
@argument files
                one or more argument files containing options
--disable-@files
                prevent further argument file expansion
--enable-preview
                allow classes to depend on preview features of this release
specify an argument for a long option, you can use --<name>=<value> or
<name> <value>.
```

Task 3:

1.
```
maira040@ubuntu64:~$ sudo apt update
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
67 packages can be upgraded. Run 'apt list --upgradable' to see them.
maira040@ubuntu64:~$
```

2.
```
maira040@ubuntu64:~$ sudo apt upgrade
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longe
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common
  default-jre-headless fontconfig fonts-dejavu-extra gsettings-deskt
  libasound2-data libasound2t64 libatk-bridge2.0-0t64 libatk-wrapper
  libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2
  libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common l
  libgtk-3-bin libgtk-3-common libharfbuzz0b libice6 liblcms2-2 libl
  libpixman-1-0 librsvg2-2 librsvg2-common libsm6 libthai-data libth
  libx11-xcb1 libxaw7 libxcb-dri3-0 libxcb-glx0 libxcb-present0 libx
  libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxft2 libxi6 l
  libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium mesa-vulkan-driver
  x11-utils
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  linux-headers-6.8.0-86 linux-headers-6.8.0-86-generic linux-image-
  linux-tools-6.8.0-86 linux-tools-6.8.0-86-generic
The following packages will be upgraded:
  bind9-dnsutils bind9-host bind9-libs cloud-init coreutils distro-i
  libc-devtools libc6 libc6-dev libfwupd2 libnss-systemd libpam-modu
  libpython3.12-stdlib libpython3.12t64 libsqlite3-0 libssl3t64 libs
  linux-generic linux-headers-generic linux-image-generic linux-libc
  openssh-sftp-server openssl powermgmt-base python3-software-proper
  systemd-dev systemd-hwe-hwdb systemd-resolved systemd-sysv systemd
  xxd
67 upgraded, 7 newly installed, 0 to remove and 0 not upgraded.
37 standard LTS security updates
Need to get 829 MB of archives.
After this operation, 308 MB of additional disk space will be used.
Do you want to continue? [Y/n]
```

```
Get:33 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:34 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:35 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:36 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:37 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:38 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:39 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:40 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:41 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:42 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:43 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:44 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:45 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:46 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:47 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:48 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:49 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:50 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:51 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:52 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:53 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:54 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:55 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:56 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:57 http://archive.ubuntu.com/ubuntu noble-updates/main
Get:58 http://archive.ubuntu.com/ubuntu noble-updates/main
25% [58 linux-firmware 36.9 MB/538 MB 7%]
```

```
Preparing to unpack .../24-powermgmt-base_1.37ubuntu0.1_all.deb ...
Unpacking powermgmt-base (1.37ubuntu0.1) over (1.37) ...
Preparing to unpack .../25-tcpdump_4.99.4-3ubuntu4.24.04.1_amd64.deb ...
Unpacking tcpdump (4.99.4-3ubuntu4.24.04.1) over (4.99.4-3ubuntu4) ...
Preparing to unpack .../26-firmware-sof-signed_2023.12.1-1ubuntu1.10_all.deb ...
Unpacking firmware-sof-signed (2023.12.1-1ubuntu1.10) over (2023.12.1-1ubuntu1.7) ...
Preparing to unpack .../27-libfwupd2_1.9.31-0ubuntu1~24.04.1_amd64.deb ...
Unpacking libfwupd2:amd64 (1.9.31-0ubuntu1~24.04.1) over (1.9.30-0ubuntu1~24.04.1) ...
Preparing to unpack .../28-fwupd_1.9.31-0ubuntu1~24.04.1_amd64.deb ...
Unpacking fwupd (1.9.31-0ubuntu1~24.04.1) over (1.9.30-0ubuntu1~24.04.1) ...
Preparing to unpack .../29-landscape-common_24.02-0ubuntu5.6_amd64.deb ...
Unpacking landscape-common (24.02-0ubuntu5.6) over (24.02-0ubuntu5.3) ...
Preparing to unpack .../30-libtiff6_4.5.1+git230720-4ubuntu2.4_amd64.deb ...
Unpacking libtiff6:amd64 (4.5.1+git230720-4ubuntu2.4) over (4.5.1+git230720-4ubuntu2.2) ...
Preparing to unpack .../31-udisks2_2.10.1-6ubuntu1.3_amd64.deb ...
Unpacking udisks2 (2.10.1-6ubuntu1.3) over (2.10.1-6ubuntu1.2) ...
Preparing to unpack .../32-libudisks2-0_2.10.1-6ubuntu1.3_amd64.deb ...
Unpacking libudisks2-0:amd64 (2.10.1-6ubuntu1.3) over (2.10.1-6ubuntu1.2) ...
Preparing to unpack .../33-linux-firmware_20240318.git3b128b60-0ubuntu2.19_amd64.deb ...
Unpacking linux-firmware (20240318.git3b128b60-0ubuntu2.19) over (20240318.git3b128b60-0u
Selecting previously unselected package linux-modules-6.8.0-86-generic.
Preparing to unpack .../34-linux-modules-6.8.0-86-generic_6.8.0-86.87_amd64.deb ...
Unpacking linux-modules-6.8.0-86-generic (6.8.0-86.87) ...
Progress: [ 48%] [#############################################################...
```

3.
```
maira040@ubuntu64:~$ cat ~/apt_update_vs_upgrade.md
apt update and apat apgrade serve different purposes in Ubuntu.
apt update refreshes your system's package list from the repositries, letting your computer know about the
latest available versions of software. apt upgrade actually installs those newer versions for the packages you
already have.
maira040@ubuntu64:~$ _
```

Task 4:

1.
```
already have.
maira040@ubuntu64:~$ sudo snap install --classic code
[sudo] password for maira040:
Download snap "snapd" (25577) from channel "stable"
```

2.
```
maira040@ubuntu64:~$ snap list code
Name    Version   Rev   Tracking        Publisher   Notes
code    7d842fb8  211   latest/stable   vscode♦     classic
maira040@ubuntu64:~$
```

3.
```
maira040@ubuntu64:~$ code --version
1.105.1
7d842fb85a0275a4a8e4d7e040d2625abbf7f084
x64
```

4.
```
maira040@ubuntu64:~$ ls -l /snap/bin | grep code
lrwxrwxrwx 1 root root 13 Oct 24 05:20 code -> /usr/bin/snap
lrwxrwxrwx 1 root root 13 Oct 24 05:20 code.url-handler -> /usr/bin/snap
```

Task 5:

1.
```
C:\Users\BOSS>ssh maira040@192.168.238.129
maira040@192.168.238.129's password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-71-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Fri Oct 24 05:24:53 AM UTC 2025

  System load:  0.0                Processes:             220
  Usage of /:   60.8% of 9.75GB    Users logged in:       1
  Memory usage: 14%                IPv4 address for ens33: 192.168.238.129
  Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

Enable ESM Apps to receive additional future security updates.
See https://ubuntu.com/esm or run: sudo pro status


*** System restart required ***
Last login: Thu Oct 23 13:08:33 2025 from 192.168.238.1
```

2.

```
maira040@ubuntu64:~$ sudo apt update && sudo apt upgrade -y
[sudo] password for maira040:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Hit:4 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:5 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 c-n-f Metadata [15.4 kB]
Fetched 268 kB in 2s (117 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  adwaita-icon-theme alsa-topology-conf alsa-ucm-conf at-spi2-common at-spi2-core ca-certificates-java
  dconf-gsettings-backend dconf-service default-jre-headless fontconfig fonts-dejavu-extra gsettings-desktop-schemas
  gtk-update-icon-cache hicolor-icon-theme humanity-icon-theme java-common libasound2-data libasound2t64
  libatk-bridge2.0-0t64 libatk-wrapper-java libatk-wrapper-java-jni libatk1.0-0t64 libatspi2.0-0t64 libavahi-client3
  libavahi-common-data libavahi-common3 libcairo-gobject2 libcairo2 libcolord2 libcups2t64 libdatrie1 libdconf1
  libdrm-amdgpu1 libdrm-intel1 libepoxy0 libgbm1 libgdk-pixbuf-2.0-0 libgdk-pixbuf2.0-bin libgdk-pixbuf2.0-common
  libgif7 libgl1 libgl1-mesa-dri libglvnd0 libglx-mesa0 libglx0 libgraphite2-3 libgtk-3-0t64 libgtk-3-bin
  libgtk-3-common libharfbuzz0b libice6 liblcms2-2 libllvm20 libpango-1.0-0 libpangocairo-1.0-0 libpangoft2-1.0-0
  libpciaccess0 libpcsclite1 libpixman-1-0 librsvg2-2 librsvg2-common libsm6 libthai-data libthai0 libvulkan1
  libwayland-client0 libwayland-cursor0 libwayland-egl1 libwayland-server0 libx11-xcb1 libxaw7 libxcb-dri3-0
  libxcb-glx0 libxcb-present0 libxcb-randr0 libxcb-render0 libxcb-shape0 libxcb-shm0 libxcb-sync1 libxcb-xfixes0
  libxcomposite1 libxcursor1 libxdamage1 libxfixes3 libxft2 libxi6 libxinerama1 libxkbfile1 libxmu6 libxrandr2
  libxrender1 libxshmfence1 libxt6t64 libxtst6 libxv1 libxxf86dga1 libxxf86vm1 mesa-libgallium mesa-vulkan-drivers
  openjdk-21-jre openjdk-21-jre-headless session-migration ubuntu-mono x11-common x11-utils
Use 'sudo apt autoremove' to remove them.
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
maira040@ubuntu64:~$
```

3.

```
maira040@ubuntu64:~$ sudo apt install xfce4 xfce4-goodies -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 openjdk-21-jre openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  7zip accountsservice accountsservice-ubuntu-schemas acl activity-log-manager apg aspell aspell-en ava
  avahi-utils bamfdaemon bluez bluez-obexd bubblewrap bzip2 cheese-common colord colord-data cpp cpp-13
  cpp-13-x86-64-linux-gnu cpp-x86-64-linux-gnu cracklib-runtime cups cups-browsed cups-client cups-comm
  cups-core-drivers cups-daemon cups-filters cups-filters-core-drivers cups-ipp-utils cups-pk-helper cu
  cups-server-common dconf-cli desktop-base desktop-file-utils dictionaries-common dns-root-data dnsmas
  docbook-xml elementary-xfce exo-utils fonts-droid-fallback fonts-noto-mono fonts-quicksand fonts-ubu
  evolution-data-server-common exo-utils fonts-droid-fallback fonts-noto-mono fonts-quicksand fonts-ubu
  fonts-urw-base35 gcc-13-base gcr gcr4 geocode-glib-common ghostscript gir1.2-atk-1.0 gir1.2-dbusmenu-
  gir1.2-freedesktop gir1.2-gdkpixbuf-2.0 gir1.2-gtk-3.0 gir1.2-handy-1 gir1.2-harfbuzz-0.0 gir1.2-ibus
  gir1.2-notify-0.7 gir1.2-pango-1.0 gir1.2-polkit-1.0 gir1.2-secret-1 gkbd-capplet glib-networking
  glib-networking-common glib-networking-services gnome-bluetooth gnome-bluetooth-3-common gnome-blueto
  gnome-control-center-faces gnome-desktop3-data gnome-keyring gnome-keyring-pkcs11 gnome-menus
  gnome-power-manager gnome-screensaver gnome-session-bin gnome-session-common gnome-settings-daemon-co
  gnome-startup-applications gnome-terminal gnome-terminal-data greybird-gtk-theme gsettings-ubuntu-sch
  gstreamer1.0-clutter-3.0 gstreamer1.0-gl gstreamer1.0-plugins-base gstreamer1.0-plugins-good gstream
  gtk2-engines-murrine gvfs gvfs-backends gvfs-common gvfs-daemons gvfs-libs hunspell-en-us i965-va-dri
  ibus-data ibus-gtk ibus-gtk3 ibus-gtk4 im-config indicator-applet indicator-application indicator-app
  indicator-bluetooth indicator-common indicator-datetime indicator-keyboard indicator-messages indicat
  indicator-printers indicator-session indicator-sound intel-media-va-driver-non-free iptables libaal1
```

4.

```
maira040@ubuntu64:~$ sudo apt install xrdp -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 openjdk-21-jre openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libfuse2t64 libpipewire-0.3-modules-xrdp pipewire-module-xrdp xorgxrdp
Suggested packages:
  pipewire-bin guacamole
The following NEW packages will be installed:
  libfuse2t64 libpipewire-0.3-modules-xrdp pipewire-module-xrdp xorgxrdp xrdp
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 715 kB of archives.
After this operation, 3,895 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/universe amd64 libfuse2t64 amd64 2.9.9-8.1build1 [89.9
Get:2 http://archive.ubuntu.com/ubuntu noble/universe amd64 xrdp amd64 0.9.24-4 [536 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/universe amd64 libpipewire-0.3-modules-xrdp amd64 0.2-
Get:4 http://archive.ubuntu.com/ubuntu noble/universe amd64 pipewire-module-xrdp all 0.2-2 [3,800 B
Get:5 http://archive.ubuntu.com/ubuntu noble/universe amd64 xorgxrdp amd64 1:0.9.19-1 [65.3 kB]
Fetched 715 kB in 1s (973 kB/s)
Selecting previously unselected package libfuse2t64:amd64.
(Reading database ... 176057 files and directories currently installed.)
Preparing to unpack .../libfuse2t64_2.9.9-8.1build1_amd64.deb ...
Unpacking libfuse2t64:amd64 (2.9.9-8.1build1) ...
Selecting previously unselected package xrdp.
Preparing to unpack .../xrdp_0.9.24-4_amd64.deb ...
Unpacking xrdp (0.9.24-4) ...
Selecting previously unselected package libpipewire-0.3-modules-xrdp:amd64.
Preparing to unpack .../libpipewire-0.3-modules-xrdp_0.2-2_amd64.deb ...
Unpacking libpipewire-0.3-modules-xrdp:amd64 (0.2-2) ...
Selecting previously unselected package pipewire-module-xrdp.
Preparing to unpack .../pipewire-module-xrdp_0.2-2_all.deb ...
Unpacking pipewire-module-xrdp (0.2-2) ...
Selecting previously unselected package xorgxrdp.
Preparing to unpack .../xorgxrdp_1%3a0.9.19-1_amd64.deb ...
Unpacking xorgxrdp (1:0.9.19-1) ...
Setting up libpipewire-0.3-modules-xrdp:amd64 (0.2-2) ...
Setting up xorgxrdp (1:0.9.19-1) ...
Setting up libfuse2t64:amd64 (2.9.9-8.1build1) ...
```
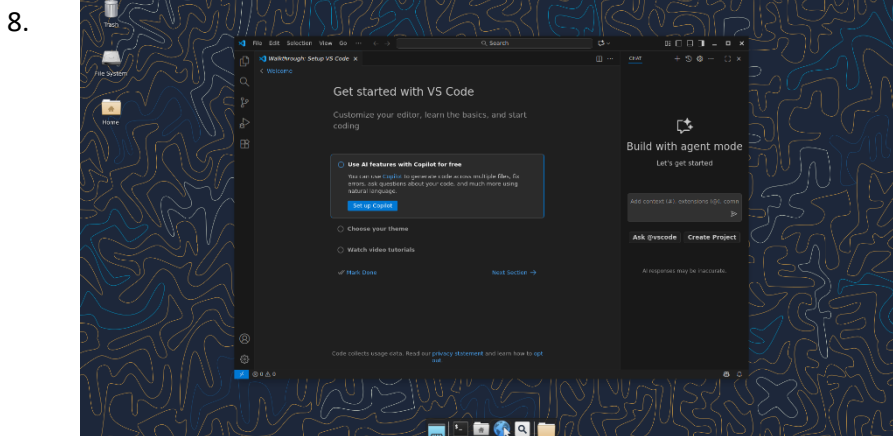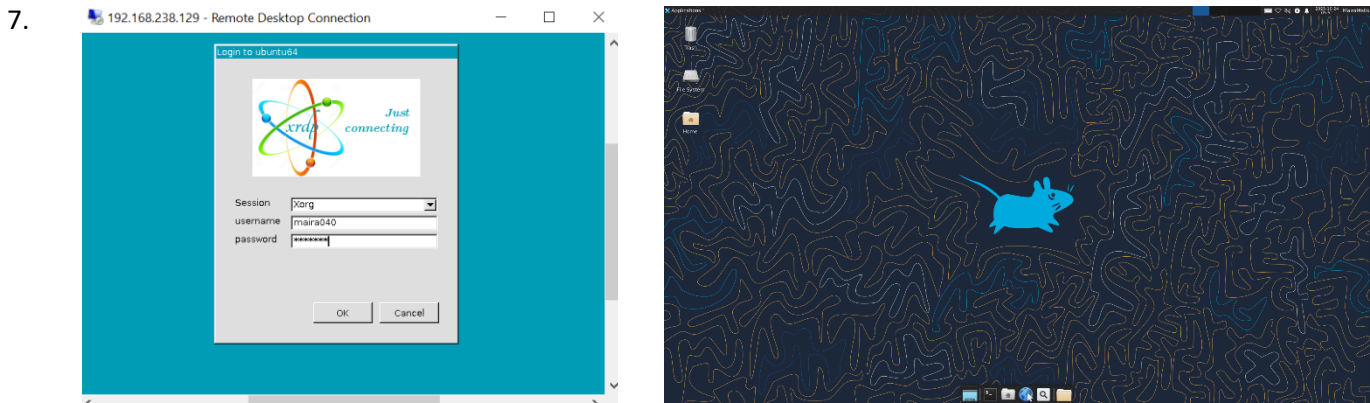
```
maira040@ubuntu64:~$ sudo systemctl enable --now xrdp
Synchronizing state of xrdp.service with SysV service script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable xrdp
maira040@ubuntu64:~$
```

5.

```
maira040@ubuntu64:~$ sudo systemctl status xrdp
● xrdp.service - xrdp daemon
     Loaded: loaded (/usr/lib/systemd/system/xrdp.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-24 05:40:57 UTC; 2min 14s ago
       Docs: man:xrdp(8)
             man:xrdp.ini(5)
   Main PID: 29058 (xrdp)
      Tasks: 1 (limit: 4548)
     Memory: 876.0K (peak: 1.5M)
        CPU: 48ms
     CGroup: /system.slice/xrdp.service
             └─29058 /usr/sbin/xrdp

Oct 24 05:40:56 ubuntu64 systemd[1]: Starting xrdp.service - xrdp daemon...
Oct 24 05:40:56 ubuntu64 xrdp[29056]: [INFO ] address [0.0.0.0] port [3389] mode 1
Oct 24 05:40:56 ubuntu64 xrdp[29056]: [INFO ] listening to port 3389 on 0.0.0.0
Oct 24 05:40:56 ubuntu64 xrdp[29056]: [INFO ] xrdp_listen_pp done
Oct 24 05:40:56 ubuntu64 systemd[1]: xrdp.service: Can't open PID file /run/xrdp/xrdp.pid (yet?) after start: No s
Oct 24 05:40:57 ubuntu64 systemd[1]: Started xrdp.service - xrdp daemon.
Oct 24 05:40:58 ubuntu64 xrdp[29058]: [INFO ] starting xrdp with pid 29058
Oct 24 05:40:58 ubuntu64 xrdp[29058]: [INFO ] address [0.0.0.0] port [3389] mode 1
Oct 24 05:40:58 ubuntu64 xrdp[29058]: [INFO ] listening to port 3389 on 0.0.0.0
Oct 24 05:40:58 ubuntu64 xrdp[29058]: [INFO ] xrdp_listen_pp done
lines 1-22/22 (END)
```

6.


```
maira040@ubuntu64:~$ echo xfce4-session > ~/.xsession
```

7.

8.

Task 6:

1.


```
maira040@ubuntu64:~$ sudo apt install lightdm lightdm-gtk-greeter -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
lightdm is already the newest version (1.30.0-0ubuntu14).
lightdm set to manually installed.
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 openjdk-21-jre openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  gnome-accessibility-themes gnome-themes-extra gnome-themes-extra-data gtk2-engines-pixbuf
The following NEW packages will be installed:
  gnome-accessibility-themes gnome-themes-extra gnome-themes-extra-data gtk2-engines-pixbuf lightdm-gtk-gree
0 upgraded, 5 newly installed, 0 to remove and 0 not upgraded.
Need to get 2,495 kB of archives.
After this operation, 7,003 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 gnome-accessibility-themes all 3.28-2ubuntu5 [2,296
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 gnome-themes-extra-data all 3.28-2ubuntu5 [69.4 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 gtk2-engines-pixbuf amd64 2.24.33-4ubuntu1.
kB]
Get:4 http://archive.ubuntu.com/ubuntu noble/main amd64 gnome-themes-extra amd64 3.28-2ubuntu5 [15.2 kB]
Get:5 http://archive.ubuntu.com/ubuntu noble/universe amd64 lightdm-gtk-greeter amd64 2.0.9-0ubuntu3 [94.3 k
Fetched 2,495 kB in 2s (1,020 kB/s)
```

```
maira040@ubuntu64:~$ sudo mkdir -p /etc/lightdm/lightdm.conf.d
at:*]\ngreeter-session=lightdm-gtk-greeter\nuser-session=xfce\nautologin-user-timeout=0" | sudo tee /etc/lightdm/li
ghtdm.conf.d/99-xfce.confecho -e "[Seat:*]\ngreeter-session=lightdm-gtk-greeter\nuser-session=xfce\nautologin-user-
timeout=0" | sudo tee /etc/lightdm/lightdm.conf.d/99-xfce.confmaira040@ubuntu64:~$ sudo mkdir -p /etc/lightdm/light
dm.conf.d
maira040@ubuntu64:~$ echo -e "[Seat:*]\ngreeter-session=lightdm-gtk-greeter\nuser-session=xfce\nautologin-user-time
out=0" | sudo tee /etc/lightdm/lightdm.conf.d/99-xfce.conf
[Seat:*]
greeter-session=lightdm-gtk-greeter
user-session=xfce
autologin-user-timeout=0
maira040@ubuntu64:~$
```

```
maira040@ubuntu64:~$ sudo rm -f /var/lib/lightdm/.Xauthority
maira040@ubuntu64:~$ sudo rm -f ~/.Xauthority
maira040@ubuntu64:~$ sudo rm -rf ~/.cache/sessions
maira040@ubuntu64:~$ sudo chown -R $USER:$USER /home/$USER
```

```
maira040@ubuntu64:~$ sudo systemctl restart lightdm
```

2.
```
maira040@ubuntu64:~$ sudo systemctl enable lightdm
 graphical.targetsudo systemctl set-default graphical.targetSynchronizing state of lightdm.service with SysV servic
e script with /usr/lib/systemd/systemd-sysv-install.
Executing: /usr/lib/systemd/systemd-sysv-install enable lightdm

The unit files have no installation config (WantedBy=, RequiredBy=, UpheldBy=,
Also=, or Alias= settings in the [Install] section, and DefaultInstance= for
template units). This means they are not meant to be enabled or disabled using systemctl.

Possible reasons for having these kinds of units are:
• A unit may be statically enabled by being symlinked from another unit's
  .wants/, .requires/, or .upholds/ directory.
• A unit's purpose may be to act as a helper for some other unit which has
  a requirement dependency on it.
• A unit may be started when needed via activation (socket, path, timer,
  D-Bus, udev, scripted systemctl call, ...).
• In case of template units, the unit is meant to be enabled with some
  instance name specified.
```

```
maira040@ubuntu64:~$ sudo reboot

Broadcast message from root@ubuntu64 on pts/1 (Fri 2025-10-24 06:02:55 UTC):

The system will reboot now!
```
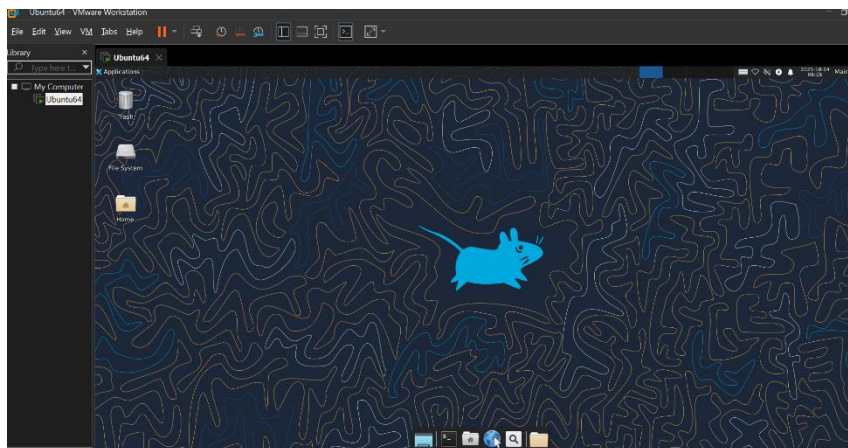


```
maira040@ubuntu64:~$ sudo systemctl set-default multi-user.target
ctl disable lightdm[sudo] password for maira040:
Sorry, try again.
[sudo] password for maira040:
Created symlink /etc/systemd/system/default.target → /usr/lib/systemd/system/multi-user.target.
```

```
maira040@ubuntu64:~$ sudo reboot

Broadcast message from root@ubuntu64 on pts/1 (Fri 2025-10-24 06:08:38 UTC):

The system will reboot now!

maira040@ubuntu64:~$ client_loop: send disconnect: Connection reset
```



```
Ubuntu 24.04.3 LTS ubuntu64 tty1

ubuntu64 login: maira040
Password:
Welcome to Ubuntu 24.04.3 LTS (GNU/Linux 6.8.0-86-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:     https://landscape.canonical.com
 * Support:        https://ubuntu.com/pro

 System information as of Fri Oct 24 06:10:25 AM UTC 2025

  System load:  1.28            Processes:             253
  Usage of /:   71.0% of 9.75GB  Users logged in:       0
  Memory usage: 8%              IPv4 address for ens33: 192.168.238.129
  Swap usage:   0%

 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
   just raised the bar for easy, resilient and secure K8s cluster deployment.

   https://ubuntu.com/engage/secure-kubernetes-at-the-edge

Expanded Security Maintenance for Applications is not enabled.

0 updates can be applied immediately.

6 additional security updates can be applied with ESM Apps.
Learn more about enabling ESM Apps service at https://ubuntu.com/esm

  maira040@ubuntu64:~$
```
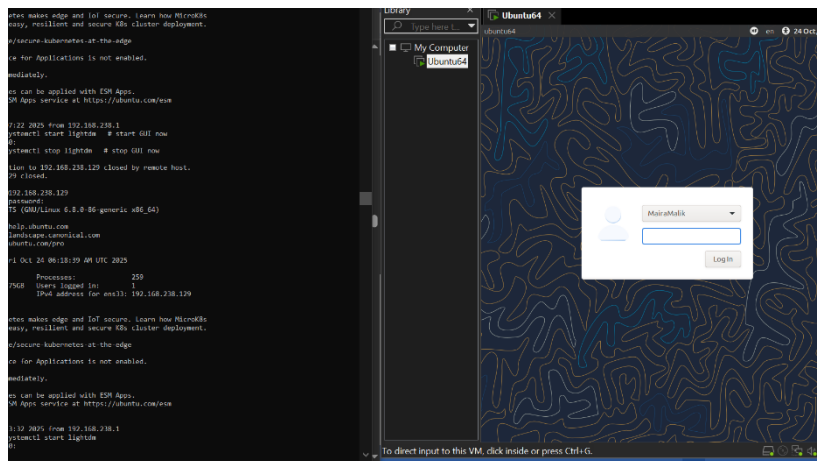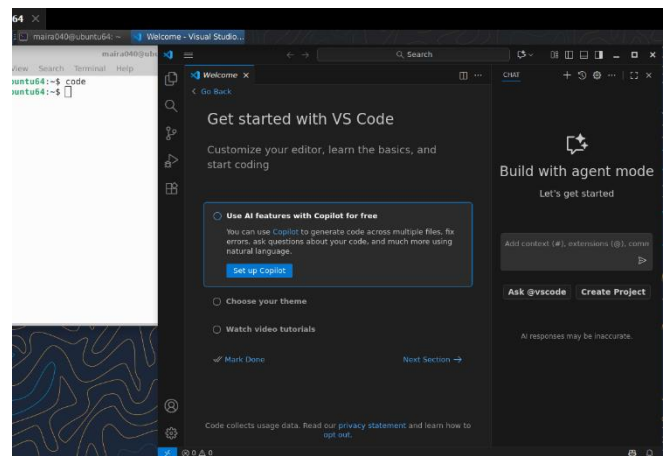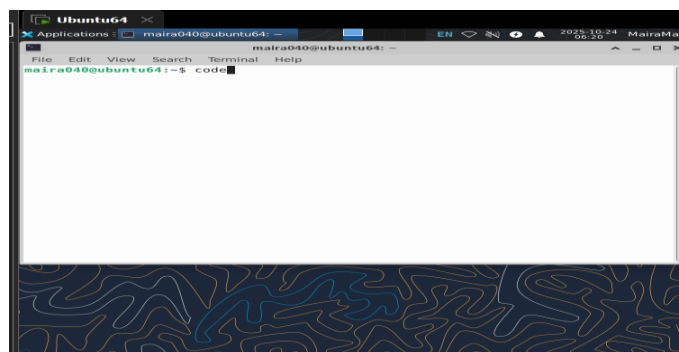
3.

4.

Task 7:

1.
```
maira040@ubuntu64:~$ sudo apt install google-chrome-stable -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
E: Unable to locate package google-chrome-stable
maira040@ubuntu64:~$
```

2.
```
maira040@ubuntu64:~$ ls -la /etc/apt
total 48
drwxr-xr-x   9 root root  4096 Oct 24 04:17 .
drwxr-xr-x 142 root root 12288 Oct 24 05:50 ..
drwxr-xr-x   2 root root  4096 Oct 24 05:04 apt.conf.d
drwxr-xr-x   2 root root  4096 Mar 31  2024 auth.conf.d
drwxr-xr-x   2 root root  4096 Mar 31  2024 keyrings
drwxr-xr-x   2 root root  4096 Aug  5 17:14 preferences.d
drwxr-xr-x   2 root root  4096 Aug  5 17:14 preferences.d.save
-rw-r--r--   1 root root    70 Sep 26 16:29 sources.list
drwxr-xr-x   2 root root  4096 Oct 24 04:27 sources.list.d
drwxr-xr-x   2 root root  4096 Aug  5 17:01 trusted.gpg.d
```

3.
```
maira040@ubuntu64:~$ cat /etc/apt/sources.list
# Ubuntu sources have moved to /etc/apt/sources.list.d/ubuntu.sources
maira040@ubuntu64:~$
```

4.
```
maira040@ubuntu64:~$ ls -la /etc/apt/sources.list.d/
total 16
drwxr-xr-x 2 root root 4096 Oct 24 06:27 .
drwxr-xr-x 9 root root 4096 Oct 24 04:17 ..
-rw-r--r-- 1 root root  533 Oct 24 06:27 ubuntu.sources
-rw-r--r-- 1 root root 2552 Aug  5 17:02 ubuntu.sources.curtin.orig
maira040@ubuntu64:~$
```

5.
```
maira040@ubuntu64:~$ cat /etc/apt/sources.list.d/ubuntu.sources
Types: deb
URIs: http://archive.ubuntu.com/ubuntu/
Suites: noble noble-updates noble-backports
Components: main restricted universe multiverse
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg

Types: deb
URIs: http://security.ubuntu.com/ubuntu/
Suites: noble-security
Components: main restricted universe multiverse
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
```

6.
```
maira040@ubuntu64:~$ cat  /etc/apt/sources.list.d/ubuntu.sources.d/ubuntu.sources
Types: deb
URIs: http://archive.ubuntu.com/ubuntu/
Suites: noble noble-updates noble-backports
Components: main restricted universe multiverse
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg

Types: deb
URIs: http://security.ubuntu.com/ubuntu/
Suites: noble-security
Components: main restricted universe multiverse
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
Types: deb
URIs:  http://dl.google.com/linux/chrome/deb/
Suites: stable
Components: main
Architectures: amd64
Signed-By: /etc/apt/keyrings/google.gpg
maira040@ubuntu64:~$
```

7.
```
maira040@ubuntu64:~$ curl -fsSL https://dl.google.com/linux/linux_signing_key.pub | sudo gpg --dearmor -o /e
tc/apt/keyrings/google.gpg
File '/etc/apt/keyrings/google.gpg' exists. Overwrite? (y/N) y
maira040@ubuntu64:~$
```

8.
```
maira040@ubuntu64:~$ sudo apt update
[sudo] password for maira040:
Sorry, try again.
[sudo] password for maira040:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Get:2 http://dl.google.com/linux/chrome/deb stable InRelease [1,825 B]
Get:3 http://archive.ubuntu.com/ubuntu noble-updates InRelease [126 kB]
Get:4 http://dl.google.com/linux/chrome/deb stable/main amd64 Packages [1,214 B]
Get:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease [126 kB]
Get:6 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Packages [1,536 kB]
Get:7 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 Components [175 kB]
Get:8 http://archive.ubuntu.com/ubuntu noble-updates/restricted amd64 Components [212 B]
Get:9 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 Components [377 kB]
Get:10 http://archive.ubuntu.com/ubuntu noble-updates/multiverse amd64 Components [940 B]
Get:11 http://archive.ubuntu.com/ubuntu noble-backports/main amd64 Components [7,164 B]
Get:12 http://archive.ubuntu.com/ubuntu noble-backports/restricted amd64 Components [212 B]
Get:13 http://archive.ubuntu.com/ubuntu noble-backports/universe amd64 Components [11.0 kB]
Get:14 http://archive.ubuntu.com/ubuntu noble-backports/multiverse amd64 Components [212 B]
Fetched 2,363 kB in 3s (823 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```
maira040@ubuntu64:~$ sudo apt install google-chrome-stable -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java libatk-wrapper-java-jni
  libgif7 openjdk-21-jre openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  fonts-liberation fonts-liberation-sans-narrow
The following NEW packages will be installed:
  fonts-liberation fonts-liberation-sans-narrow google-chrome-stable
0 upgraded, 3 newly installed, 0 to remove and 0 not upgraded.
Need to get 122 MB of archives.
After this operation, 401 MB of additional disk space will be used.
Get:1 http://dl.google.com/linux/chrome/deb stable/main amd64 google-chrome-stable amd64 141.0.7390.122-1 [120 MB]
Get:2 http://archive.ubuntu.com/ubuntu noble/main amd64 fonts-liberation all 1:2.1.5-3 [1,603 kB]
Selecting previously unselected package fonts-liberation-sans-narrow all 1:1.07.6-4 [197 kB]
(Reading database ... 180237 files and directories currently installed.)
Preparing to unpack .../fonts-liberation_1%3a2.1.5-3_all.deb ...
Unpacking fonts-liberation (1:2.1.5-3) ...
Selecting previously unselected package google-chrome-stable.
Preparing to unpack .../google-chrome-stable_141.0.7390.122-1_amd64.deb ...
Unpacking google-chrome-stable (141.0.7390.122-1) ...
Selecting previously unselected package fonts-liberation-sans-narrow.
Preparing to unpack .../fonts-liberation-sans-narrow_1%3a1.07.6-4_all.deb ...
Unpacking fonts-liberation-sans-narrow (1:1.07.6-4) ...
Setting up fonts-liberation (1:2.1.5-3) ...
Setting up fonts-liberation-sans-narrow (1:1.07.6-4) ...
Setting up google-chrome-stable (141.0.7390.122-1) ...
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/x-www-browser (x-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/gnome-www-browser (gnome-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/google-chrome (google-chrome) in auto mode
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for fontconfig (2.15.0-1.1ubuntu2) ...
Processing triggers for bamfdaemon (0.5.6+22.04.20220217-0ubuntu5) ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
maira040@ubuntu64:~$
```

9.
```
maira040@ubuntu64:~$ sudo apt remove google-chrome-stable -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 openjdk-21-jre openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following packages will be REMOVED:
  google-chrome-stable
0 upgraded, 0 newly installed, 1 to remove and 0 not upgraded.
After this operation, 396 MB disk space will be freed.
(Reading database ... 180547 files and directories currently installed.)
Removing google-chrome-stable (141.0.7390.122-1) ...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for bamfdaemon (0.5.6+22.04.20220217-0ubuntu5) ...
Rebuilding /usr/share/applications/bamf-2.index...
```

```
  GNU nano 7.2                          /etc/apt/sources.list.d/ubuntu.
Types: deb
URIs: http://archive.ubuntu.com/ubuntu/
Suites: noble noble-updates noble-backports
Components: main restricted universe multiverse
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg

Types: deb
URIs: http://security.ubuntu.com/ubuntu/
Suites: noble-security
Components: main restricted universe multiverse
Signed-By: /usr/share/keyrings/ubuntu-archive-keyring.gpg
```

```
maira040@ubuntu64:~$ sudo rm -f /etc/apt/keyrings/google.gpg
```

10.
```
maira040@ubuntu64:~$ sudo mkdir -p /etc/apt/keyrings
maira040@ubuntu64:~$ wget -qO- https://dl.google.com/linux/linux_signing_key.pub | sudo gpg --dearmor -o
/etc/apt/keyrings/google-chrome.gpg
File '/etc/apt/keyrings/google-chrome.gpg' exists. Overwrite? (y/N) y
maira040@ubuntu64:~$
```

11.
```
maira040@ubuntu64:~$ echo "deb [arch=amd64 signed-by=/etc/apt/keyrings/google-chrome.gpg] https://dl.google.com/linux/chrome/deb/ stable main" | sudo tee /etc/apt/sources.list.d/google-chrome.list
deb [arch=amd64 signed-by=/etc/apt/keyrings/google-chrome.gpg] https://dl.google.com/linux/chrome/deb/ stable main
```

12.
```
maira040@ubuntu64:~$ ls -la /etc/apt/sources.list.d/
total 20
drwxr-xr-x 2 root root 4096 Oct 24 11:05 .
drwxr-xr-x 9 root root 4096 Oct 24 04:17 ..
-rw-r--r-- 1 root root  107 Oct 24 11:10 google-chrome.list
-rw-r--r-- 1 root root  384 Oct 24 11:04 ubuntu.sources
-rw-r--r-- 1 root root 2552 Aug  5 17:02 ubuntu.sources.curtin.orig
maira040@ubuntu64:~$
```

13.

```
maira040@ubuntu64:~$ sudo mkdir -p /etc/apt/keyrings
maira040@ubuntu64:~$ curl -fsSL https://dl.google.com/linux/linux_signing_key.pub | sudo gpg --dearmor -o
    /etc/apt/keyrings/google.gpg
maira040@ubuntu64:~$
```

14.

```
maira040@ubuntu64:~$ sudo apt update
Hit:1 http://dl.google.com/linux/chrome/deb stable InRelease
Get:2 http://security.ubuntu.com/ubuntu noble-security InRelease [126 kB]
Hit:3 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Get:6 http://security.ubuntu.com/ubuntu noble-security/main amd64 Packages [1,260 kB]
Get:7 http://security.ubuntu.com/ubuntu noble-security/main Translation-en [208 kB]
Get:8 http://security.ubuntu.com/ubuntu noble-security/main amd64 Components [21.5 kB]
Get:9 http://security.ubuntu.com/ubuntu noble-security/main amd64 c-n-f Metadata [8,984 B]
Get:10 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Packages [2,069 kB]
Get:11 http://security.ubuntu.com/ubuntu noble-security/restricted Translation-en [468 kB]
Get:12 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 Components [212 B]
Get:13 http://security.ubuntu.com/ubuntu noble-security/restricted amd64 c-n-f Metadata [500 B]
Get:14 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Packages [904 kB]
Get:15 http://security.ubuntu.com/ubuntu noble-security/universe Translation-en [202 kB]
Get:16 http://security.ubuntu.com/ubuntu noble-security/universe amd64 Components [52.2 kB]
Get:17 http://security.ubuntu.com/ubuntu noble-security/universe amd64 c-n-f Metadata [19.3 kB]
Get:18 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Packages [27.4 kB]
Get:19 http://security.ubuntu.com/ubuntu noble-security/multiverse Translation-en [5,708 B]
Get:20 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 Components [212 B]
Get:21 http://security.ubuntu.com/ubuntu noble-security/multiverse amd64 c-n-f Metadata [384 B]
Fetched 5,373 kB in 10s (523 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
maira040@ubuntu64:~$
```

```
maira040@ubuntu64:~$ sudo apt install google-chrome-stable -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java
  libatk-wrapper-java-jni libgif7 openjdk-21-jre openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  google-chrome-stable
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 120 MB of archives.
After this operation, 396 MB of additional disk space will be used.
Get:1 http://dl.google.com/linux/chrome/deb stable/main amd64 google-chrome-stable amd64 141.0.7390.122-1 [120 MB]
Fetched 120 MB in 1min 13s (1,639 kB/s)
Selecting previously unselected package google-chrome-stable.
(Reading database ... 180266 files and directories currently installed.)
Preparing to unpack .../google-chrome-stable_141.0.7390.122-1_amd64.deb ...
Unpacking google-chrome-stable (141.0.7390.122-1) ...
Setting up google-chrome-stable (141.0.7390.122-1) ...
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/x-www-browser (x-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/gnome-www-browser (gnome-www-browser) in auto mode
update-alternatives: using /usr/bin/google-chrome-stable to provide /usr/bin/google-chrome (google-chrome) in auto mode
Processing triggers for gnome-menus (3.36.0-1.1ubuntu3) ...
Processing triggers for man-db (2.12.0-4build2) ...
Processing triggers for bamfdaemon (0.5.6+22.04.20220217-0ubuntu5) ...
Rebuilding /usr/share/applications/bamf-2.index...
Processing triggers for desktop-file-utils (0.27-2build1) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
maira040@ubuntu64:~$
```

Task 8:

1.

```
maira040@ubuntu64:~$ sudo add-apt-repository ppa:ubuntuhandbook1/audacity -y
[sudo] password for maira040:
Repository: 'Types: deb
URIs: https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu/
Suites: noble
Components: main
'
Description:
Unofficial build of Audacity audio editor

For help, please use Audacity forum: http://forum.audacityteam.org/

If the packages here are helpful, you may buy me a coffee:

        https://ko-fi.com/ubuntuhandbook1
More info: https://launchpad.net/~ubuntuhandbook1/+archive/ubuntu/audacity
Adding repository.
Hit:1 http://dl.google.com/linux/chrome/deb stable InRelease
Get:2 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease [18.1
Hit:3 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Get:5 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble/main amd64 Pack
Hit:6 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:7 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble/main Translatio
Hit:8 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Fetched 19.6 kB in 2s (11.6 kB/s)
Reading package lists... Done
maira040@ubuntu64:~$
```
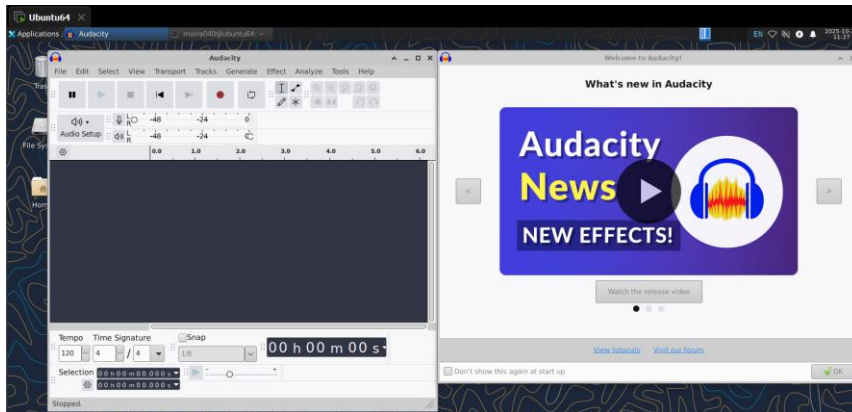
```
maira040@ubuntu64:~$ sudo apt update
Hit:1 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:4 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease
Hit:5 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:6 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```
maira040@ubuntu64:~$ sudo apt install audacity -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrap
  openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  audacity-data libdouble-conversion3 libflac++10 libid3tag0 liblilv-0-0 libmd4c0 libo
  libportsmf0t64 libqt5core5t64 libqt5dbus5t64 libqt5gui5t64 libqt5network5t64 libqt5c
  libqt5waylandcompositor5 libqt5widgets5t64 libqt5x11extras5 libsbsms10 libserd-0-0 l
  libuwxbase3.2-1t64 libuwxgtk3.2-1t64 libxcb-icccm4 libxcb-image0 libxcb-keysyms1 libx
  libxkbcommon-x11-0 libzix-0-0 qt5-gtk-platformtheme qttranslations5-l10n qtwayland5
Suggested packages:
  ladspa-plugin qgnomeplatform-qt5 qt5-image-formats-plugins qt5-qmltooling-plugins se
The following NEW packages will be installed:
  audacity audacity-data libdouble-conversion3 libflac++10 libid3tag0 liblilv-0-0 lib
  libportsmf0t64 libqt5core5t64 libqt5dbus5t64 libqt5gui5t64 libqt5network5t64 libqt5c
  libqt5waylandcompositor5 libqt5widgets5t64 libqt5x11extras5 libsbsms10 libserd-0-0 l
  libuwxbase3.2-1t64 libuwxgtk3.2-1t64 libxcb-icccm4 libxcb-image0 libxcb-keysyms1 libx
  libxkbcommon-x11-0 libzix-0-0 qt5-gtk-platformtheme qttranslations5-l10n qtwayland5
0 upgraded, 46 newly installed, 0 to remove and 0 not upgraded.
Need to get 33.0 MB of archives.
After this operation, 131 MB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble/main amd64 libflac++10 amd64 1.4.3+ds-2.
Get:2 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble/main amd6
Get:3 http://archive.ubuntu.com/ubuntu noble/universe amd64 libid3tag0 amd64 0.15.1b-
Get:4 http://archive.ubuntu.com/ubuntu noble/universe amd64 libserd-0-0 amd64 0.32.2-
Get:5 http://archive.ubuntu.com/ubuntu noble/universe amd64 libzix-0-0 amd64 0.4.2-2b
Get:6 http://archive.ubuntu.com/ubuntu noble/universe amd64 libsord-0-0 amd64 0.16.16-
Get:7 http://archive.ubuntu.com/ubuntu noble/universe amd64 libsratom-0-0 amd64 0.6.16
Get:8 http://archive.ubuntu.com/ubuntu noble/universe amd64 liblilv-0-0 amd64 0.24.22-
Get:9 http://archive.ubuntu.com/ubuntu noble/universe amd64 libopusfile0 amd64 0.12-4b
Get:10 http://archive.ubuntu.com/ubuntu noble/universe amd64 libportaudio2 amd64 19.6.
Get:11 http://archive.ubuntu.com/ubuntu noble/universe amd64 libportmidi0 amd64 1:217-
Get:12 http://archive.ubuntu.com/ubuntu noble/universe amd64 libportsmf0t64 amd64 0.1:
Get:13 http://archive.ubuntu.com/ubuntu noble/universe amd64 libsbsms10 amd64 2.3.0-1b
Get:14 http://archive.ubuntu.com/ubuntu noble/universe amd64 libsoundtouch1 amd64 2.3.
Get:15 http://archive.ubuntu.com/ubuntu noble/universe amd64 libsuil-0-0 amd64 0.10.20
Get:16 http://archive.ubuntu.com/ubuntu noble/universe amd64 libvamp-hostsdk3v5 amd64
Get:17 http://archive.ubuntu.com/ubuntu noble-updates/main amd64 libpcre2-32-0 amd64 1
Get:18 http://archive.ubuntu.com/ubuntu noble/universe amd64 libuwxbase3.2-1t64 amd64 3
12% [2 audacity-data 1,319 kB/2,671 kB 49%] [18 libuwxbase3.2-1t64 24.6 kB/899 kB 3%]
```

2.

```
maira040@ubuntu64:~$ apt list --installed | grep audacity

WARNING: apt does not have a stable CLI interface. Use with caution in scripts.

audacity-data/noble,now 3.7.5-0build1~ubuntu24.04 all [installed,automatic]
audacity/noble,now 3.7.5-0build1~ubuntu24.04 amd64 [installed]
maira040@ubuntu64:~$
```


3.

```
maira040@ubuntu64:~$ sudo add-apt-repository ppa:obsproject/obs-studio -y
[sudo] password for maira040:
Repository: 'Types: deb
URIs: https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu/
Suites: noble
Components: main
'
Description:
Latest stable release of OBS Studio
More info: https://launchpad.net/~obsproject/+archive/ubuntu/obs-studio
Adding repository.
Hit:1 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:5 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble InRelea
se [17.8 kB]
Hit:6 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRe
lease
Get:7 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble/main am
d64 Packages [1,172 B]
Get:8 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble/main Tr
anslation-en [160 B]
Hit:9 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Fetched 19.1 kB in 2s (8,014 B/s)
Reading package lists... Done
maira040@ubuntu64:~$
```

```
Reading package lists... Done
maira040@ubuntu64:~$ sudo apt update
Hit:1 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:2 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:4 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble InRelea
se
Hit:5 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:6 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRe
lease
Hit:7 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
```

```
All packages are up to date.
maira040@ubuntu64:~$ sudo apt install obs-studio -y
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer requ
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common
  libatk-wrapper-java libatk-wrapper-java-jni libgif7 openjdk-21-jre
  openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  libaacs0 libass9 libavdevice60 libavfilter9 libavformat60 libb2-1 libbdp
  libblas3 libbluray2 libbs2b0 libchromaprint1 libcjson1 libdc1394-25
  libdecor-0-0 libdecor-0-plugin-1-gtk libfdk-aac2 libfftw3-double3 libfli
  libgfortran5 libgme0 liblapack3 libluajit-5.1-2 libluajit-5.1-common
  libmbedcrypto7t64 libmbedtls14t64 libmbedx509-1t64 libmysofa1 libnorm1t6
  libopenal-data libopenal1 libopenmpt0t64 libpgm-5.3-0t64 libplacebo338
  libpocketsphinx3 libpostproc57 libqrcodegencpp1 libqt6core6t64 libqt6dbu
  libqt6gui6t64 libqt6network6t64 libqt6opengl6t64 libqt6qml6 libqt6qmlmod
  libqt6quick6 libqt6svg6 libqt6waylandclient6 libqt6waylandcompositor6
  libqt6waylandeglclienthwintegration6 libqt6waylandeglcompositorhwintegra
```

4.

```
No VM guests are running outdated hy
maira040@ubuntu64:~$ obs --version
OBS Studio - 32.0.0
maira040@ubuntu64:~$
```

Task 9:

1.

2.

```
maira040@ubuntu64:~$ mkdir -p ~/lab5
maira040@ubuntu64:~$ cd ~/lab5
maira040@ubuntu64:~/lab5$ pwd
/home/maira040/lab5
maira040@ubuntu64:~/lab5$
```

3.

```
Ubuntu64  ✕

apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
```

4.

```
maira040@ubuntu64:~/lab5$ ls -la
total 12
drwxrwxr-x  2 maira040 maira040 4096 Oct 24 11:53 .
drwxr-x--- 24 maira040 maira040 4096 Oct 24 11:53 ..
-rw-rw-r--  1 maira040 maira040  170 Oct 24 11:53 k8s-sample.yaml
maira040@ubuntu64:~/lab5$
```

Task 10:

1.

```
maira040@ubuntu64:~/lab5$ cat k8s-sample.yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
maira040@ubuntu64:~/lab5$
```

3.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
temp: do-not-keep
~
~
~
```

```
maira040@ubuntu64:~/lab5$ cat k8s-sample.yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
maira040@ubuntu64:~/lab5$
```

Task 11:

1&2:

```
"k8s-sample.yaml" 13L, 199B written
maira040@ubuntu64:~/lab5$ cat k8s-sample.yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
maira040@ubuntu64:~/lab5$
```

3.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
```

```
"k8s-sample.yaml" 13L, 199B written
maira040@ubuntu64:~/lab5$ cat k8s-sample.yaml
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
maira040@ubuntu64:~/lab5$
```

4.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
~
~
```

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
~
```

Task 12:

1 & 2.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
```

```
~
~
~
~
search hit BOTTOM, continuing at TOP
<
```

3.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
~
```

4.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
  new: nginx1
  nginx2
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
```

5.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
  new: nginx1
  nginx2
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
```

6.

```
apiVersion: v1
kind: Pod
metadata:
  name: webapp-pod
  new: webapp1
  webapp2
annotations:
  lab: lesson11
spec:
  containers:
  - name: webapp
    image: webapp:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
```

7.

```
apiVersion: v1
kind: Pod
metadata:
  name: nginx-pod
  new: nginx1
  nginx2
annotations:
  lab: lesson11
spec:
  containers:
  - name: nginx
    image: nginx:1.19
    ports:
    - containerPort: 80
  restartPolicy: Always
~
```

Exam Evaluation Question:

1.
```
maira040@ubuntu64:~/lab5$ sudo apt update && sudo apt upgrade -y
[sudo] password for maira040:
Hit:1 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:2 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Hit:3 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:4 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:5 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:6 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble InRelease
Hit:7 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
Calculating upgrade... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java libatk-
  openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
Get more security updates through Ubuntu Pro with 'esm-apps' enabled:
  libzvbi-common libcjson1 libavdevice60 libpostproc57 libavcodec60
  libzvbi0t64 libavutil58 libswscale7 libswresample4 7zip libavformat60
  libavfilter9
Learn more about Ubuntu Pro at https://ubuntu.com/pro
0 upgraded, 0 newly installed, 0 to remove and 0 not upgraded.
maira040@ubuntu64:~/lab5$
```

2.
```
maira040@ubuntu64:~$ sudo apt install ca-certificates curl gnupg apt-transport-https software-propertie
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
ca-certificates is already the newest version (20240203).
ca-certificates set to manually installed.
curl is already the newest version (8.5.0-2ubuntu10.6).
curl set to manually installed.
gnupg is already the newest version (2.4.4-2ubuntu17.3).
gnupg set to manually installed.
software-properties-common is already the newest version (0.99.49.3).
software-properties-common set to manually installed.
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-java libatk-w
  openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following NEW packages will be installed:
  apt-transport-https
0 upgraded, 1 newly installed, 0 to remove and 0 not upgraded.
Need to get 3,970 B of archives.
After this operation, 36.9 kB of additional disk space will be used.
Get:1 http://archive.ubuntu.com/ubuntu noble-updates/universe amd64 apt-transport-https all 2.8.3 [3,97
Fetched 3,970 B in 1s (5,957 B/s)
Selecting previously unselected package apt-transport-https.
(Reading database ... 184633 files and directories currently installed.)
Preparing to unpack .../apt-transport-https_2.8.3_all.deb ...
Unpacking apt-transport-https (2.8.3) ...
Setting up apt-transport-https (2.8.3) ...
Scanning processes...
Scanning linux images...

Running kernel seems to be up-to-date.

No services need to be restarted.

No containers need to be restarted.

No user sessions are running outdated binaries.

No VM guests are running outdated hypervisor (qemu) binaries on this host.
maira040@ubuntu64:~$
```

3.
```
maira040@ubuntu64:~$ sudo install -m 0755 -d /etc/apt/keyrings
maira040@ubuntu64:~$ curl -fsSL https://download.docker.com/linux/ubuntu/gpg | sudo gpg --dearmor -o /etc/apt/keyrings/docker.gpg
```

```
chmod: cannot access '/etc/apt/keyrings/docker/gpg': No such file o
maira040@ubuntu64:~$ sudo chmod a+r /etc/apt/keyrings/docker.gpg
maira040@ubuntu64:~$
```

4.
```
maira040@ubuntu64:~$ sudo chmod a+r /etc/apt/keyrings/docker.gpg
maira040@ubuntu64:~$ echo \
> "deb [arch=$(dpkg --print-architecture) signed-by=/etc/apt/keyrings/docker.gpg] \
> https://download.docker.com/linux/ubuntu \
> noble stable | \
> sudo tee /etc/apt/sources.list.d/docker.list > /dev/null
```

5.
```
maira040@ubuntu64:~$ sudo apt update
Get:1 https://download.docker.com/linux/ubuntu noble InRelease [48.5 kB]
Hit:2 http://archive.ubuntu.com/ubuntu noble InRelease
Hit:3 http://dl.google.com/linux/chrome/deb stable InRelease
Hit:4 http://archive.ubuntu.com/ubuntu noble-updates InRelease
Get:5 https://download.docker.com/linux/ubuntu noble/stable amd64 Packages [33.3 kB]
Hit:6 http://archive.ubuntu.com/ubuntu noble-backports InRelease
Hit:7 http://security.ubuntu.com/ubuntu noble-security InRelease
Hit:8 https://ppa.launchpadcontent.net/obsproject/obs-studio/ubuntu noble InRelease
Hit:9 https://ppa.launchpadcontent.net/ubuntuhandbook1/audacity/ubuntu noble InRelease
Fetched 81.7 kB in 1s (54.8 kB/s)
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
All packages are up to date.
maira040@ubuntu64:~$
```

6.

```
maira040@ubuntu64:~$ sudo apt install docker-ce docker-ce-cli container.io docker-buildx-plugin docker-compose-plugin -y
```

```
maira040@ubuntu64:~$ sudo apt install docker-ce docker-ce-cli containerd.io docker-buildx-p
Reading package lists... Done
Building dependency tree... Done
Reading state information... Done
The following packages were automatically installed and are no longer required:
  ca-certificates-java default-jre-headless fonts-dejavu-extra java-common libatk-wrapper-j
  openjdk-21-jre-headless
Use 'sudo apt autoremove' to remove them.
The following additional packages will be installed:
  docker-ce-rootless-extras libslirp0 pigz slirp4netns
Suggested packages:
  cgroupfs-mount | cgroup-lite docker-model-plugin
The following NEW packages will be installed:
  containerd.io docker-buildx-plugin docker-ce docker-ce-cli docker-ce-rootless-extras dock
0 upgraded, 9 newly installed, 0 to remove and 0 not upgraded.
Need to get 105 MB of archives.
After this operation, 437 MB of additional disk space will be used.
Get:1 https://download.docker.com/linux/ubuntu noble/stable amd64 containerd.io amd64 1.7.2
Get:2 http://archive.ubuntu.com/ubuntu noble/universe amd64 pigz amd64 2.8-1 [65.6 kB]
Get:3 http://archive.ubuntu.com/ubuntu noble/main amd64 libslirp0 amd64 4.7.0-1ubuntu3 [63.
Get:4 http://archive.ubuntu.com/ubuntu noble/universe amd64 slirp4netns amd64 1.2.1-1build2
Get:5 https://download.docker.com/linux/ubuntu noble/stable amd64 docker-ce-cli amd64 5:28.
Get:6 https://download.docker.com/linux/ubuntu noble/stable amd64 docker-ce amd64 5:28.5.1-
Get:7 https://download.docker.com/linux/ubuntu noble/stable amd64 docker-buildx-plugin amd6
Get:8 https://download.docker.com/linux/ubuntu noble/stable amd64 docker-ce-rootless-extras
Get:9 https://download.docker.com/linux/ubuntu noble/stable amd64 docker-compose-plugin amd
89% [9 docker-compose-plugin 3,293 kB/14.3 MB 23%]
```

7.

```
maira040@ubuntu64:~$ docker --version
Docker version 28.5.1, build e180ab8
maira040@ubuntu64:~$ _
```

```
maira040@ubuntu64:~$ docker --version
Docker version 28.5.1, build e180ab8
maira040@ubuntu64:~$ sudo systemctl status docker
[sudo] password for maira040:
● docker.service - Docker Application Container Engine
     Loaded: loaded (/usr/lib/systemd/system/docker.service; enabled; preset: enabled)
     Active: active (running) since Fri 2025-10-24 12:44:04 UTC; 23min ago
TriggeredBy: ● docker.socket
       Docs: https://docs.docker.com
   Main PID: 4156 (dockerd)
      Tasks: 9
     Memory: 21.0M (peak: 22.1M)
        CPU: 827ms
     CGroup: /system.slice/docker.service
             └─4156 /usr/bin/dockerd -H fd:// --containerd=/run/containerd/containerd.sock

Oct 24 12:44:03 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:03.893195220Z" level=info msg="detected 127.0.0.53 nameserver, ass
Oct 24 12:44:03 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:03.939314065Z" level=info msg="Creating a containerd client" addre
Oct 24 12:44:03 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:03.978991226Z" level=info msg="Loading containers: start."
Oct 24 12:44:04 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:04.455923820Z" level=info msg="Loading containers: done."
Oct 24 12:44:04 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:04.483921408Z" level=info msg="Docker daemon" commit=f8215cc conta
Oct 24 12:44:04 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:04.484074249Z" level=info msg="Initializing buildkit"
Oct 24 12:44:04 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:04.516882572Z" level=info msg="Completed buildkit initialization"
Oct 24 12:44:04 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:04.552561365Z" level=info msg="Daemon has completed initialization
Oct 24 12:44:04 ubuntu64 systemd[1]: Started docker.service - Docker Application Container Engine.
Oct 24 12:44:04 ubuntu64 dockerd[4156]: time="2025-10-24T12:44:04.554477667Z" level=info msg="API listen on /run/docker.sock"
lines 1-22/22 (END)
```