

# **C2110 *UNIX and programming***

## **Lesson 4 / Module 1**

**PS / 2020 Distance form of teaching: Rev1**

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# Desktop Environment

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- **GNOME**
- **Standard Applications**
- **Command Line**
- **Scientific and Technical Applications**

# GNOME - Standard Applications



<b>Firefox</b>	firefox	Web browser
<b>LibreOffice</b>	libreoffice	Text editor (Writer), spreadsheet (Calc) presentation (Impress)
<b>Gimp</b>	gimp	raster graphics editor
<b>Inkscape</b>	inkscape	vector graphics editor
<b>Okular</b>	okular	PDF document viewer

↑  
the name of the command that starts the application on the command line

# Customize Quick Access

The image illustrates the process of customizing the Quick Access menu in Ubuntu. It is divided into three panels:

- Panel 1:** Shows the terminal icon in the dock. A context menu is open, and the "Add to Favorites" option is circled in blue.
- Panel 2:** Shows the LibreOffice Writer icon in the dock. A context menu is open, and the "Remove from Favorites" option is circled in blue.
- Panel 3:** Shows the Settings application with the "Dock" section selected. The "Auto-hide the Dock" toggle is turned ON. A blue arrow points from the "Remove from Favorites" option in the second panel to the Settings window.

# Exercise 1

1. Create a remote VNC session on a WOLF cluster (see separate presentation). Start the VNC server with the option **--fullgui**.
2. Run the program Gimp using the GNOME menu. In the program, draw a house with only one stroke. Fill the resulting triangles with different colors.
3. Run the program Inkscape. Draw the flag of the Czech Republic in the program. Try to estimate the fundamental difference between the programs Inkscape and Gimp.
4. Run the program LibreOffice. Display the sine function in the range 0 to 360° in the spreadsheet.

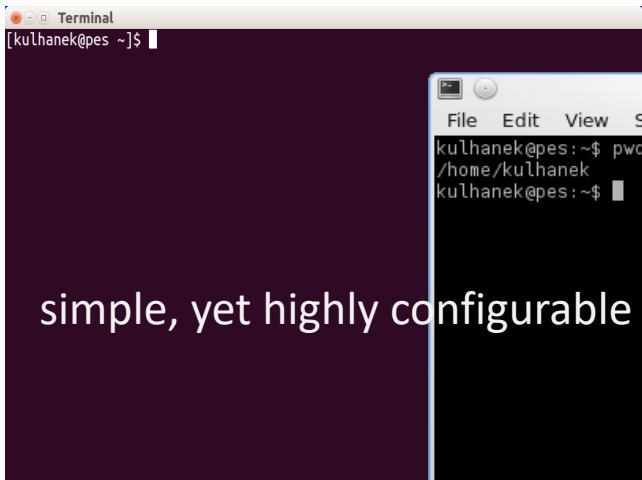
# Terminals

The command line is accessible directly from text terminals. In the X11 graphical environment, it is necessary to run a suitable application emulating a text terminal:

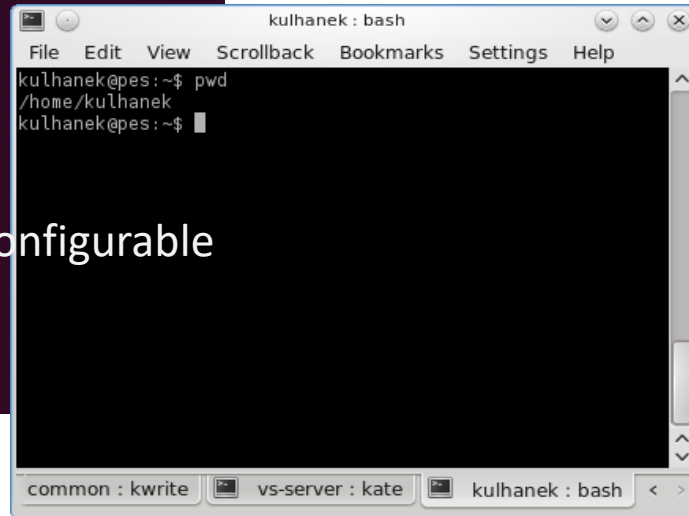
- **gnome-terminal (Terminal)**
- **console (console)**
- **xterm (XTerm)**

The default directory is: **/home/username**

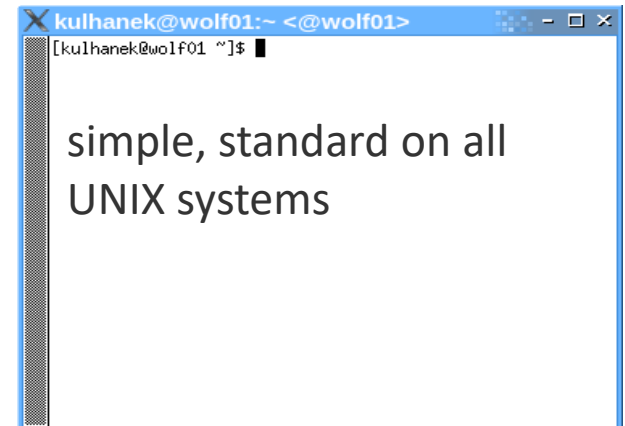
## gnome terminal



## console

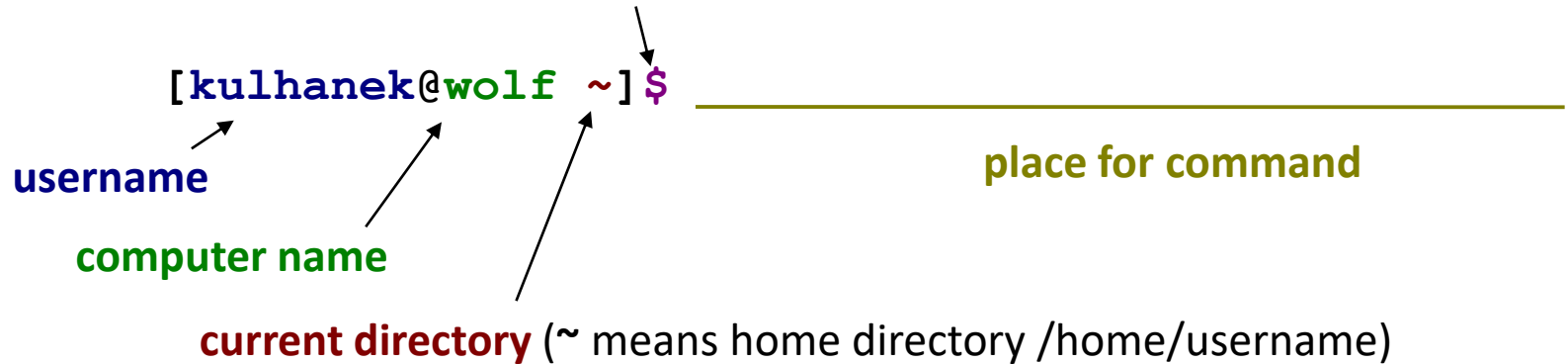


## xterm



# Command Line

Prompt - type of user / prompt (\$ regular user, # super user, other possible %, >)



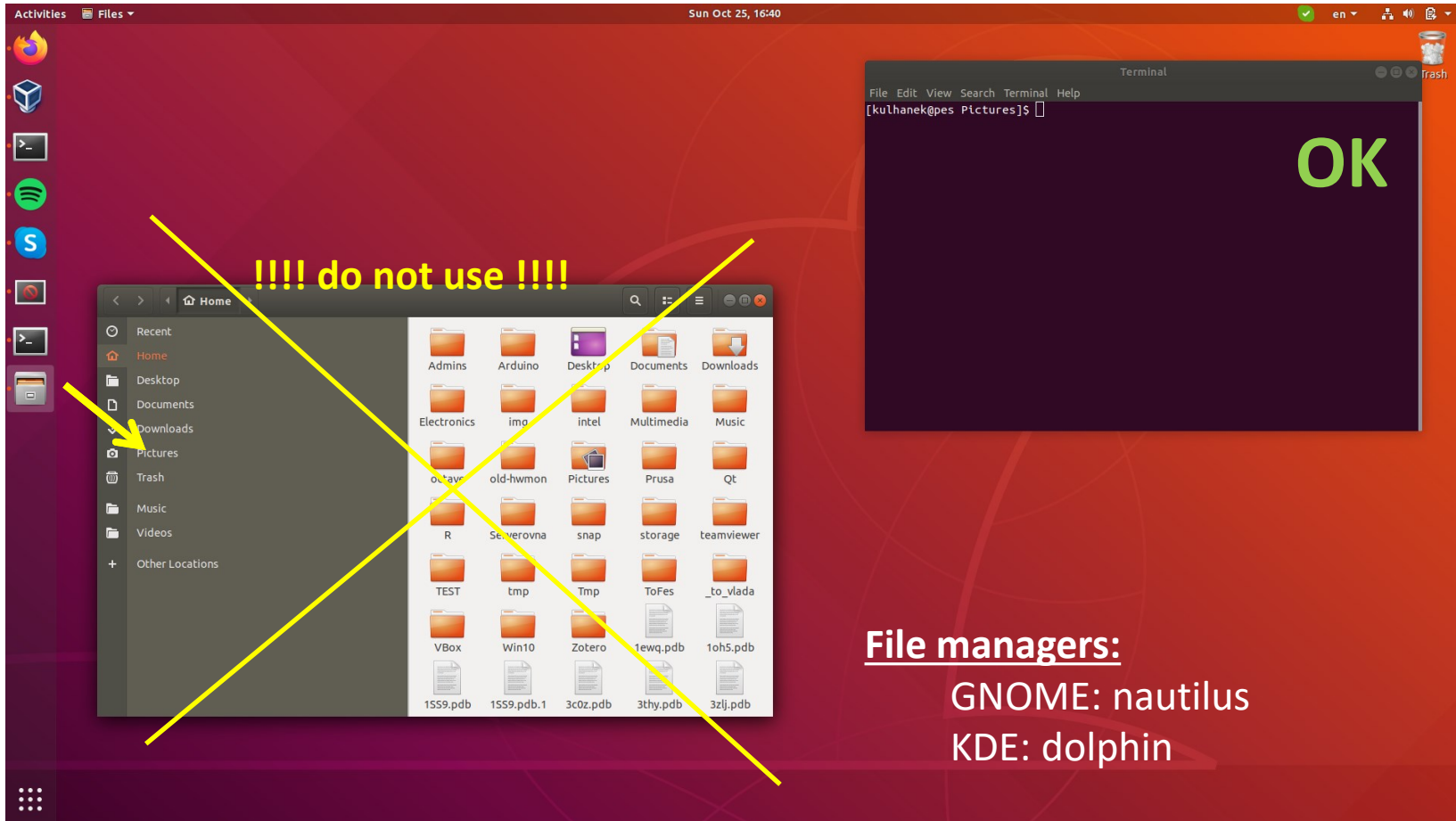
The command is executed by pressing a key **Enter**.

**History:** Use the up and down arrow keys to scroll through the list of commands you have already entered. Command from history can be reused or modified and the modified one used. The history is also accessible by command **history**.

**Autocomplete:** by pressing the Tab key the command line interpreter tries to complete the spelled word. Command names, paths and file names are added (if one press does not cause anything, there are more options for completion, repeated press will display them).

**Copying text:** Do not use Ctrl + C! To copy text from the terminal, just highlight the text, press the mouse wheel to paste it (mouse middle button).

# File Manager



!!!! do not use !!!!

Terminal

```
File Edit View Search Terminal Help  
[kulhanek@pes Pictures]$
```

OK

**File managers:**  
GNOME: nautilus  
KDE: dolphin

Graphical interfaces are usually not available in supercomputer centers.

During exercises, unless stated otherwise,  
**use only the command line.**

**Hard training, easy battle.**



# Scientific and Technical Applications

**Scientific and technical applications**, which are installed in several versions (application version, compilation type, parallel version), are available in the form **modules**. Before using the application, the relevant module must be activated.

**Overview of available applications:**

`$ module`

is entered on the command line, text is typed without \$ sign

**Overview of available module versions:**

`$ module versions vmd`

the version number is separated from the module name by a colon

**Module documentation:**

`$ module help vmd`

**Module activation:**

`$ module add vmd`

`$ module add vmd: 1.9.0`

**Launch the application from the module vmd**

`$ vmd`

activates the default version of the module

module and application names do not have to be the same

# Exercise 2

1. Open a terminal in the GNOME GUI on a WOLF cluster. Try **gnome-terminal (Terminal)**, **konsole (Konsole)**, **xterm (Xterm)**. Choose one for further work.
2. Run the **Inkscape** program from the terminal. Type "**inkscape**" into the terminal and press Enter.
3. What happens if you type "**Inkscape**"?
4. View all available modules.
5. What is the module **vmd** for?
6. With program vmd, open the file **struktura.pdb** (L2.M4.C2.U1).
7. What is the module **Nemesis** for?
8. Activate module "**Nemesis**" and run the program **nemesis**.
9. In the program, model an acetic acid molecule and optimize its geometry.

# Exercise 3

1. Open a new terminal in the GNOME GUI on the WOLF cluster.
1. Print the contents of the variable **PATH** (echo \$PATH).
2. Print directories in **PATH** on individual lines.
3. Is application **Nemesis** available in the terminal (**type, which**)?
4. Add a module **Nemesis**.
5. Write the contents of the variable **PATH**.
6. In which directory is the application **Nemesis** located?