

# Computer practicum I 2022/2023

## Assignment 2 - Linux and Bash

Write down the commands you would use for the following tasks. If needed, submit the Bash script as well.

*When writing solutions to the tasks, **use a font that writes all letters with the same width** (e.g. courier new or consolas).*

*Submit homework solutions in **one PDF document** named **name\_surname.pdf** via e-classroom by the deadline specified in the classroom. Additionally, where needed submit Bash scripts as well. Also, don't forget to **write your name in the document itself**!*

*The answers to each question should be clearly marked.*

### Question 1)

**(30 points)**

Loti got a new job, but she is a bit lost, so she needs your help. Her boss who does not know her way around the PC, gave Loti access to her computer to do the following tasks:

#### Tasks:

1. Create a new folder named `photos`
2. Find all `jpg` and `jpeg` and `png` files on her computer and copy them to a folder `photos`
3. Delete all the `png` files in the new folder `photos` (created in task 1)
4. Compress the folder `photos` to a file `photos_personal.gz` and remove the original folder
5. Save history of commands to a file `name_surname_task1.txt`

For submission, submit all commands used for the above exercise.

### Question 2)

**(30 points)**

Text processing, analysis and interaction with the user is very common in Linux. With this in mind, write an executable interactive script for analysis of a `csv` file about user expenses and income, that can be found here:

[https://raw.githubusercontent.com/Marina225/CP1/main/expenses\\_people.csv](https://raw.githubusercontent.com/Marina225/CP1/main/expenses_people.csv)

To complete this exercise, follow the following tasks.

#### Tasks:

1. Create a shell script (`name_surname_task2.sh`) that can be executed and read by anyone and edited only by the owner.
2. Sort the file by the *Income* column in ascending order and save to a new file `~/ordered_expenses.txt`.
3. Ask for the username they are interested in and extract the expenses and income for a selected user.
  - If the username requested is not found in the file, inform them "*the name cannot be found*" and exit the programme with an error message
4. Ask if they are interested to know how often a certain pattern occurs in the file
  - a. If "yes" is selected: ask them for a pattern they are interested in and count the number of its occurrences in the file
  - b. If "no" is selected: say goodbye and exit the program

For submission, submit the script `name_surname_task2.sh`.

### Question 3)

(30 points)

Peter has been given an assignment by his Professor to strip the links and the text name from the HTML pages.

A html link is of the form,

```
<a href="http://vocabulary.famnit.upr.si">Vocabulary Training</a>
```

Where `a` is the tag and `href` is an attribute which holds the link Peter is interested in. The text name is "Vocabulary Training". Peter notices that the text name can sometimes be hidden within multiple tags

```
<a href="http://vocabulary.famnit.upr.si"><h1><b>Vocabulary Training</b></h1></a>
```

Here, the text name is hidden inside the tags `h1` and `b`.

Help Peter in listing all the links and the text name of the links. Implement a bash script with regex for this task.

#### Input Format

The first line contains the number of lines in the fragment (`N`). This is followed by `N` lines from a valid HTML document or fragment.

#### Output Format

If there are `M` links in the document, display each of them in a new line. The link and the text name must be separated by a "," (comma) with no spaces between them.

Strip out any extra spaces at the start and end position of both the link and the text name before printing.

```
link-1, text name-1
```

```
link-2, text name-2
```

• • • •

```
link-n,text name-M
```

Sample Input:1

```
<p><a href="http://www.quackit.com/html/tutorial/html_links.cfm">Example  
Link</a></p>
```

```
<div class="more-info"><a
href="http://www.quackit.com/html/examples/html_links_examples.cfm">More
Link Examples...</a></div>
```

### Sample Output:1

`http://www.quackit.com/html/tutorial/html_links.cfm`, Example Link

[http://www.quackit.com/html/examples/html\\_links\\_examples.cfm](http://www.quackit.com/html/examples/html_links_examples.cfm), More Link Examples...

### Question 4)

**(10 points)**

“Cowsay” is a configurable talking/thinking cow, originally written in Perl by Tony Monroe. It's a package that prints different figures into the terminal as a combination of many symbols and letters.

< This message was printed by cowsay >

[illegible]

<https://github.com/nuwanarti/cowsay.git>

The script should do the following:

- [illegible]