1 – Webové technologie

HTML

```
<!DOCTYPE html>
<html lang="cs">

<head>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <title>Matematická analýza</title>
  <link rel="stylesheet" href="styles.css">
</head>

<body>
  <h1>Matematická analýza</h1>

  <p>
    <strong>Matematická analýza</strong> je jednou ze základních disciplín matematiky.
    Jejími základními pojmy jsou
  </p>

  <ul class="indented">
    <li><a href="/funkce.html" target="_blank">funkce</a>,</li>
    <li>limita (posloupností a funkcí)</li>
    <li>a integrál.</li>
  </ul>

  <blockquote>
    <p>Podstata matematiky spočívá v její svobodě.</p>
  </blockquote>
  <p>
    -Georg Cantor,
    <cite>
      Gentzens Problem: Mathematische Logik im nationalsozialistischen Deutschland
    </cite>
  </p>

  <script src="scripts.js"></script>
</body>

</html>
```

CSS

```
p {
    line-height: 180%;
    text-align: justify;
}

strong {
    color: #000099;
}

ul.indented {
    padding-left: 2rem;
```
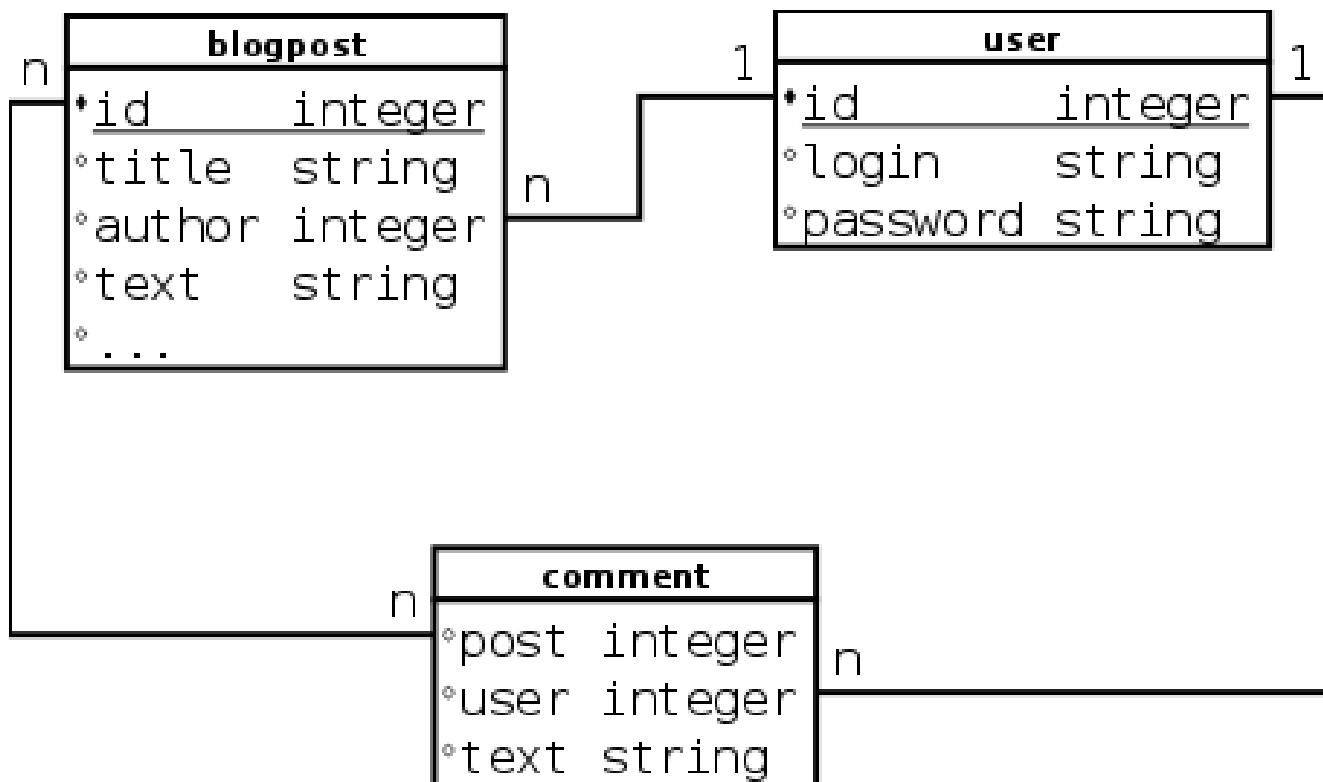
```css
}

a:link, a:visited, a:active {
    text-decoration: none;
}
a:hover {
    color: red;
    text-decoration: underline;
}
a:link {
    color: blue;
}
a:visited {
    color: magenta;
}

@media print {
    a {
        color: black;
        text-decoration: underline;
    }
}
```

2 – Databáze a SQL

```
blogpost
*id       integer
°title    string
°author   integer
°text     string
° ...
```

```
user
*id         integer
°login      string
°password   string
```

```
comment
°post  integer
°user  integer
°text  string
```

n   1   1

n

n   n

```
SELECT
        title
        FROM blogpost

SELECT
        id, title
        FROM blogpost
        WHERE author = 11

SELECT
        text, login
        FROM comment JOIN user ON comment.user = user.id
        WHERE post = 17
```

Bug 936906 - Should be able to set devicePixelRatio using JavaScript

Status:	UNCONFIRMED		**Reported:**	2013-11-10 08:49 PST by Liam Wilson
Whiteboard:			**Modified:**	2013-11-10 13:00 PST (History)
Keywords:			**CC List:**	3 users (show)
Product:	Firefox for Android (show info)		**See Also:**	
Component:	Graphics, Panning and Zooming (show other bugs) (show info)			
Version:	Firefox 25		**Crash Signature:**	
Platform:	ARM Android		**Project Flags:**	
			Tracking Flags:	
Importance:	-- normal (vote)			
Target Milestone:	---			
Assigned To:	Nobody; OK to take it and work on it			
QA Contact:				
URL:				
Depends on:	737090			
Blocks:				
	Show dependency tree / graph			

Attachments

canvas_banding_example.html (1.09 KB, text/html)
2013-11-10 08:49 PST, Liam Wilson   *no flags*   Details

Summon comment box

Liam Wilson   2013-11-10 08:49:56 PST   Description

```
Created attachment 829877 [details]
canvas_banding_example.html

User Agent: Mozilla/5.0 (X11; Ubuntu; Linux x86_64; rv:25.0) Gecko/20100101 Firefox/25.0 (Beta/Release)
Build ID: 20131028113308

Steps to reproduce:

Created test webpage (see attached). It attempts to create and display a Canvas with a width and
height set exactly to the native resolution of the window. It does this using a meta viewport trick
(injects some HTML in to the head of the document setting "initial-scale" to
1/window.devicePixelRatio).

Actual results:

On my Nexus 7 (2012). It created a canvas of 853x469 (landscape). That is the wrong resolution (should
be 1280*something). The example above sets the correct resolution in Chrome Android (but it too has
banding artifacts suggesting something is still off, see: http://code.google.com/p/chromium/issues
/detail?id=317175)

Expected results:

Should be able to create a Canvas which is exactly the same resolution as the native window. I've read
lots of blog posts about this. They all contain horrible hacks that attempt to fix the problem (as
does my example). All of these hacks don't quite work (like doing
canvas.width=screen.width*window.devicePixelRatio, this cannot work right because screen.width is
something like Math.round(realwidth/window.devicePixelRatio))

It occurs to me that all these hacks would be unnecessary if I could just go window.devicePixelRatio=1
```

Kartikaya Gupta (email:kats@mozilla.com)   2013-11-10 09:50:07 PST   Comment 1

```
This is more or less a dupe of bug 737090; the target-densitydpi meta-viewport attribute handled this
use case but for reasons that are not really clear it was removed. It would probably be worthwhile to
restart the discussion on the W3C mailing lists to bring this back or at least bring back some
suitable replacement.
```

Liam Wilson   2013-11-10 13:00:04 PST   Comment 2

…

3 – Zpracování aritmetického výrazu

$3 \cdot (1 + 2)$

$3\ 1\ 2 + \cdot$

$\cdot\ 3 + 1\ 2$

E → F + E

E → F

F → N * F

F → N

N → *číslo*

N → *proměnná*

Internet

Router

Server

WiFi Router

Switch

Switch

IP Phone

IP Phone

Desktop PC

Desktop PC

Scanner

Printer

Smartphone

Laptop PC

Laptop PC

Ring

PC

PC

PC

PC
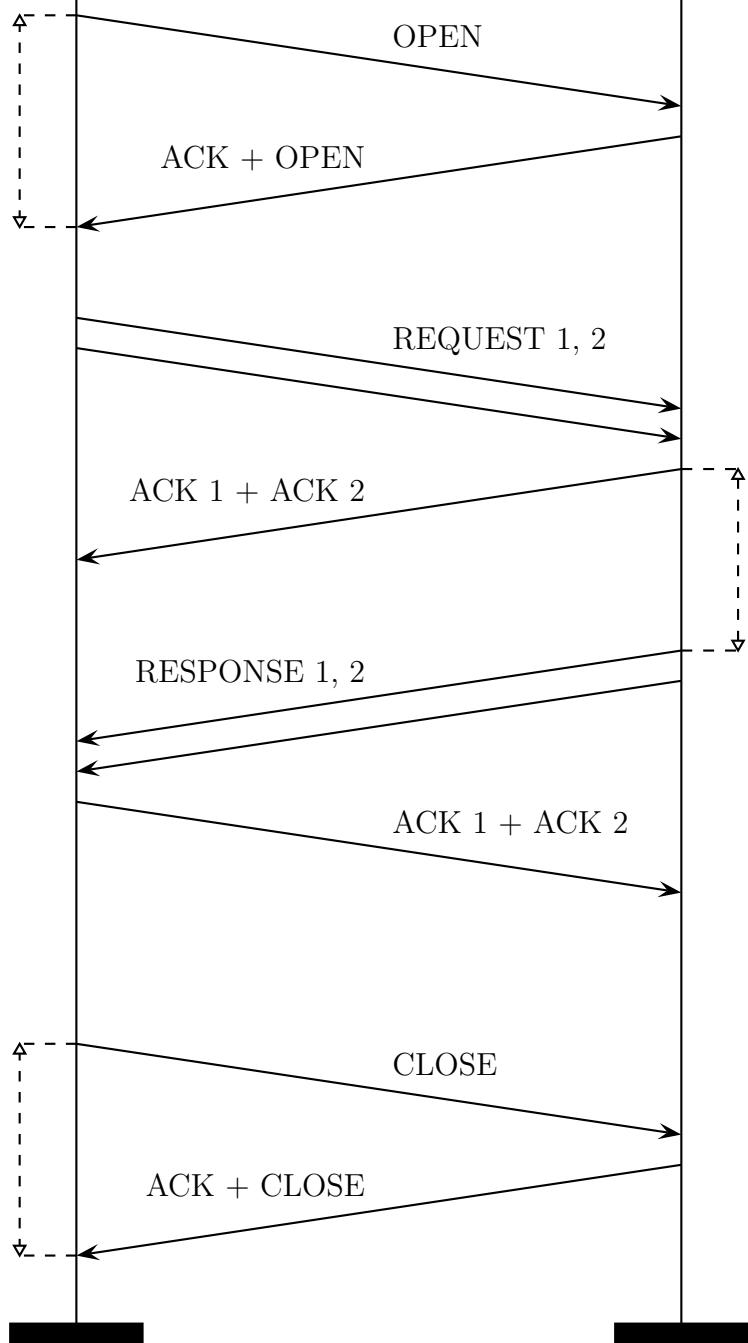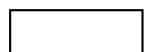
4 – Síťová komunikace

Klient   Server

OPEN

ACK + OPEN

REQUEST 1, 2

ACK 1 + ACK 2

RESPONSE 1, 2

ACK 1 + ACK 2

CLOSE

ACK + CLOSE

4 – Síťová komunikace

Klient

```python
import socket

def say_hello():
    with socket.socket(socket.AF_INET, socket.SOCK_STREAM) as echo_socket:
        echo_socket.connect(('127.0.0.1', 4242))

        echo_socket.sendall(b"Hello, world!")

if __name__ == "__main__":
    say_hello()
```

Server

```python
import socket

def start_server():
    server_socket = socket.socket(socket.AF_INET, socket.SOCK_STREAM)
    server_socket.bind(('0', 4242))
    server_socket.listen()

    while True:
        client_socket, client_address = server_socket.accept()

        with client_socket:
            while True:
                line = client_socket.recv(1024).decode('utf-8')

                if not line:
                    break

                print(f"Client {client_address} said: {line}")

if __name__ == "__main__":
    start_server()
```
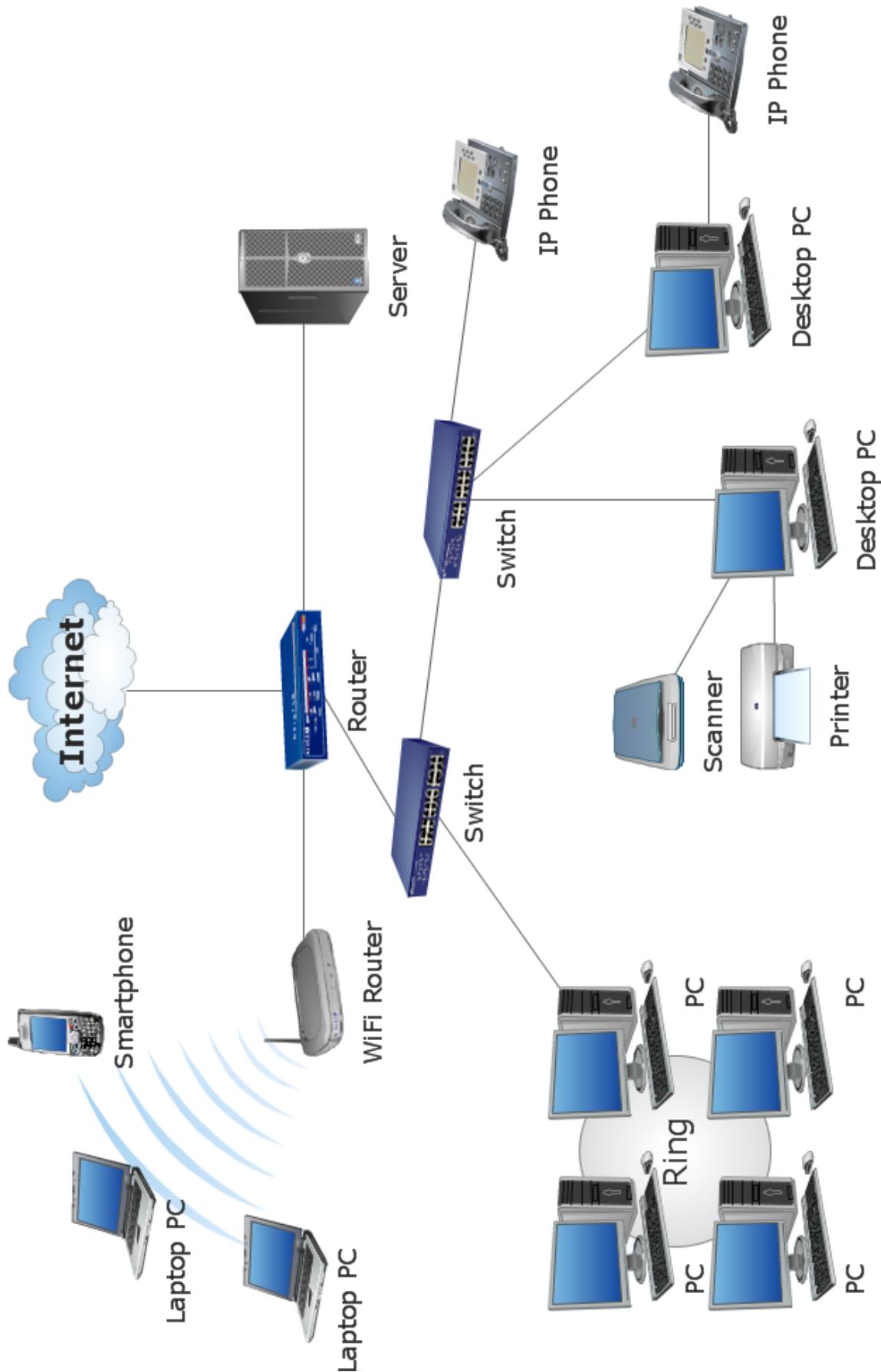
5 – Adresování na Internetu

5 – Adresování na Internetu

```
$TTL 3600
example.org. IN SOA ns1.example.org. admin.example.org. (
    2014051301 ; Serial
    10800      ; Refresh
    3600       ; Retry
    604800     ; Expire
    300        ; Negative Response TTL
)


IN NS ns1.example.org.
IN NS ns2.example.org.


IN MX 10 mail.example.org.
IN MX 20 mail2.exampe.org.


ns1    IN A     192.168.1.2
ns2    IN A     192.168.1.3

mail   IN A     192.168.1.4
mail2  IN CNAME  ns2

www    IN A     192.168.1.6
ftp    IN CNAME  www


john   IN A     192.168.1.21
daniel IN A     192.168.1.22
```
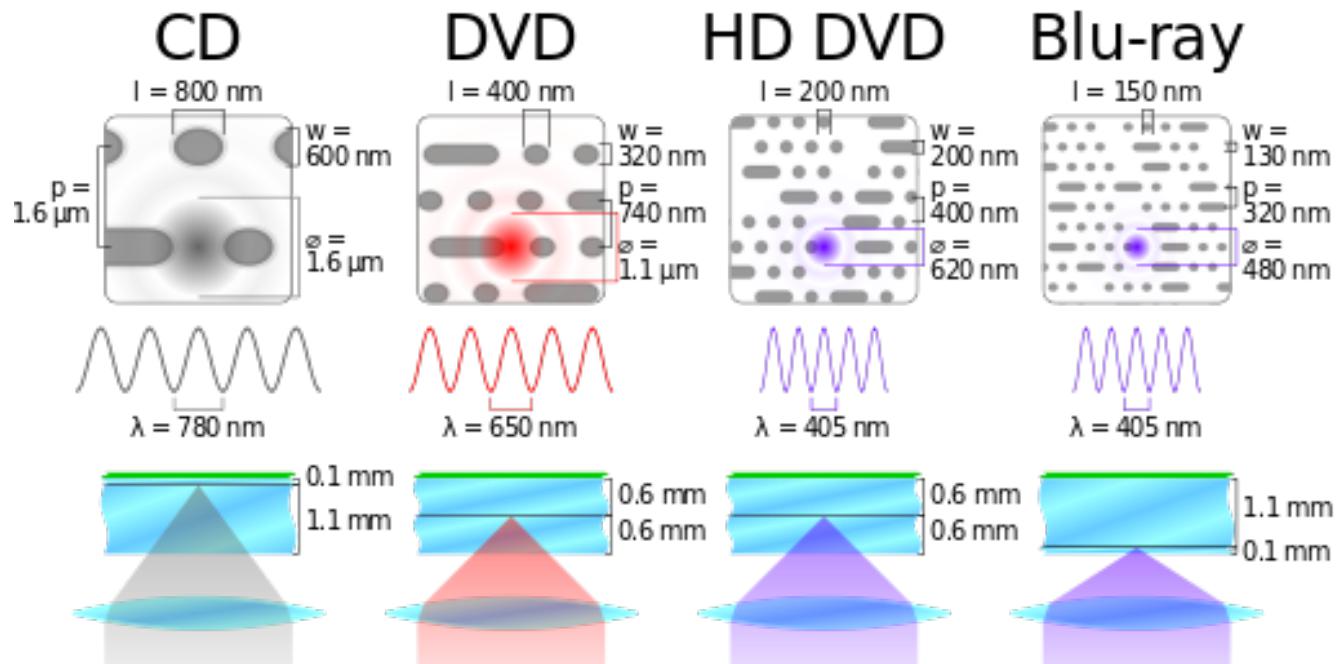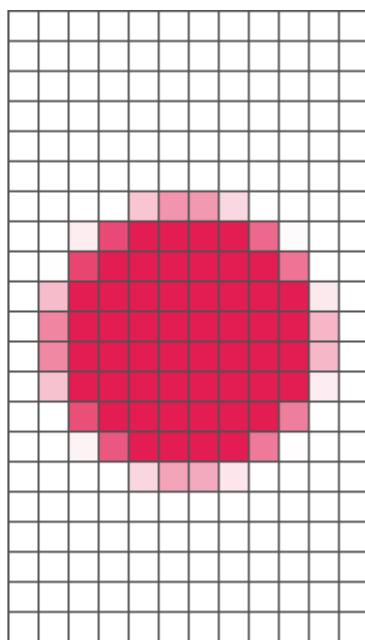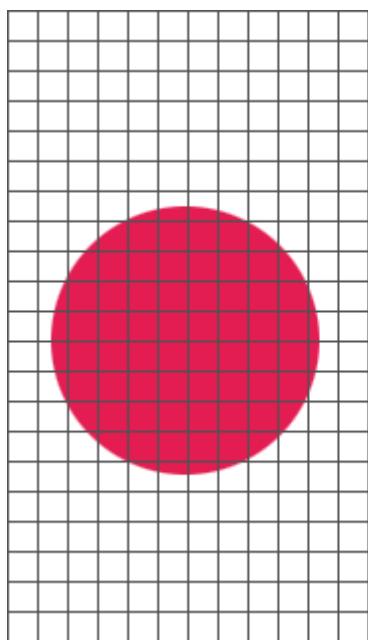
5 – Hardware: úložná zařízení

6 – Počítačová grafika a barevné modely


```
<svg xmlns="http://www.w3.org/2000/svg" version="1.1"
            width="180" height="180">

    <line
            x1="100" y1="60" x2="10" y2="60"
            style="stroke:rgb(255,0,0);" />
    <line
            x1="10" y1="60" x2="55" y2="10"
            style="stroke:rgb(255,0,0);" />
    <line
            x1="55" y1="10" x2="100" y2="60"
            style="stroke:rgb(255,0,0);" />

</svg>
```

6 – Modulární programování


```
FileUtils-2.7.4.lib
getRecursively(pattern) {
    ...
}
```

```
Program
files = FileUtils.getRecursively("*.png");
foreach (f in files) {
    size = ImgUtils.getSize(f);
    print("Image size is %s", size);
}
```

```
ImgUtils-3.5.1.lib
getSize(filename) {
    ...
}
```

```
system.lib
print(s) {
    ...
}
```

7 − Alternativní textové formáty

LaTeX

```
\documentclass[a4paper,12pt]{article}

\usepackage[czech]{babel}
\usepackage[utf8x]{inputenc}

\author{Vojtěch Horký}
\title{Maturita}

\begin{document}

\maketitle

\section{Lorem Ipsum}

\Huge{Suspendisse}. Elementum class facilisis morbi penatibus nisi blandit
quis, cum. Ad suscipit vivamus sapien ad mattis senectus. Leo sed imperdiet
ultrices, sapien litora fusce, posuere sapien nisl aenean senectus cubilia
penatibus tempus. Rhoncus ve, consequat iaculis, est parturient donec elit,
amet curabitur mus netus.

Tempus, venenatis porta ad nostra.
Est, nisi pede vel ipsum viverra. Orci.
Fames ut auctor maecenas duis. Eni.
At eu primis fermentum torquent diam sed eni et arcu metus eu.
Class \emph{magna} velit.

\end{document}
```
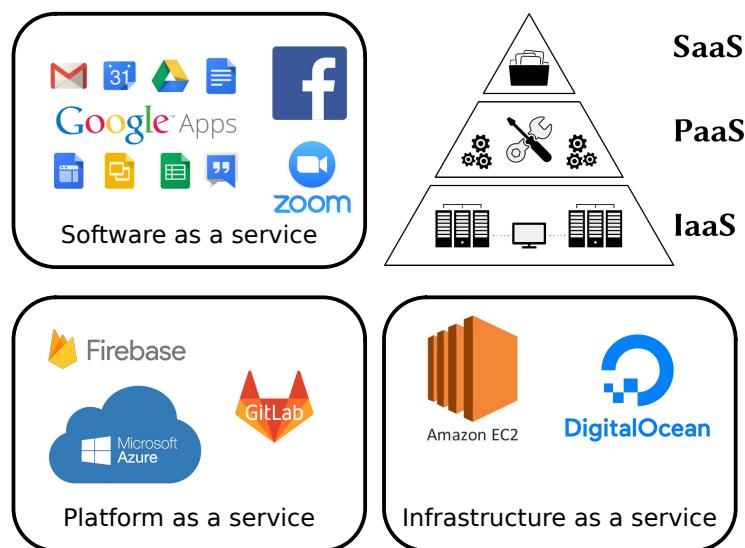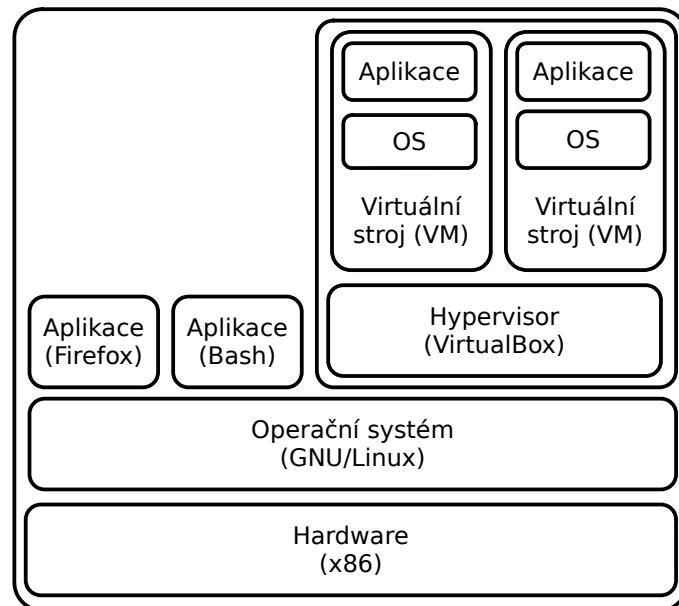
Markdown
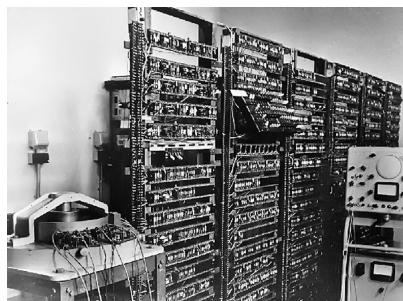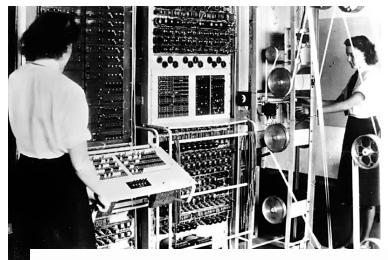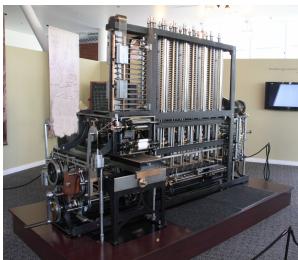
```
% Vojtěch Horký
% Maturita

# Lorem Ipsum
Suspendisse. Elementum class facilisis morbi penatibus nisi blandit
quis, cum. Ad suscipit vivamus sapien ad mattis senectus. Leo sed imperdiet
ultrices, sapien litora fusce, posuere sapien nisl aenean senectus cubilia
penatibus tempus. Rhoncus ve, consequat iaculis, est parturient donec elit,
amet curabitur mus netus.

Tempus, venenatis porta ad [nostra](http://www.example.com).
Est, nisi pede vel ipsum viverra. Orci.
Fames ut auctor maecenas duis. Eni.
At eu primis fermentum torquent diam sed eni et arcu metus eu.
Class *magna* velit.
```

8 – Virtualizace a cloud

8 – Historie hardware a software

9 − Verzovací systémy

```
Index: mainline/uspace/lib/gpt/libgpt.c
===================================================================
--- a/mainline/uspace/lib/gpt/libgpt.c
+++ b/mainline/uspace/lib/gpt/libgpt.c
@@ -707,9 +707,5 @@
 }


-/** Generate a new pseudo-random UUID
- *
- * FIXME: This UUID generator is not compliant with RFC 4122.
- *
- */
+/** Generate a new pseudo-random UUID compliant with RFC 4122 */
 void gpt_set_random_uuid(uint8_t *uuid)
 {
@@ -718,4 +714,14 @@
         for (size_t i = 0; i < 16; i++)
                 uuid[i] = random();
+
+       /*
+        * Set version (stored in bits 4-7 of seventh byte) to 4 (random
+        * UUID) and bits 6 and 7 of ninth byte to 0 and 1 respectively -
+        * according to RFC 4122, section 4.4.
+        */
+       uuid[6] &= 0x0f;
+       uuid[6] |= (0x4 << 4);
+       uuid[8] &= 0x3f;
+       uuid[8] |= (1 << 7);
 }
```

9 – Verzovací systémy

Rev	Message	Date	Autho
1858	add in6addr_any	2013-06...	Mar...
1857	Mostly C style (obey clang suggestions)	2013-06...	Vojt...
1443.1.65	Make mkext2 runnable under Python 3 as well	2013-06...	Vojt...
1443.1.64	C style: type-casting etc.	2013-06...	Vojt...
1443.1.63	C style: uninitialized variables	2013-06...	Vojt...
1443.1.62	C style: do not redefine typedefs	2013-06...	Vojt...
1443.1.61	C style: fix usage of sizeof(void *)	2013-06...	Vojt...
1443.1.60	C style: remove unused variable	2013-06...	Vojt...
1443.1.59	Add -Werror for kernel with Clang	2013-06...	Vojt...
1443.1.58	Honour integer promotion during bitshift	2013-06...	Vojt...
1443.1.57	Clang does not know __attribute__(optimize)	2013-06...	Vojt...
1443.1.56	Merge mainline changes	2013-06...	Vojt...
1856	ata_bd needs to use hw_res (PIO resource c...	2013-06...	Jiri ...
1855	ata_bd should use ddf_msg().	2013-06...	Jiri ...
1854	cstyle (no change in functionality)	2013-06...	Mar...
1853	fix uninitialized variable	2013-06...	Mar...
1852	use optimization level -O3 again	2013-06...	Mar...
1851	routines for IPv6 address parsing and format...	2013-06...	Mar...
1850	Convert ata_bd to DDF.	2013-06...	Jiri ...
1849	Merge from lp:~jakub/helenos/slip.	2013-06...	Jak...
1815.2.6	Adapt the SLIP server to the new network ad...	2013-06...	Jak...
1815.2.5	Merge mainline changes.	2013-06...	Jak...
1815.2.4	Use two serialized sessions instead of one pa...	2013-05...	Jak...
1815.2.3	Allow ns8250 to be opened multiple-times.	2013-05...	Jak...
1815.2.2	More complete implementation of the SLIP se...	2013-05...	Jak...
1815.2.1	Basic infrastructure for the SLIP server.	2013-05...	Jak...
1848	Encapsulate controller state in ata_bd.	2013-06...	Jiri ...
1847	Rudimentary support for dumping TOC in blk...	2013-06...	Jiri ...
1846	Fix ata_bd crash during read TOC operation.	2013-06...	Jiri ...

Revision: 1443.1.60
revid:vojtechhorky@users.sourceforge.net-201
30611141430-g5at5kn4ky6q40nu
Parents: ○1443.1.59: Add -Werror for kernel with Clang
Children: ○1443.1.61: C style: fix usage of sizeof(void *)
Date: 6/11/13 4:14 PM
Committer: Vojtech Horky
<vojtechhorky@users.sourceforge.net>
Branch: misc

C style: remove unused variable

uspace/app/bdsh/cmds/modules

10 – Kryptografie a ochrana informací

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
2	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A
3	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B
4	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C
5	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D
6	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E
7	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F
8	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G
9	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H
10	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I
11	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J
12	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K
13	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L
14	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M
15	O	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N
16	P	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
17	Q	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
18	R	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
19	S	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
20	T	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
21	U	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
22	V	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
23	W	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
24	X	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W
25	Y	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X
26	Z	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y

10 – Testování softwaru

math_op.py

```python
class MathOp:
    @staticmethod
    def add(a, b):
        return a + b

    @staticmethod
    def subtract(a, b):
        return a - b
```

test_math_op.py

```python
import unittest
from math_op import MathOp

class MathOpTest(unittest.TestCase):
    def test_adding_works(self):
        self.assertEqual(
            MathOp.add(3, 1),
            4
        )

    def test_adding_zero_works(self):
        self.assertEqual(
            MathOp.add(43, 0),
            42
        )

    def test_subtract_works(self):
        self.assertEqual(
            MathOp.subtract(-3, 1),
            -4
        )


if __name__ == '__main__':
    unittest.main()
```

11 – Multimedia a jejich prezentace

```
<dvdauthor dest="dvd">
<vmgm>
  <menus>
    <pgc entry="title">
      <vob file="intro.mpg" />
      <post>jump titleset 1 menu;</post>
    </pgc>
  </menus>
</vmgm>
<titleset>
  <menus>
    <pgc entry="root">
      <button> jump title 1; </button>
      <button> jump title 2; </button>
      <button> jump title 3; </button>
      <button> jump title 4; </button>
      <vob file="menu.mpg" pause="inf" />
    </pgc>
  </menus>
  <titles>
    <pgc>
      <vob file="01.mpg"
        chapters="0,5:00,10:00,15:00,20:00,25:00,30:00,35:00"
        pause="3" />
      <post> call menu; </post>
    </pgc>
    <pgc>
      <vob file="02.mpg"
        chapters="0,5:00,10:00,15:00,20:00,25:00,30:00,35:00"
        pause="3" />
      <post> call menu; </post>
    </pgc>
    <pgc>
      <vob file="03.mpg"
        chapters="0,5:00,10:00,15:00,20:00,25:00,30:00,35:00"
        pause="3" />
      <post> call menu; </post>
    </pgc>
    <pgc>
      <vob file="04.mpg"
        chapters="0,5:00,10:00,15:00,20:00,25:00,30:00,35:00"
        pause="3" />
      <post> call menu; </post>
    </pgc>
  </titles>
</titleset>
</dvdauthor>
```

11 – Multimedia a jejich prezentace

Format Container: .avi, .mp4, .mov, .ogg, .flv, .mkv, etc.

| Video codec:	Audio codec:	Captioning, Video description:	Metadata:
H.264, VC-1, Theora, Dirac 2.1, H.263, etc.	AAC, WMA, Vorbis, PCM, etc.	SAMI, SMIL, Hi-Caption, CMML, DXFP, 3GPP TS 26.245, MPSub, etc.	Author, Title, Location, Date, Copyright, License, etc.

12 – Publikování na webu

Klient
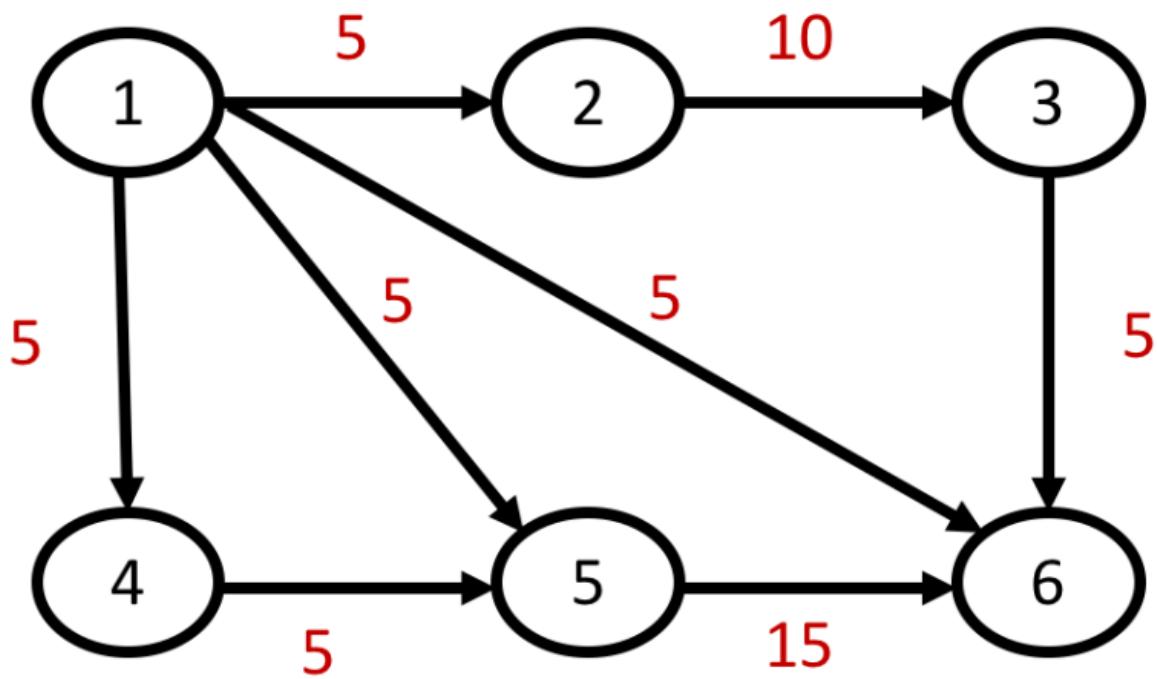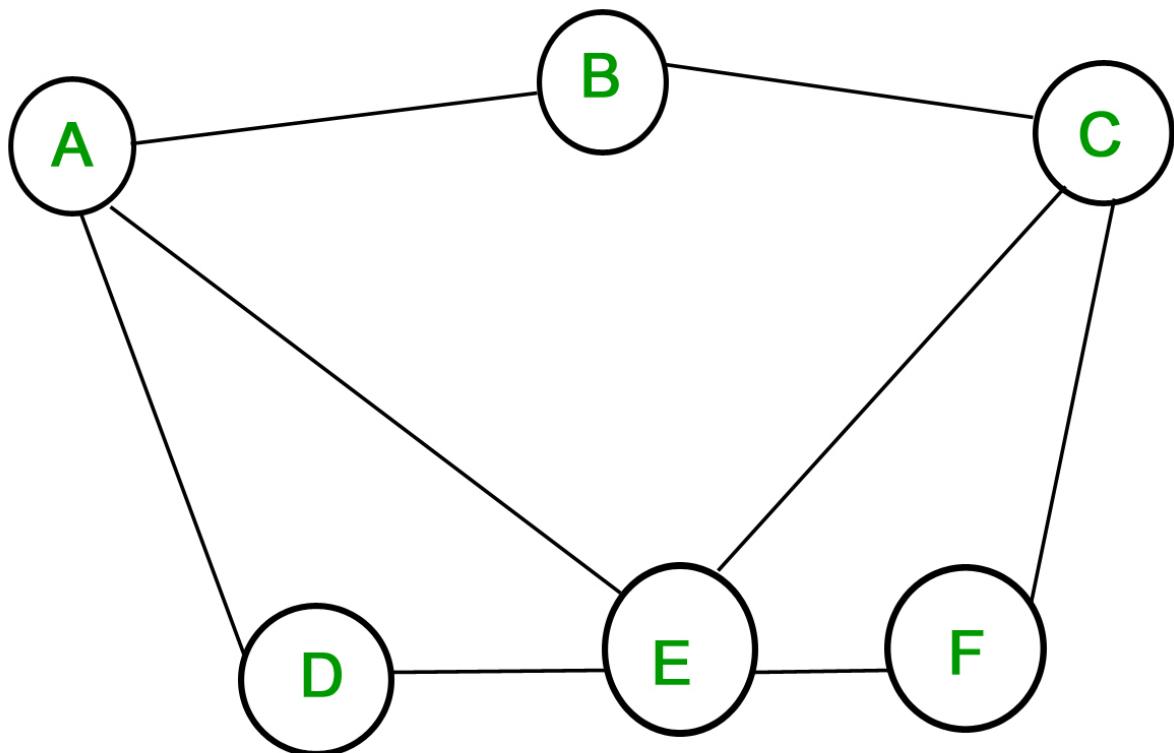
```
GET /index.html HTTP/1.1
Host: www.example.com
```

Server

```
HTTP/1.1 200 OK
Date: Mon, 23 May 2005 22:38:34 GMT
Server: Apache/1.3.3.7 (Unix) (Red-Hat/Linux)
Last-Modified: Wed, 08 Jan 2003 23:11:55 GMT
Content-Type: text/html; charset=UTF-8
Content-Length: 131
Accept-Ranges: bytes
Connection: close

<html>
<head>
  <title>An Example Page</title>
</head>
<body>
  Hello World, this is a very simple HTML document.
</body>
</html>
```

13 – Dávkové úlohy (práce v příkazové řádce)

```
mkdir -p thumb
for i in DSC*.jpg; do
    convert "$i" -resize 800x600 "$( basename "$i" .jpg)".thumb.jpg
done
```

```bash
#! /bin/bash

JVM_DIR=/usr/lib/jvm
DEFAULT_NAME=default
DEFAULT_PATH=${JVM_DIR}/${DEFAULT_NAME}
DEFAULT_NAME_JRE=default-runtime
DEFAULT_PATH_JRE=${JVM_DIR}/${DEFAULT_NAME_JRE}

get_default_java() {
  path=$(readlink -e ${DEFAULT_PATH})
  if [ "x${path}" != "x/dev/null" ]; then
    echo ${path/${JVM_DIR}\/}
  else
    echo ""
  fi
}

get_installed_javas() {
  if [ -d ${JVM_DIR} ]; then
    for dir in $(find ${JVM_DIR} -mindepth 1 -maxdepth 1 -type d | sort); do
      if [ -x ${dir}/bin/java ]; then
        javas+=(${dir/${JVM_DIR}\/})
      else
        if [ -x ${dir}/jre/bin/java ]; then
        javas+=(${dir/${JVM_DIR}\/}/jre)
        fi
      fi
    done
  fi
  echo ${javas[@]}
}

# ...

case $1 in
  'status') do_status;;
  'get')    do_get;;
  'set')    check_root; check_param_count $# 2; do_set $2;;
  'unset')  check_root; do_unset;;
  'fix')    check_root; do_fix;;
  'help' | '--help' | '-h' | '') usage;;
  *)        echo "$(basename $0): unknown option '$@'"; exit 1;;
esac
```

14 − E-mail a instant messaging

```
Delivered-To: vojtech.horky@alej.cz
Received: by 10.220.194.1 with SMTP id dw1csp292254vcb;
        Wed, 7 May 2014 03:53:25 -0700 (PDT)
X-Received: by 10.182.72.227 with SMTP id g3mr14489014obv.28.1399460005017;
        Wed, 07 May 2014 03:53:25 -0700 (PDT)
Return-Path: <XXXXXX@gmail.com>
Received: from mail-ob0-x229.google.com (mail-ob0-x229.google.com ....)
        by mx.google.com with ESMTPS id a7si10520488oex.138.2014.05.07.03.53.24
        for <vojtech.horky@alej.cz>
        (version=TLSv1 cipher=ECDHE-RSA-RC4-SHA bits=128/128);
        Wed, 07 May 2014 03:53:25 -0700 (PDT)
Received-SPF: pass (google.com: domain of domho108@gmail.com designates ...
Authentication-Results: mx.google.com;
        spf=pass (google.com: domain of domho108@gmail.com designates ...
        dkim=pass header.i=@gmail.com;
        dmarc=pass (p=NONE dis=NONE) header.from=gmail.com
Received: by mail-ob0-f169.google.com with SMTP id vb8so967590obc.0
        for <vojtech.horky@alej.cz>; Wed, 07 May 2014 03:53:24 -0700 (PDT)
MIME-Version: 1.0
Received: by 10.182.135.47 with HTTP; Wed, 7 May 2014 03:53:04 -0700 (PDT)
From: YYYYY ZZZZZ <XXX@gmail.com>
Date: Wed, 7 May 2014 12:53:04 +0200
Message-ID: <CAOe0qwszP-v2SRSVKS1SG4D-92Ukxf+AVGbXfjaaapJ6srs0cw@mail.gmail.com>
Subject: QQQQQQQQQQQQ
To: vojtech.horky@alej.cz
Content-Type: multipart/mixed; boundary=001a1134aa0e73b84704f8cd2ca0

--001a1134aa0e73b84704f8cd2ca0
Content-Type: text/plain; charset=UTF-8
Content-Transfer-Encoding: quoted-printable

Dobr=C3=BD den,

bla blah

--001a1134aa0e73b84704f8cd2ca0
Content-Type: application/zip; name="file.zip"
Content-Disposition: attachment; filename="file.zip"
Content-Transfer-Encoding: base64
X-Attachment-Id: f_huwj33e60
```

```
UEsDBAoAAAAAKtpp0QAAAAAAAAAAAAAAAAAGAAAASG9kYW4vUEsDBBQAAAAIAGhpp0RRBBZqqQIA
....
AQAAEAAAAAAAAAAAACAAAABOEAAASG9kYW4vdGFwZXR5LnR4dFBLAQIUABQAAAAIAHhnp0QrI3OV
YgAAAPYAAAARAAAAAAAAAAAIAAAAKYRAABIb2Rhbi92eXR2b3IuYmF0dFBLBQYAAAAADAAMAOIC
AAA3EgAAAA=
--001a1134aa0e73b84704f8cd2ca0--
```

14 – Algoritmy třídění

12	5	8	15	2	6	20	7

15 − Licencování softwaru a otevřený software

15 – Specializované programovací jazyky

Vstup

```
11,12
15,18
21,35
```

AWK

```
BEGIN {
    # field-separator by byl jinak tabulator
    FS=","
}


{
    print $1 + $2
}
```
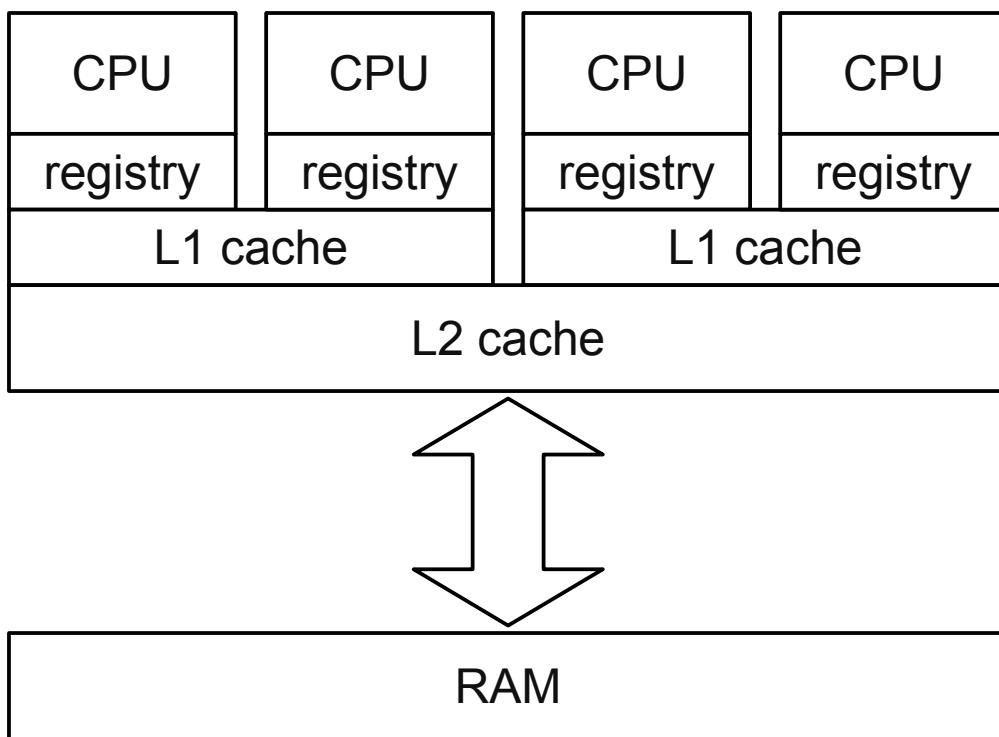
Python

```python
import sys

def main():
    for line in sys.stdin:
        parts = line.strip().split(',')
        a = int(parts[0])
        b = int(parts[1])
        print(a + b)

if __name__ == "__main__":
    main()
```

Java

```java
public class Secti {
    public static void main(String[] args) {
        java.util.Scanner sc = new java.util.Scanner(System.in);
        while (sc.hasNextLine()) {
            String line = sc.nextLine();
            String[] casti = line.split(",");

            int a = Integer.parseInt(casti[0]);
            int b = Integer.parseInt(casti[1]);
            System.out.println(a + b);
        }
        sc.close();
    }
}
```

16 – Hardware: CPU, paměť a architektura počítače

16 – Typografie

AVATAR — AVATAR

ff — ff
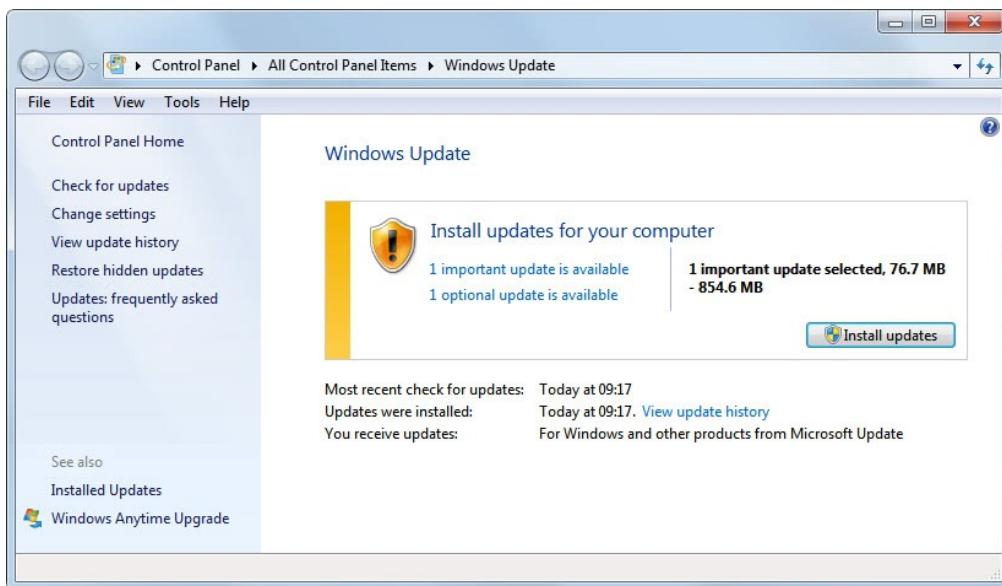
abeceda — **abeceda**

písmeno — **písmeno**

slovo — *slovo*

17 – Operační systémy a ovladače

Windows
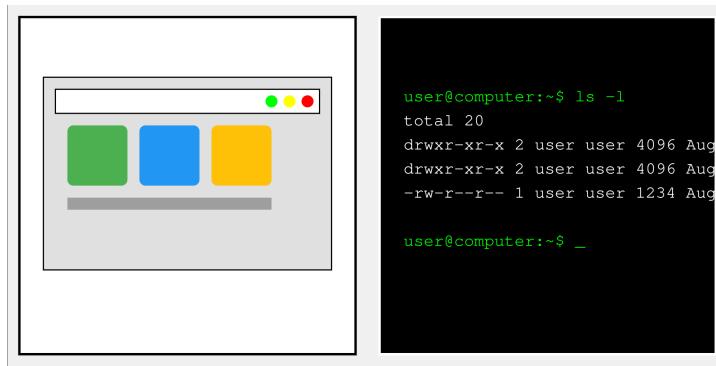
GNU/Linux

```
$ ssh user@machine
Last login: Wed Apr 25 14:39:12 2018 from 10.10.1.17
[user@machine ~]$ su -
Password:
[root@machine ~]# dnf upgrade
Last metadata expiration check: 0:15:06 ago on Thu 10 May 2018 09:43:17 AM CEST.
Dependencies resolved.
================================================================================
 Package              Arch       Version          Repository      Size
================================================================================
Upgrading:
 GeoIP-GeoLite-data   noarch     2018.04-1.fc27   updates         551 k
 PackageKit           x86_64     1.1.10-1.fc27    updates         586 k
 ...

Transaction Summary:
  Upgrade   161 Packages

Total download size: 322 M
```

17 – Uživatelská rozhraní a UX design


```html
<!DOCTYPE html>
<html lang="cs">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Příklad přístupné webové stránky</title>
    <style>
        body { font-family: Arial, sans-serif; line-height: 1.6; color: #333; }
        .skip-link {
            position: absolute;
            top: -40px;
            left: 0;
            background: #000;
            color: white;
            padding: 8px;
            z-index: 100;
        }
        .skip-link:focus {
            top: 0;
        }
        .visually-hidden {
            position: absolute;
            padding: 0;
            overflow: hidden;
            clip: rect(0, 0, 0, 0);
            white-space: nowrap;
            border: 0;
        }
    </style>
</head>
<body>
    <a href="#main-content" class="skip-link">Přeskočit na hlavní obsah</a>

    <header role="banner">
        <h1>Příklad přístupné webové stránky</h1>
        <nav role="navigation" aria-label="Hlavní navigace">
            <ul>
                <li><a href="#section1">Sekce 1</a></li>
                <li><a href="#section2">Sekce 2</a></li>
            </ul>
        </nav>
    </header>

    <main id="main-content" role="main">
```

```html
        <section id="section1">
            <h2>Sekce 1: Obrázky a formuláře</h2>
            <img
                src="priklad-obrazku.jpg"
                alt="Popis obrázku pro čtečky obrazovky"
                width="300"
                height="200"
            >

            <form>
                <label for="name">Jméno:</label>
                <input type="text" id="name" name="name" required aria-required="true">

                <fieldset>
                    <legend>Vyberte možnost:</legend>
                    <input type="radio" id="option1" name="options" value="1">
                    <label for="option1">Možnost 1</label>
                    <input type="radio" id="option2" name="options" value="2">
                    <label for="option2">Možnost 2</label>
                </fieldset>

                <button type="submit" aria-label="Odeslat formulář">Odeslat</button>
            </form>
        </section>

        <section id="section2">
            <h2>Sekce 2: Tabulky a ARIA</h2>
            <table aria-describedby="table-description">
                <caption>Jednoduchá tabulka s daty</caption>
                <thead>
                    <tr>
                        <th scope="col">Sloupec 1</th>
                        <th scope="col">Sloupec 2</th>
                    </tr>
                </thead>
                <tbody>
                    <tr>
                        <td>Data 1</td>
                        <td>Data 2</td>
                    </tr>
                </tbody>
            </table>
            <p id="table-description" class="visually-hidden">
                Tato tabulka obsahuje ukázková data ve dvou sloupcích.
            </p>

            <div role="alert" aria-live="assertive">
                Toto je příklad dynamicky aktualizované oblasti pro oznámení.
            </div>
        </section>
    </main>

    <footer role="contentinfo">
        <p>&copy; 2024 Příklad přístupné stránky</p>
    </footer>
</body>
</html>
```
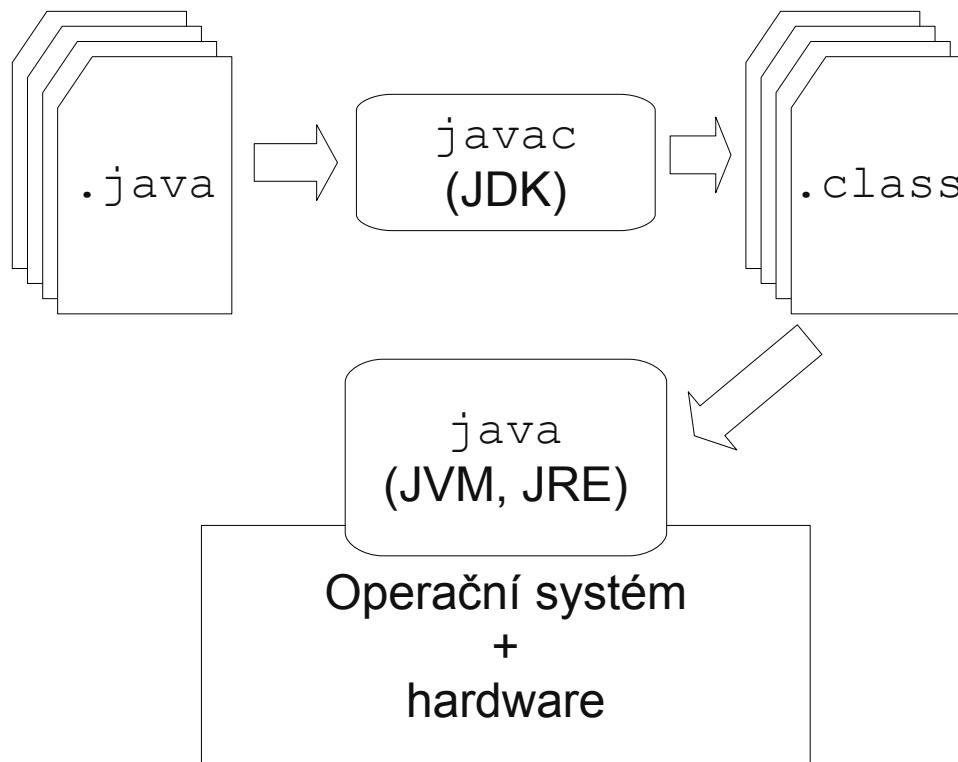
18 – Překladače a řízení překladu

.java → `javac (JDK)` → .class

`java (JVM, JRE)`

Operační systém
+
hardware

18 – Překladače a řízení překladu

```makefile
PYTHON = python3
VENV = venv
PIP = $(VENV)/bin/pip
PYTHON_VENV = $(VENV)/bin/python
TEST_DIR = tests
SRC_DIR = src


all: setup test

$(VENV)/bin/activate: requirements.txt
    $(PYTHON) -m venv $(VENV)
    $(PIP) install -r requirements.txt

setup: $(VENV)/bin/activate

test: setup
    $(PYTHON_VENV) -m pytest $(TEST_DIR)

lint: setup
    $(PYTHON_VENV) -m flake8 $(SRC_DIR)

format: setup
    $(PYTHON_VENV) -m black $(SRC_DIR)

clean:
    rm -rf $(VENV)
    find . -type f -name '*.pyc' -delete
    find . -type d -name '__pycache__' -delete

.PHONY setup text lint format clean
```
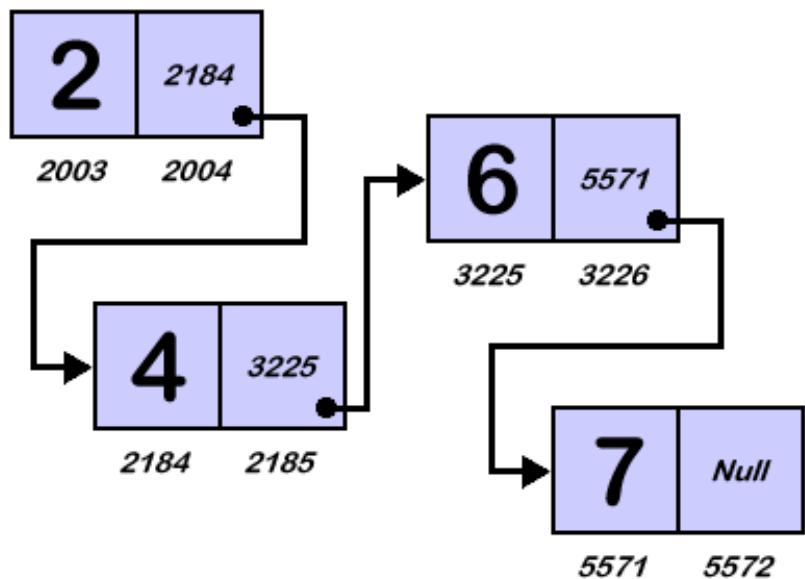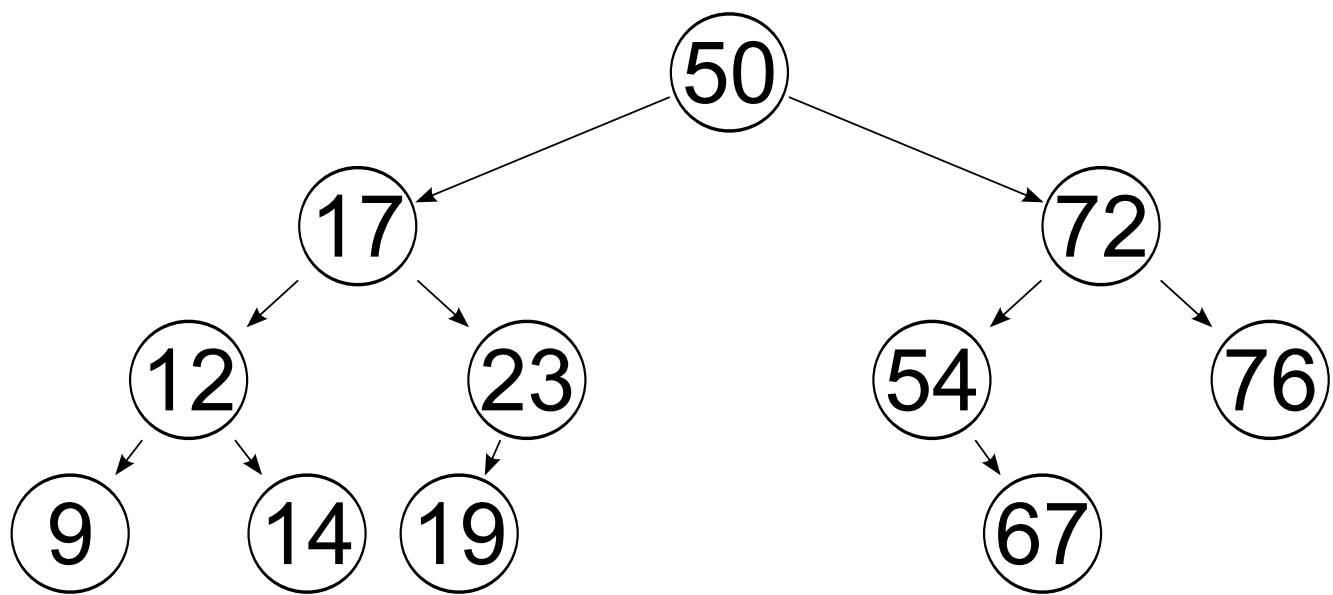
20 – Znak, řetězec a lokalizace

GNU gettext

source.c

```
printf(_("My name is %s.\n"), my_name);
```

source.pot

```
#* source.c:36
msgid "My name is %s.\n"
msgstr ""
```

cs.po

```
#* source.c:36
msgid "My name is %s.\n"
msgstr "Jmenuji se %s.\n"
```

ASCII

32 ␣	44 ,	56 8	68 D	80 P	92 \	104 h	116 t
33 !	45 -	57 9	69 E	81 Q	93]	105 i	117 u
34 ”	46 .	58 :	70 F	82 R	94 ^	106 j	118 v
35 #	47 /	59 ;	71 G	83 S	95 _	107 k	119 w
36 $	48 0	60 ¡	72 H	84 T	96 ‘	108 l	120 x
37 %	49 1	61 =	73 I	85 U	97 a	109 m	121 y
38 &	50 2	62 ¿	74 J	86 V	98 b	110 n	122 z
39 ’	51 3	63 ?	75 K	87 W	99 c	111 o	123 {
40 (	52 4	64 @	76 L	88 X	100 d	112 p	124 |
41)	53 5	65 A	77 M	89 Y	101 e	113 q	125 }
42 *	54 6	66 B	78 N	90 Z	102 f	114 r	126
43 +	55 7	67 C	79 O	91 [	103 g	115 s	

UTF-8

Bajtů	Code-point (bitů)	Byte 1	Byte 2	Byte 3	Byte 4
1	U+0000 – U+007F (7)	0xxxxxxx			
2	U+0080 – U+07FF (11)	110xxxxx	10xxxxxx		
3	U+0800 – U+FFFF (16)	1110xxxx	10xxxxxx	10xxxxxx	
4	U+10000 – U+10FFFF (21)	11110xxx	10xxxxxx	10xxxxxx	10xxxxxx

Znak	Code-point (bin.)	UTF-8 (bin. & hex.)
$ U+0024	0010 0100	0:0100100 (24)
€ U+20AC	0010 0000 1010 1100	1110:0010 10:000010 10:101100 (E2 82 AC)