

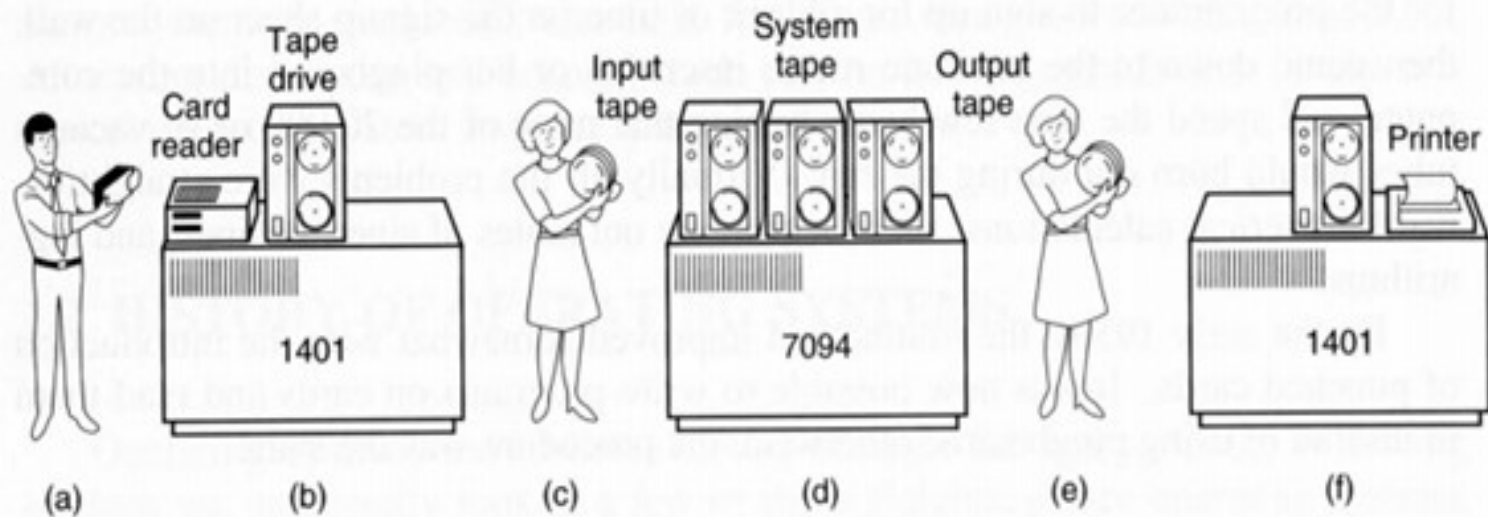
# Primjena elektroničkih računala

Operacijski sustavi

Izv. prof. dr. sc. Hrvoje Kalinić



# Operacijski sustavi



An early batch system. (a) Programmers bring cards to 1401. (b) 1401 reads batch of jobs onto tape. (c) Operator carries input tape to 7094. (d) 7094 does computing. (e) Operator carries output tape to 1401. (f) 1401 prints output.

# Operacijski sustavi

- Nekad:
  - Jedan program okupira čitavo računalo
  - Sve rutine za obavljanje nižih operacija (kao čitanje s papirne vrpce ili ispisivanje na pisaču) bile su sastavni dio svakog programa
  - Čovjek poslužitelj zadatka računalu
  - Čovjek isporučuje i dohvaća podatke s hardvera



# Operacijski sustavi

- Osnovne funkcije računala
  - Ulaz podatka
  - Spremanje podataka (memoriranje)
  - Obrada podataka
  - Izlaz podataka



# Operacijski sustavi

- Programska podrška
- Podrška sustava
  - Namijenjena je pokretanju računala i zatim što djelotvornijem iskorištenju
  - veza između korisnik i računala
- Primjenjena (aplikativna)
  - Namijenjena je rješavanju konkretnih korisničkih poslova



# Operacijski sustavi

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OS



# Operacijski sustavi

- OS
  - Skup osnovnih programa koji upravljaju (računalnim) strojnim sustavom (hardwareom) u svrhu ostvarivanja osnovnih funkcija računala
  - "Skriva" složenost sustava i raznolikost strojevine
  - Povezuje sve uređaje u jednu cjelinu
  - Upravlja memorijom i strojevinom (hardwareom)
  - Izvršava zadatke
  - Čita i ispisuje (npr. zaslone ili pisač)



# Operacijski sustavi

- OS
  - Današnja računala su nezamisliva bez OS-a
  - Omogućava djelotvorno iskorištavanje sklopovskih i programskih komponenti računalnog sustava
  - Predstavlja vezu između korisnika i stroja





HOW WE THINK FUTURE TECHNOLOGY WILL WORK:



THE HARSH REALITY:

OF COURSE I TRIED RESTARTING IT!!  
WHY ELSE WOULD I BE CALLING?!



endlessorigami.com

- OS

- Današnja
- Omogućava programski
- Predstavlja

bez OS-a

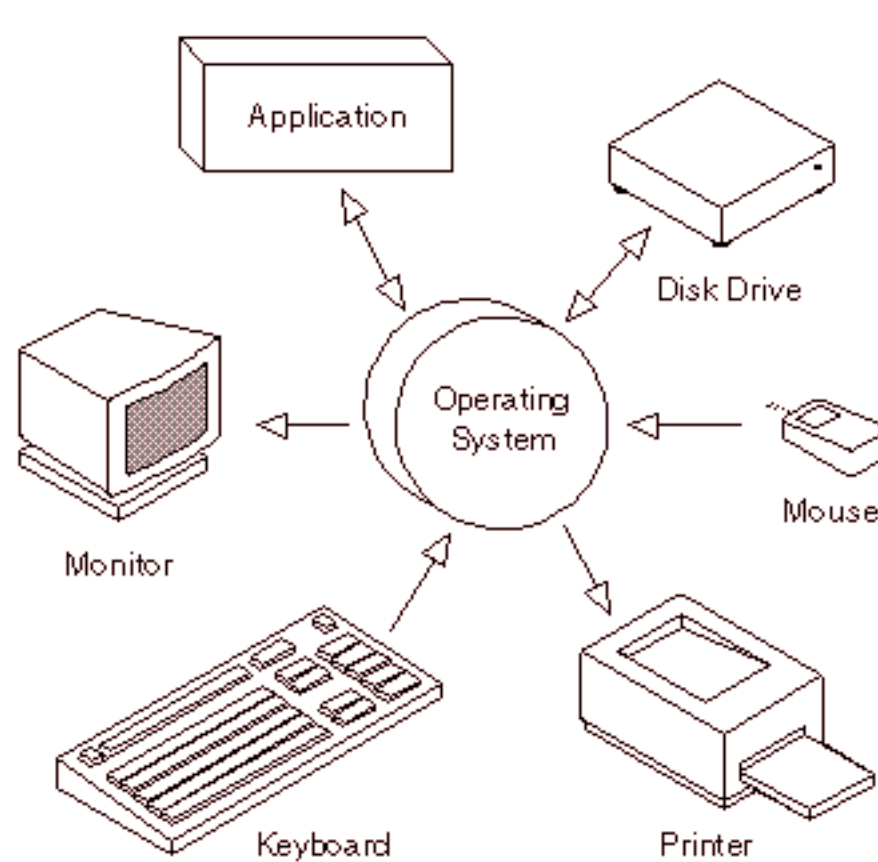
je sklopovskih i sustava

stroja



# Operacijski sustavi

- OS



# Operacijski sustavi

- OS nudi softwaresku platformu za druge programe – aplikacije
- Srednji sloj komunikacije između korisnika i računala

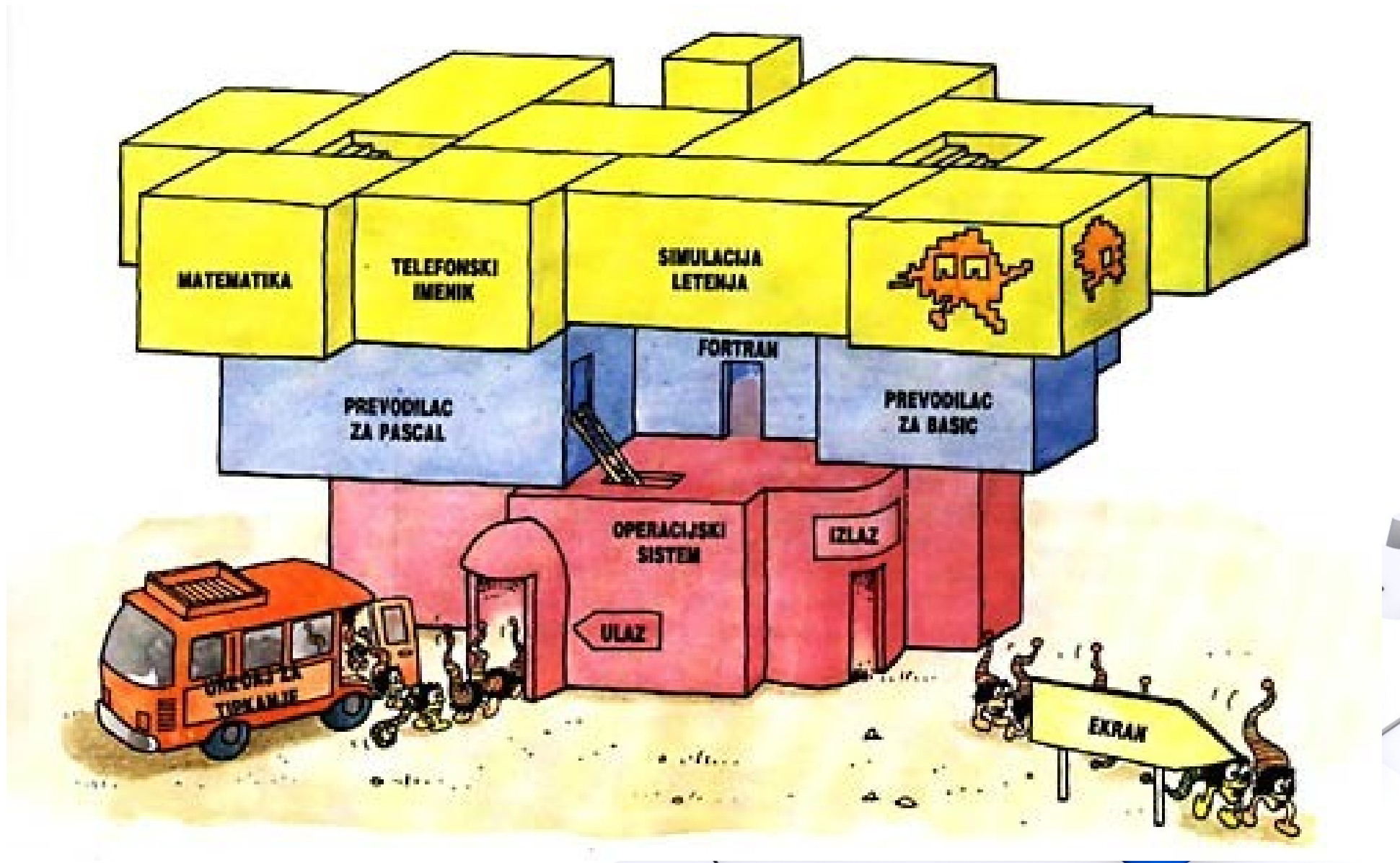


# Operacijski sustavi

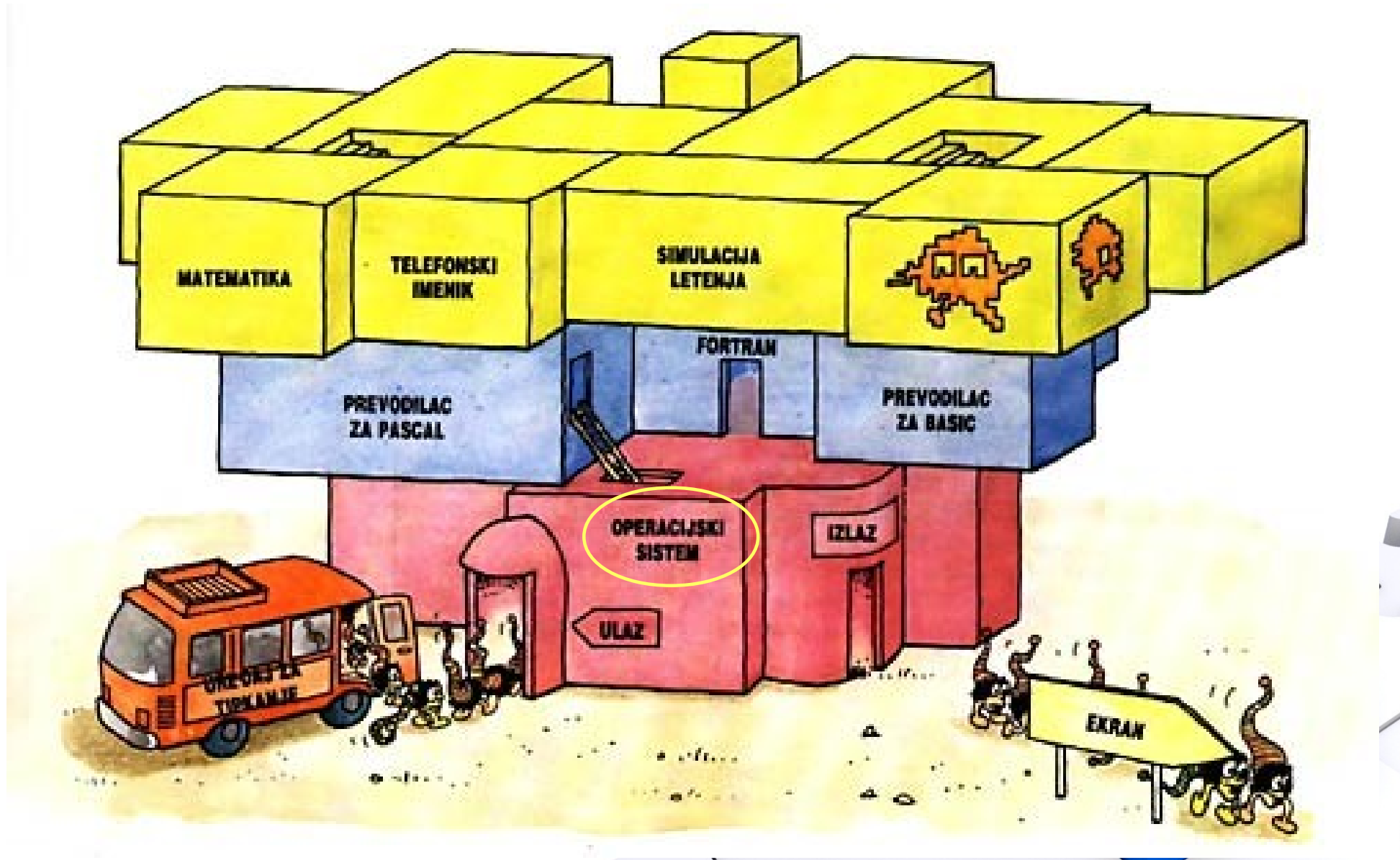
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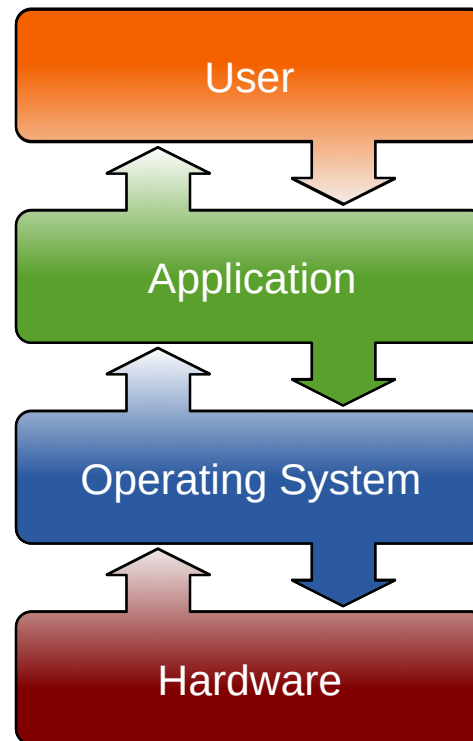
# Operacijski sustavi



# Operacijski sustavi

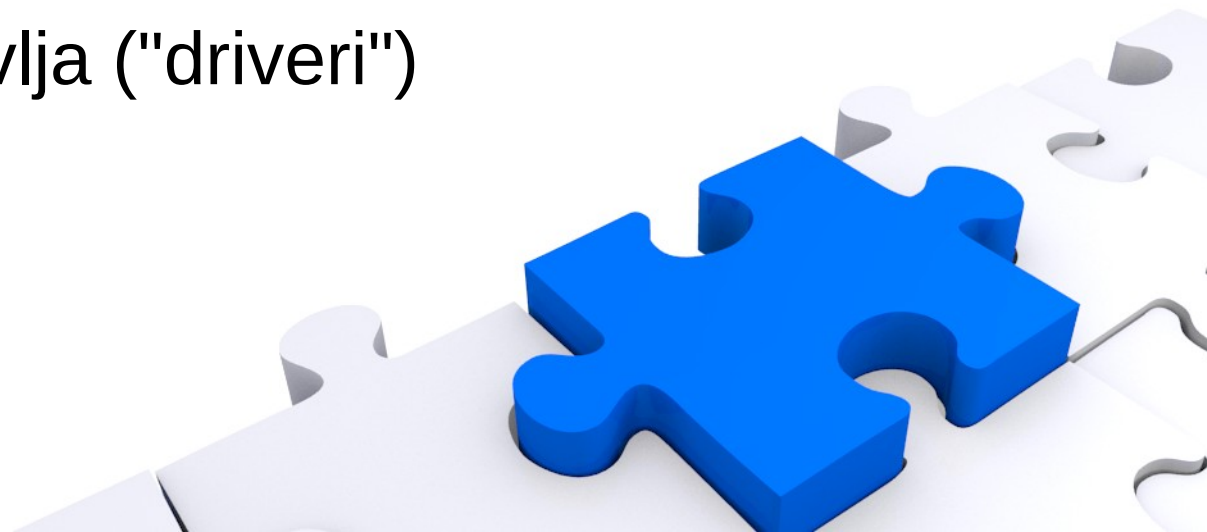


# Operacijski sustavi



# Operacijski sustavi

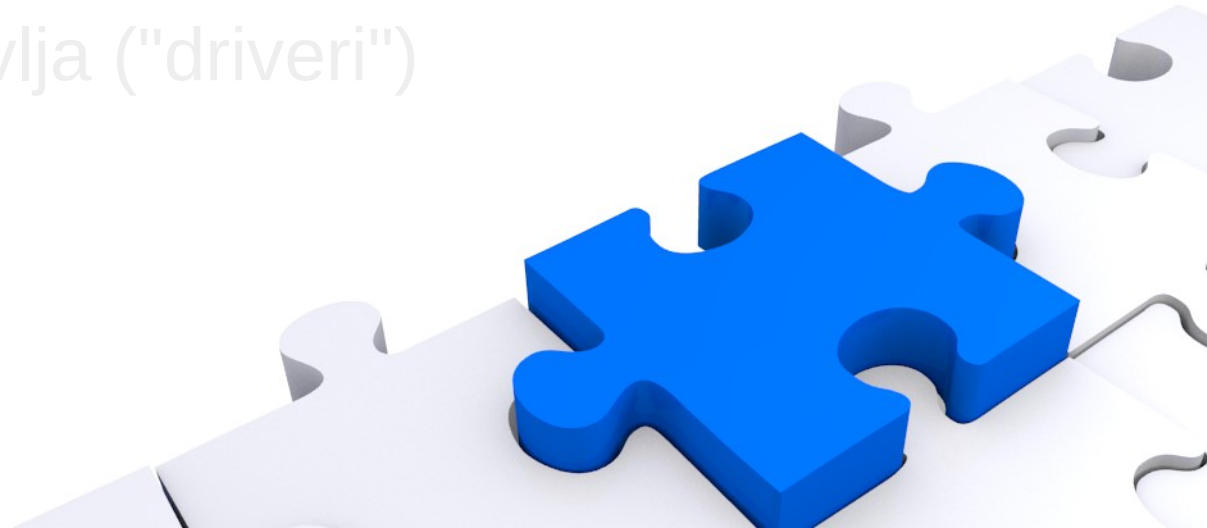
- Sastavnice operacijskog sustava
  - Jezgra (kernel)
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  - Pogonivači sklopovlja ("driveri")
  - ...



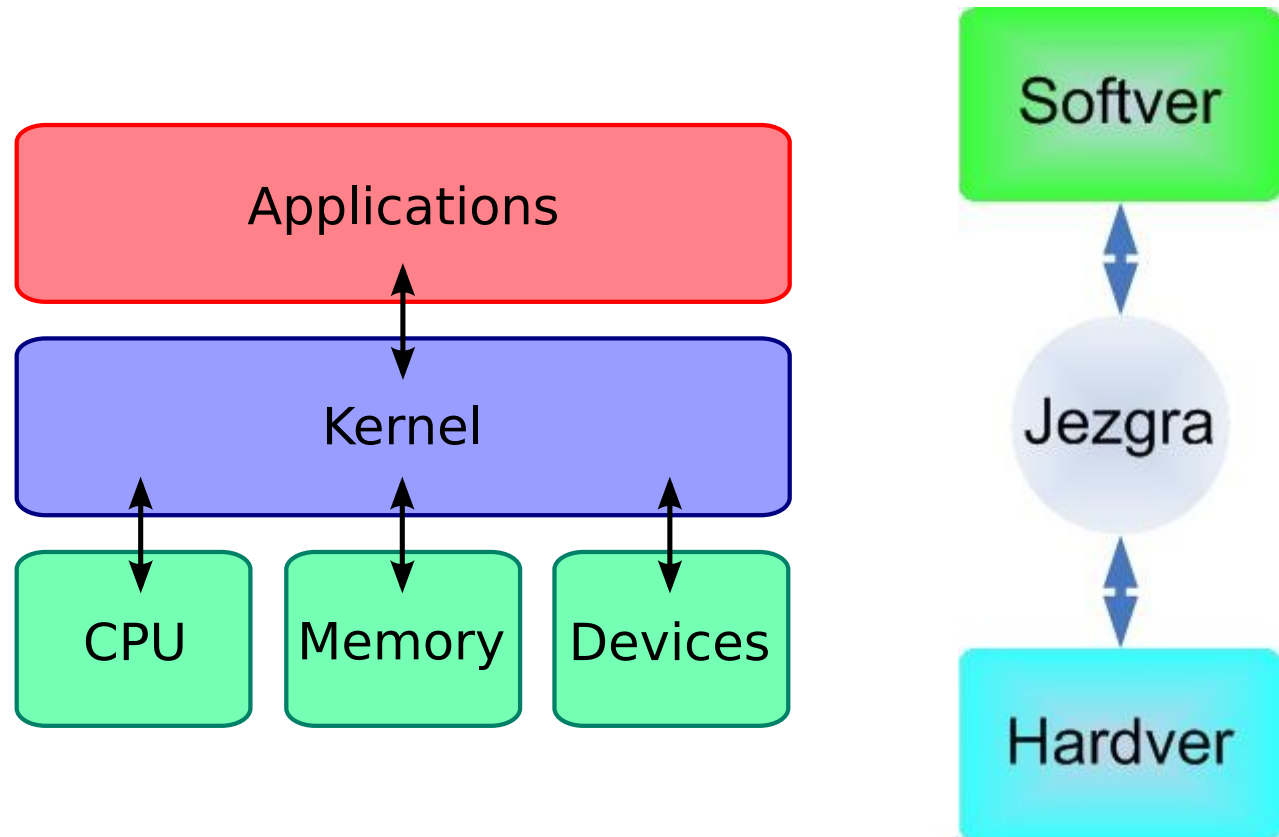


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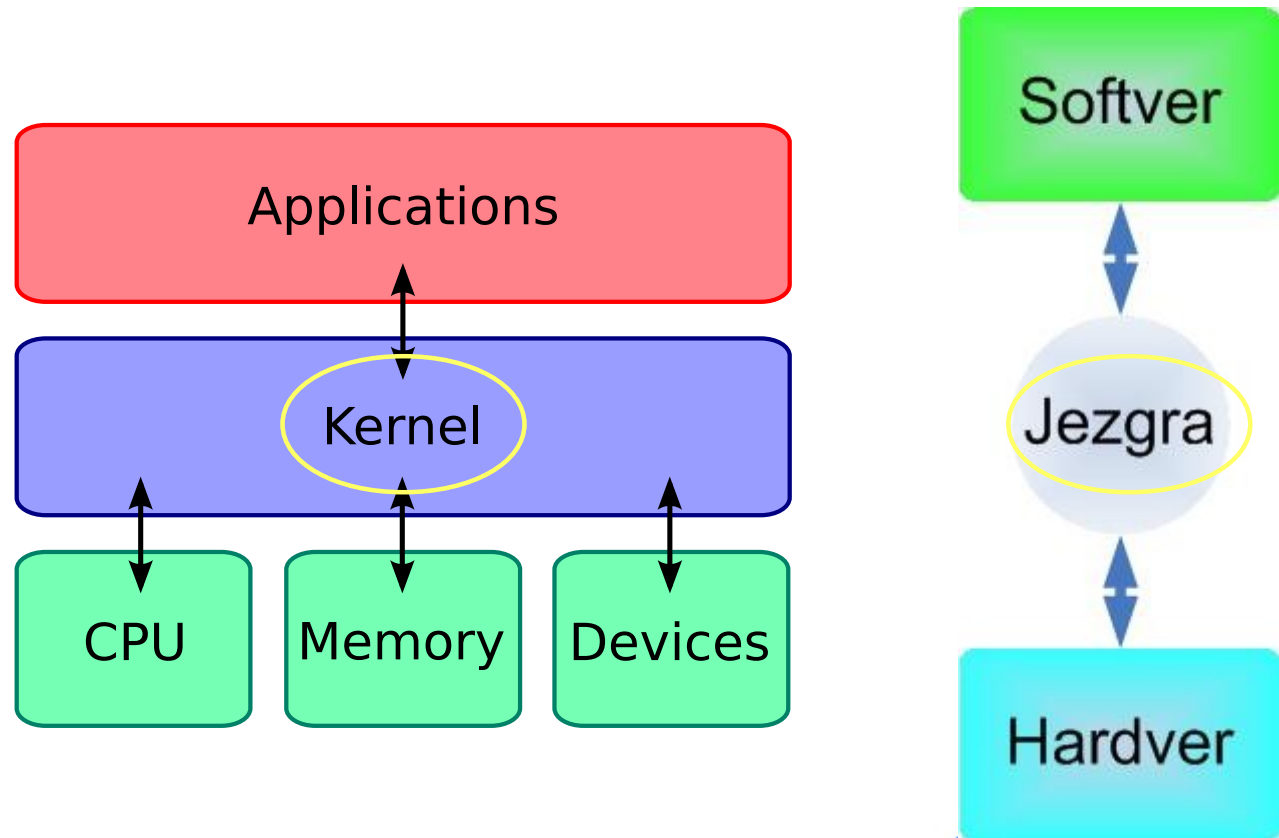
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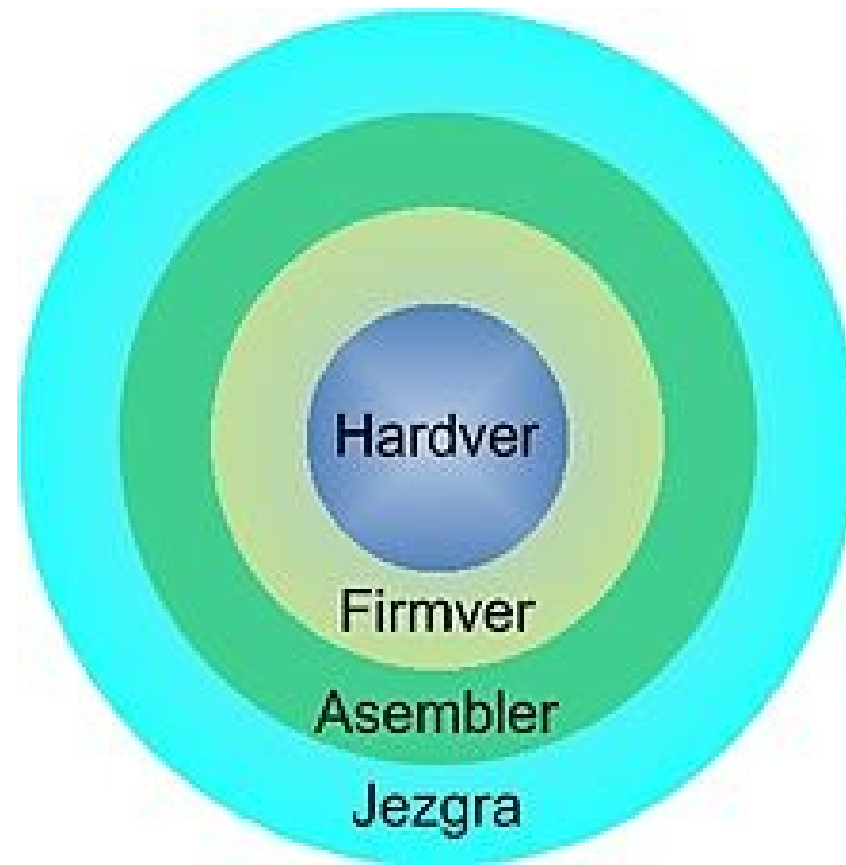
# Operacijski sustavi



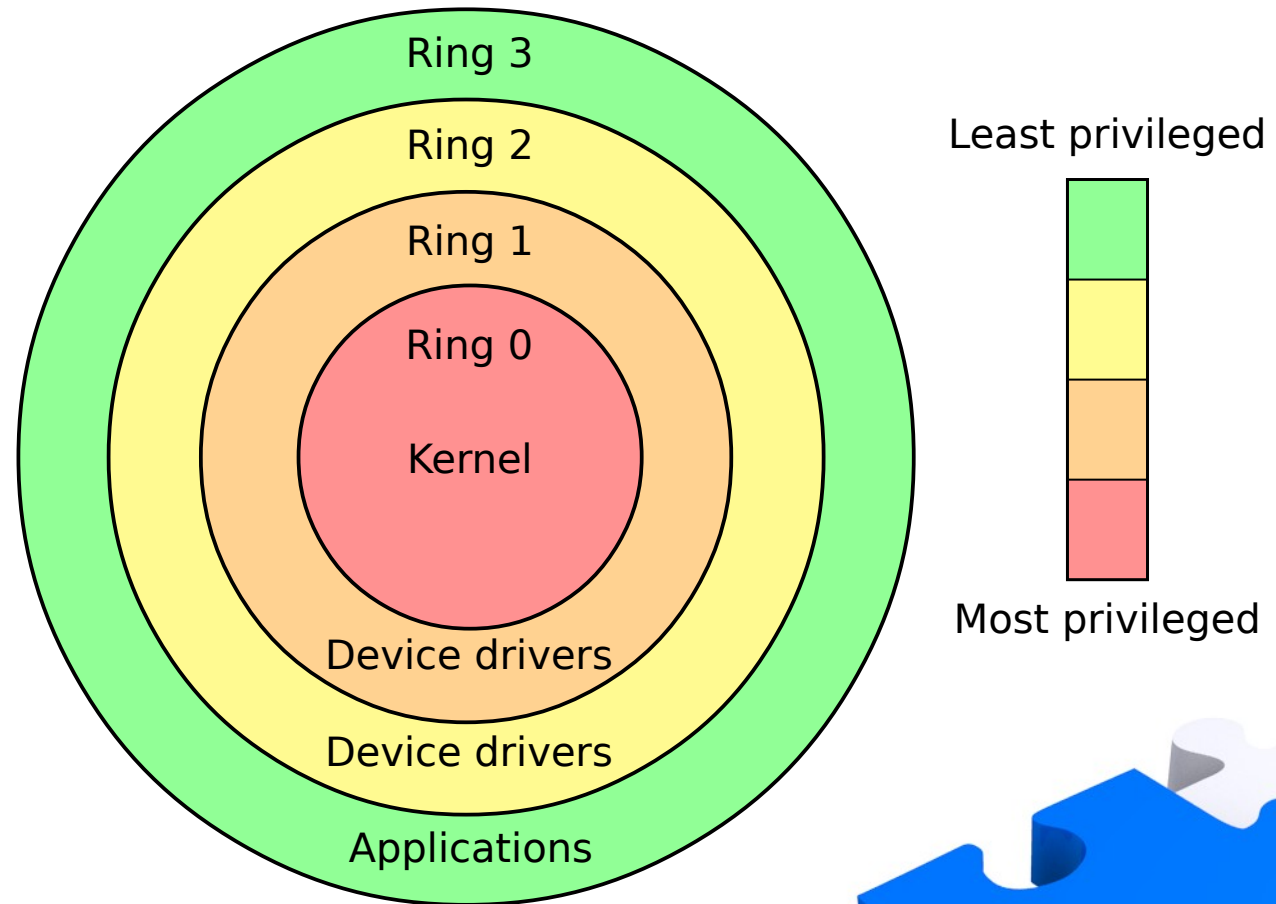
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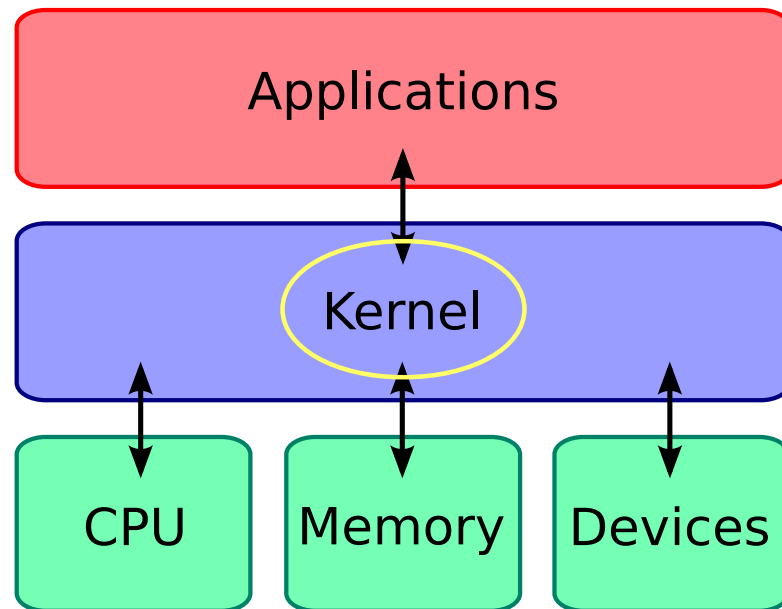
# Operacijski sustavi



# Operacijski sustavi



# Operacijski sustavi



# Operacijski sustavi

- Korisničko sučelje
  - Grafičko
  - Pristup jezgri
    - Ljuska (shell), terminal



Untitled [modified] - KWrite

File Edit View Bookmarks Tools Settings Help

New Open Save Save As Close Undo Redo

1 replacement has been made

Find: [ ] Next Previous Match case

Line: 1 Col: 1 INS LINE Untitled

Desktop

Available Devices

Storage Volume

- MICROSD
- Huawei Incorporated Android Adapter



# Operacijski sustavi

- Svojstva grafičkog sučelja
  - Korisnik ne treba poznavati pravila pisanja naredbi da bi pokrenuo željenu akciju
  - Osnovna komunikacija s korisnikom s pomoću miša, a dodatna preko standardnih elemenata kao što su izbornici i okviri za vođenje dijaloga
  - Nezavisnost akcija pokrenutih kroz GUI o aplikaciji koji se izvršava, npr. ispis dokumenta na pisač obavlja se istim nizom akcija bez obzira iz kojeg programa pokrenut (Excel, MS Word, CorelDraw...).
  - WYSIWYG (What You See Is What You Get) prikaz - što vidiš, to dobiješ



# Operacijski sustavi

- Svojstva grafičkog sučelja
  - Korištenje grafičkih simbola (ikona)
  - “Lijep i razumljiv” prikaz na ekranu
  - Osiguranje neposrednog rukovanja elementima na ekranu (npr. pomicanje margine dokumenta mišem)
  - Korisnik uvijek prvo odabire objekt, a zatim označava aktivnost
  - Podržava rad s više programskih alata istovremeno uz istu tehniku rada u svim alatima
  - Moguća kontrola radnog okruženja s jednog mjesta i razmjena informacija između programa (npr. upotrebom clipboard područja u memoriji).

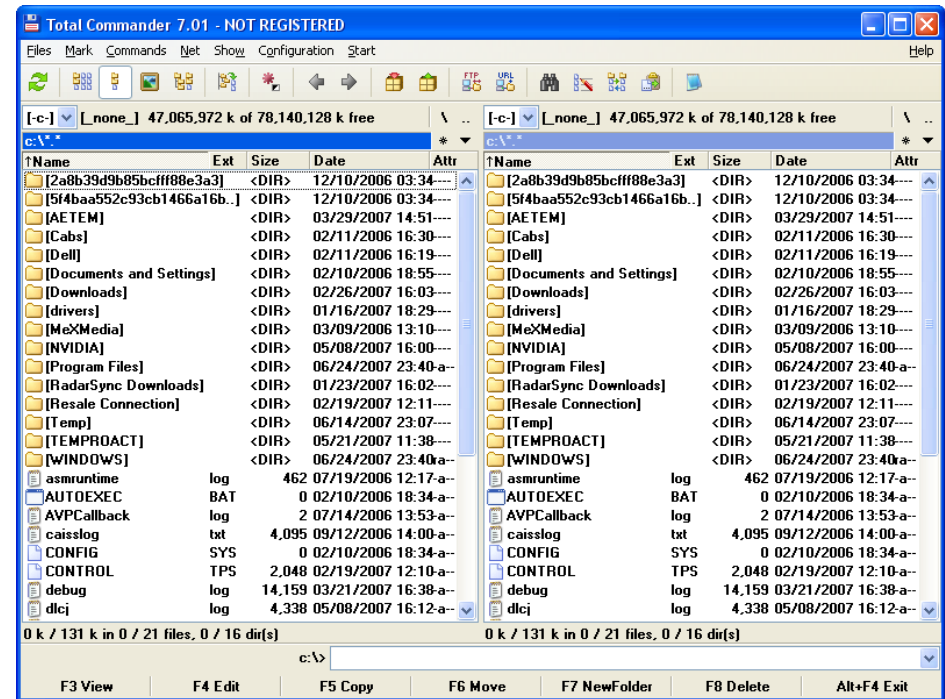


```
root ~ # ping google.com
PING google.com (74.125.95.103) 56(84) bytes of data.
64 bytes from iw-in-f103.1e100.net (74.125.95.103): icmp_seq=1 ttl=47 time=15.3
ms
^C
--- google.com ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 15.453/15.453/15.453/0.000 ms
root ~ # ls
Desktop  README
root ~ # cd /
root / # ls
bin      dev      home     lost+found  mnt      proc      sbin      srv      tmp      var
boot    etc      lib      media       opt      root      shared    sys      usr
root / # pacman -Ss pidgin
extra/libpurple 2.6.6-1
    IM library extracted from Pidgin
extra/pidgin 2.6.6-1
    Multi-protocol instant messaging client
extra/pidgin-encryption 3.0-3
    A Pidgin plugin providing transparent RSA encryption using NSS
extra/purple-plugin-pack 2.6.3-1
    Plugin pack for Pidgin
extra/telepathy-haze 0.3.4-1 (telepathy)
    A telepathy-backend to use libpurple (Pidgin) protocols.
community/guifications 2.16-1
    A set of GUI popup notifications for pidgin
community/pidgin-fonomobutton 0.1.6-1
    Adds a video-chat button to the the conversation window
community/pidgin-libnotify 0.14-3
    pidgin plugin that enables popups when someone logs in or messages you.
community/pidgin-musictracker 0.4.21-2
    A plugin for Pidgin which displays the music track currently playing.
community/pidgin-otr 3.2.0-1
    Off-the-Record Messaging plugin for Pidgin
root / #
```

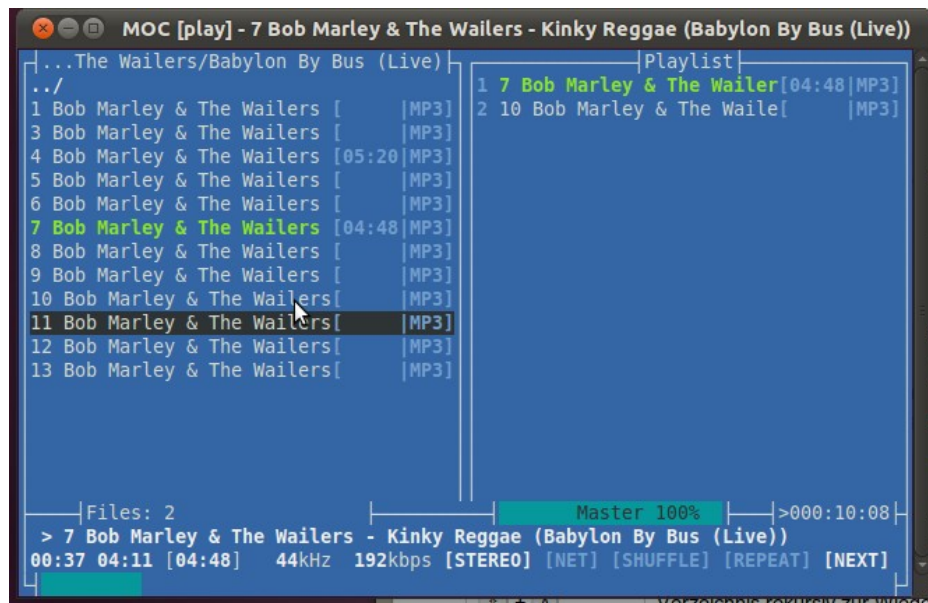
# Operacijski sustavi

```
Left File Command Options Right
/ /var
Name Size MTime Name Size MTime
/.. 384 Sep 8 17:59 /.. 384 Sep 8 17:59
/arpwatch 280 Apr 8 00:34 /CORBA 72 Jul 26 13:42
/cache 136 Apr 27 23:30 /X11 776 Aug 18 03:18
/db 48 Aug 5 1998 /alchemist 112 Apr 8 00:13
/gdm 72 Mar 22 21:46 /cron.d 48 Mar 8 2001
/lib 440 Aug 16 03:52 /cron.daily 192 Jul 9 21:36
/local 48 Feb 6 1996 /cron.hourly 48 May 13 14:26
/lock 152 Sep 8 18:00 /cron.monthly 72 Apr 22 10:09
/log 1200 Sep 2 04:02 /cron.weekly 104 Jul 9 21:36
/mail 10 Jun 5 01:54 /default 72 Apr 22 10:04
/nis 48 Feb 6 1996 /dhcpc 120 Apr 13 01:51
/opt 48 Apr 13 2000 /gconf 176 Sep 7 00:35
/preserve 48 Feb 6 1996 /gimp 72 Apr 8 00:12
/run 568 Sep 8 18:00 /gtk 1552 May 25 08:31
/spool 240 Apr 30 07:56 /hotplug 328 Apr 22 10:03
/state 72 Apr 13 02:22 /i18n 184 Apr 27 23:43
/tmp 48 Sep 8 19:03 /init.d 11 Jun 5 01:37
/yp 48 Jun 8 01:42 /iproute2 208 Apr 8 00:34
/locale 752 Apr 22 10:08
/logrotate.d 144 Jul 9 21:36
/mail 440 Apr 22 10:06
/makedev.d 592 Apr 22 10:03
/midi 176 Apr 8 00:01
/ntp 72 Jun 3 23:16
/oaf 120 Apr 27 23:44
/openldap 192 Aug 20 22:03
/locale

Hint: The file listing format can be customized; do "man mc" for details.
[proski@portland /var]$
1Help 2Menu 3View 4Edit 5Copy 6RenMov 7Wkdir 8Delete 9Pulldn 10Quit
```



# Operacijski sustavi



# Operacijski sustavi

The screenshot shows a terminal window titled "uxterm" with a red title bar. The interface is a text-based menu for a music player. It lists various commands such as "Select Files", "Add Group", "Set Group Title", "Load/Add Playlist", "Write Playlist", "Clear Playlist", "Move Files After", "Move Files Before", "Start Search", "Toggle File Display", and "Toggle Repeat". Below the menu, it displays playback information: "Global Playback: Play current group, including subgroups", "Next Song : 02 You Oughta Know.mp3", and "Mpg1 Layer3 44Khz 160kb Stereo Threads:500". A list of songs is shown, with "[Alanis Morissette - Jagged Little Pill]" highlighted in pink. Playback controls like shuffle, repeat, and volume are also visible.

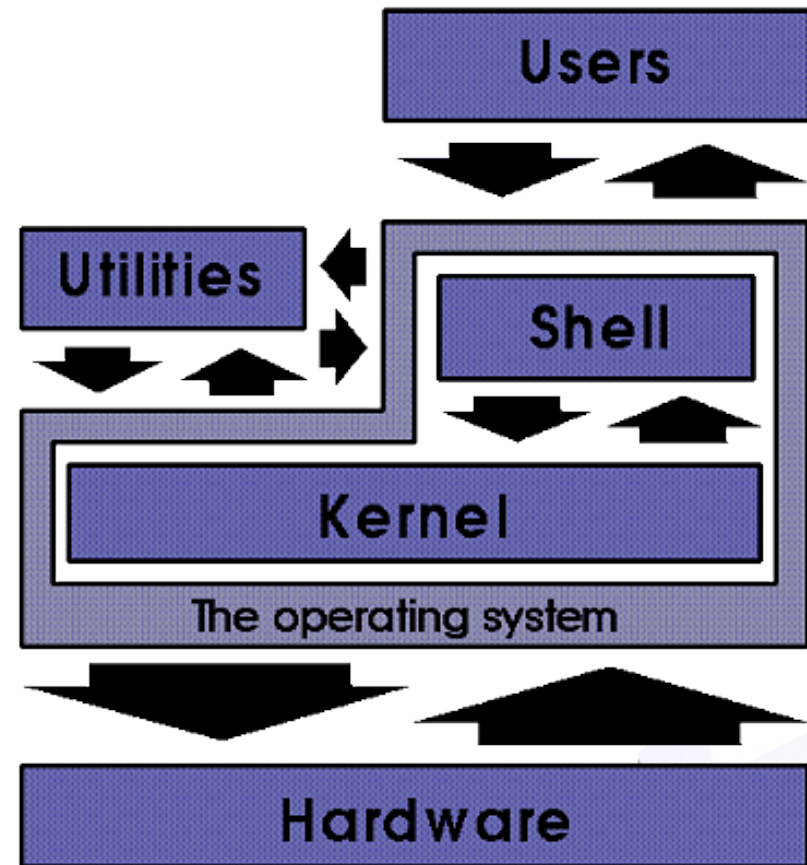
The screenshot shows the Winamp music player interface. The top bar displays the current track: "Lifehouse - First Time (3:23)". Below the playback controls, there is a "Médiathèque" (Library) section with a search bar and a table of tracks. The table has columns for "Artistes", "Album", "N° piste", "Titre", "Durée", "Genre", "Casser", "Compteur", "Dernière lecture", and "Année". The tracks listed are from the album "Who We Are" by Lifehouse. A "Navigation" pane on the left shows a tree view of the media library.

Artistes	Album	N° piste	Titre	Durée	Genre	Casser	Compteur	Dernière lecture	Année
Lifehouse	Who We Are	1	Disarray	3:45	Rock	0	0		2007
Lifehouse	Who We Are	2	First Time	3:23	Rock	0	0		2007
Lifehouse	Who We Are	3	Whatever It Takes	3:27	Rock	0	0		2007
Lifehouse	Who We Are	4	Who We Are	3:27	Rock	0	0		2007
Lifehouse	Who We Are	5	Broken	4:46	Rock	0	0		2007
Lifehouse	Who We Are	6	The Joke	3:56	Rock	0	0		2007
Lifehouse	Who We Are	7	Easier To Be	3:31	Rock	0	0		2007
Lifehouse	Who We Are	8	Make Me Over	3:57	Rock	0	0		2007
Lifehouse	Who We Are	9	Mesmerized	3:13	Rock	0	0		2007
Lifehouse	Who We Are	10	Bridges	4:02	Rock	0	0		2007
Lifehouse	Who We Are	11	Learn You Inside Out	4:26	Rock	0	0		2007
Lifehouse	Who We Are	12	Storm	4:25	Rock	0	0		2007



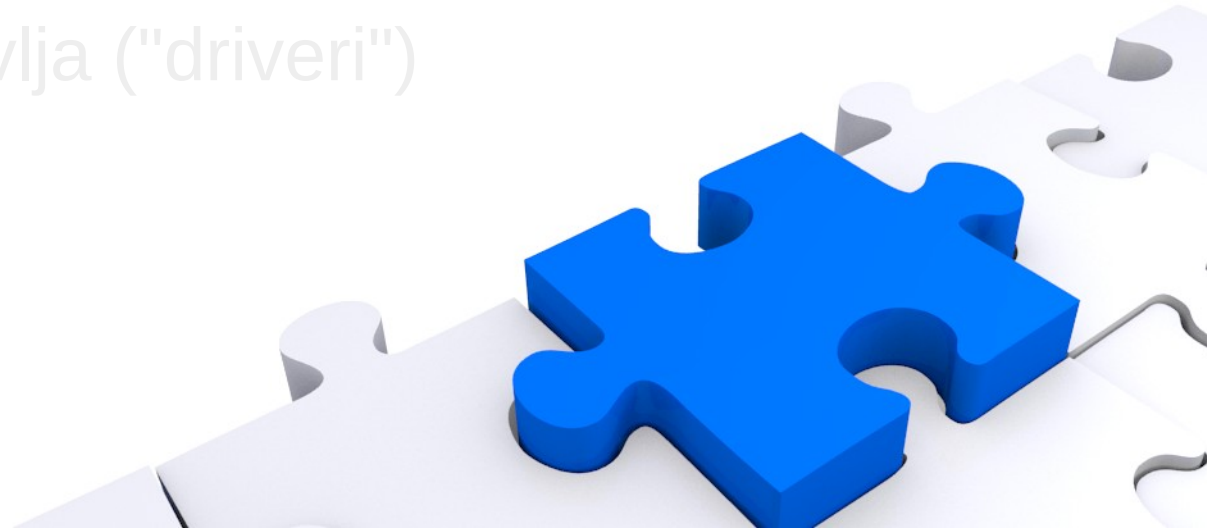
# Operacijski sustavi

- UNIX
  - Bell Labs 1969.
- ULTRIX (1984.)
- AIX
  - IBM 1990.
- Solaris
  - Sun Microsystems 1991.
- Linux
  - Linus Torvald 1991. (student)



# Operacijski sustavi

- Sastavnice operacijskog sustava
  - Jezgra (kernel)
  - Izvršavanje programa
  - Prekidi
  - Modovi (privilegije, bootstrapping)
  - Upravljanje memorijom
  - Pogonivači sklopovlja ("driveri")
  - ...





# Operacijski sustavi

- Instalacija programa
  - \*.exe
  - Upravitelji paketa
  - Vlasnički i besplatni software
  - Otvoreni i slobodni software



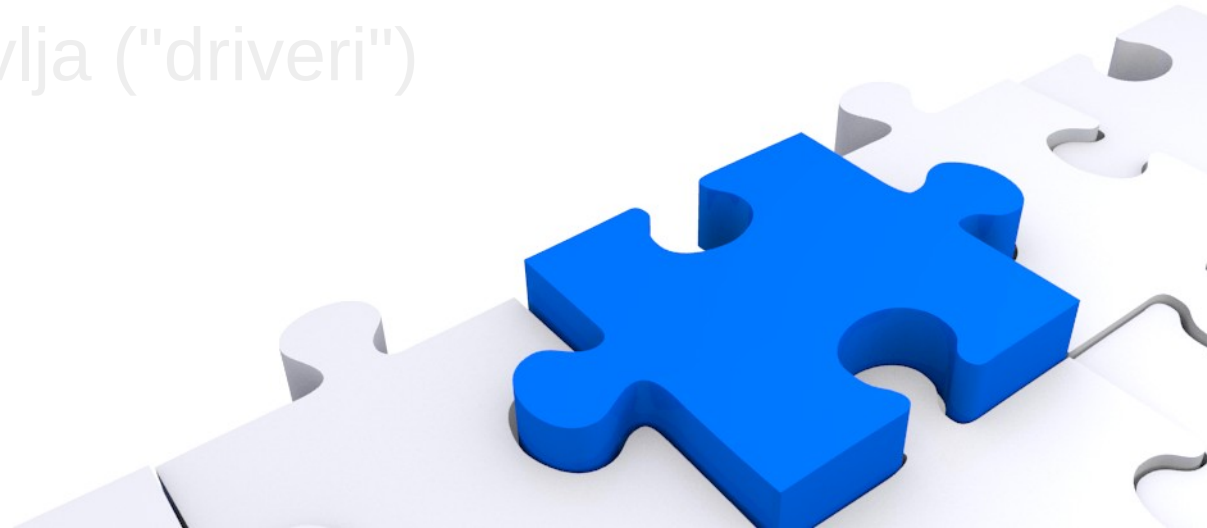
# Operacijski sustavi

- Pisanje programa i procedura
  - Grafičko programiranje
  - (Viši) programski jezici
  - Ljuska jezgre
  - Strojni jezik



# Operacijski sustavi

- Sastavnice operacijskog sustava
  - Jezgra (kernel)
  - Izvršavanje programa
  - **Prekidi**
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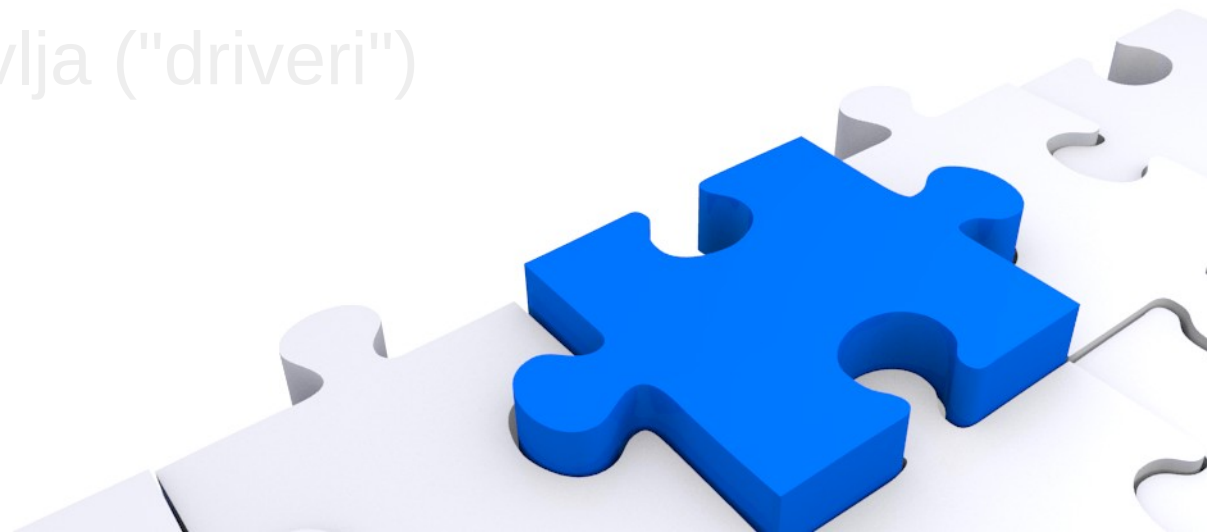
# Operacijski sustavi

- Prekidi
  - Nužni za interakciju
  - Mijenjanje zadataka



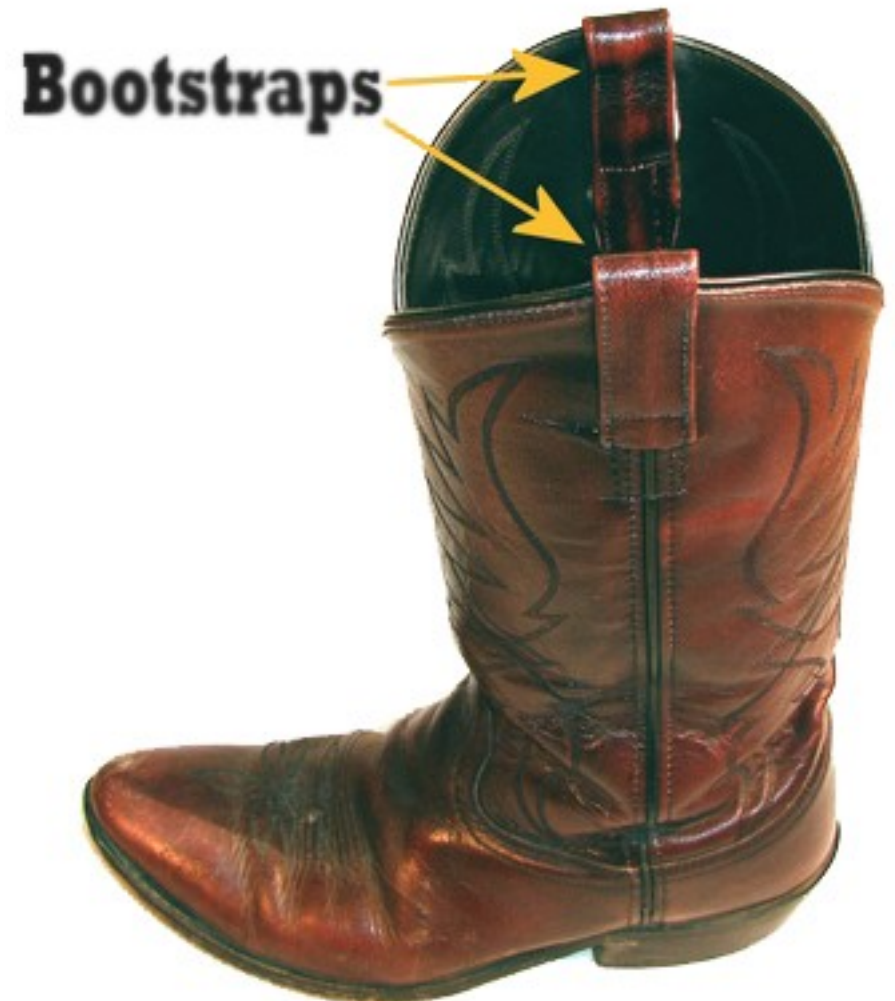
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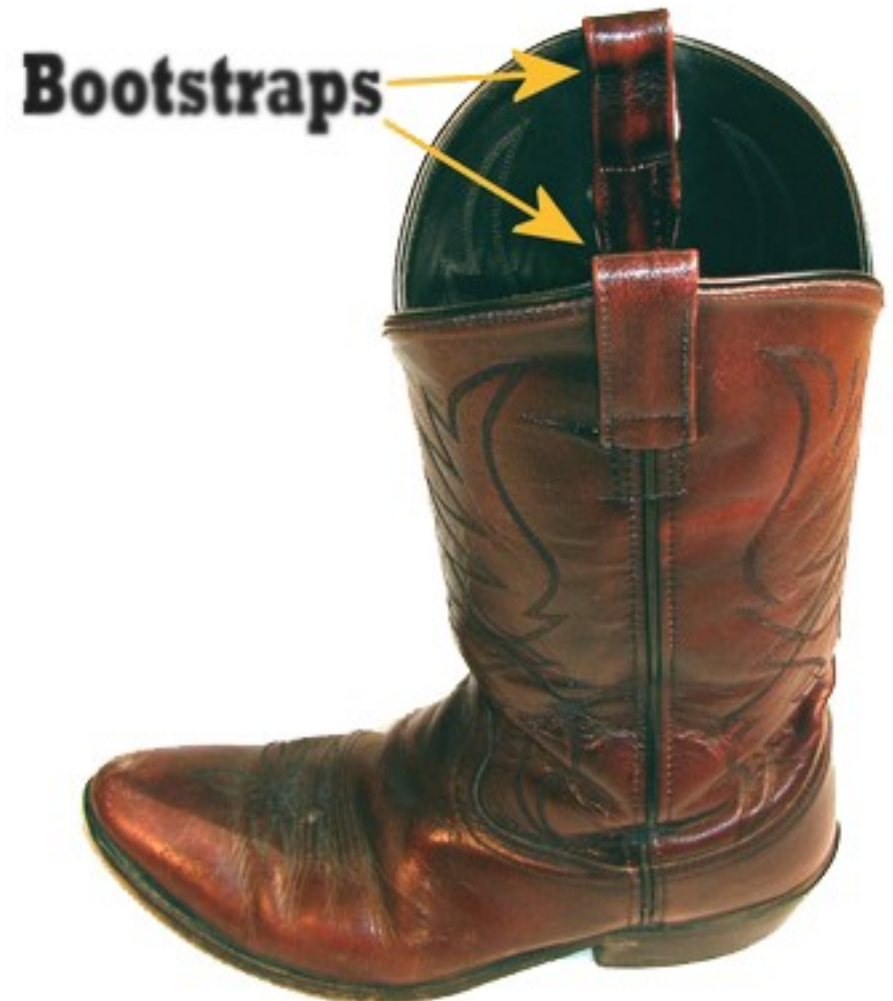
# Operacijski sustavi

- Bootstrapping

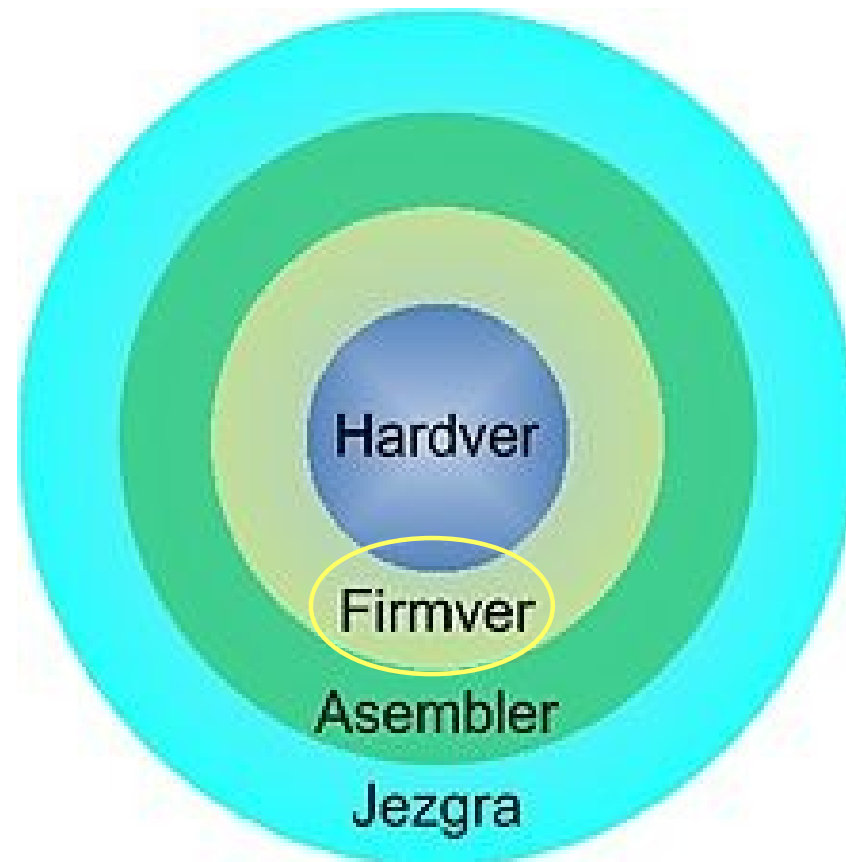


# Operacijski sustavi

- Bootstrapping
- Modovi i privilegije
  - Alati, strojevi, oruđa
  - Djeca i odrasli
- Sigurnost
  - Uklanjanje
  - Zaključavanje
  - Identifikacija



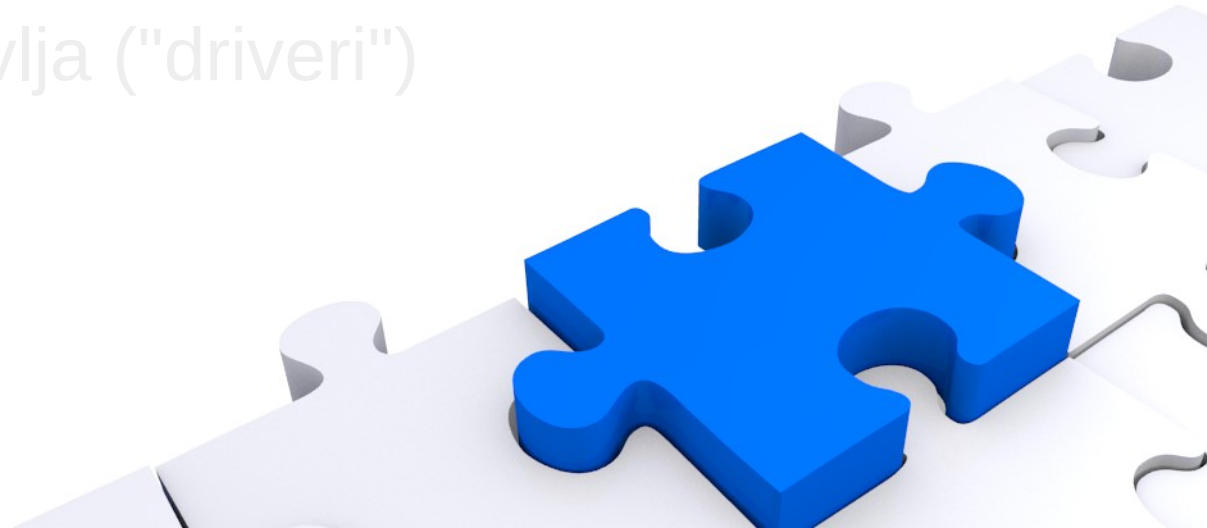
# Operacijski sustavi





# Operacijski sustavi

- **Sastavnice operacijskog sustava**
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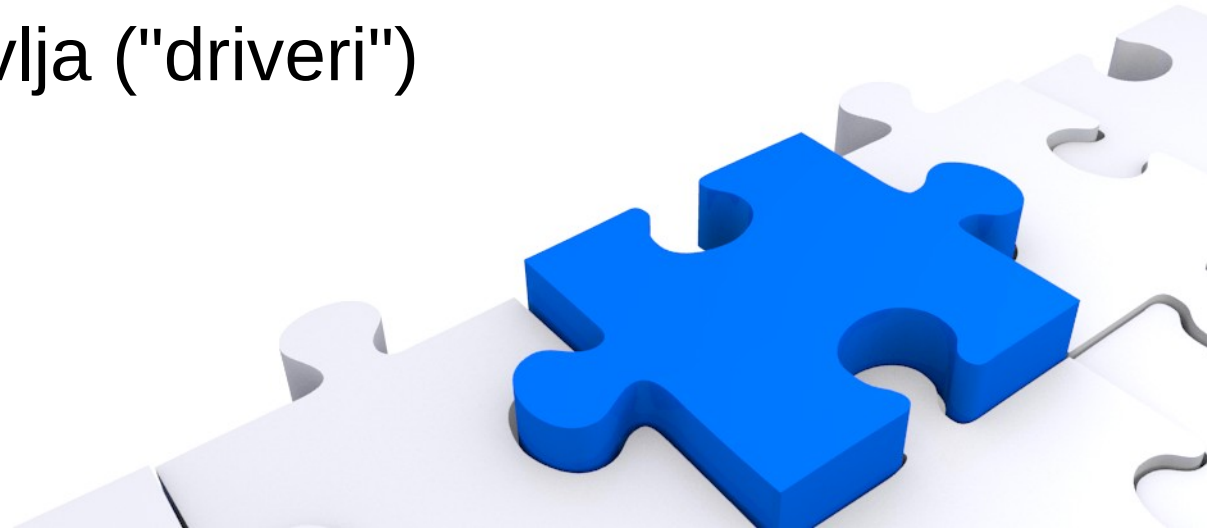


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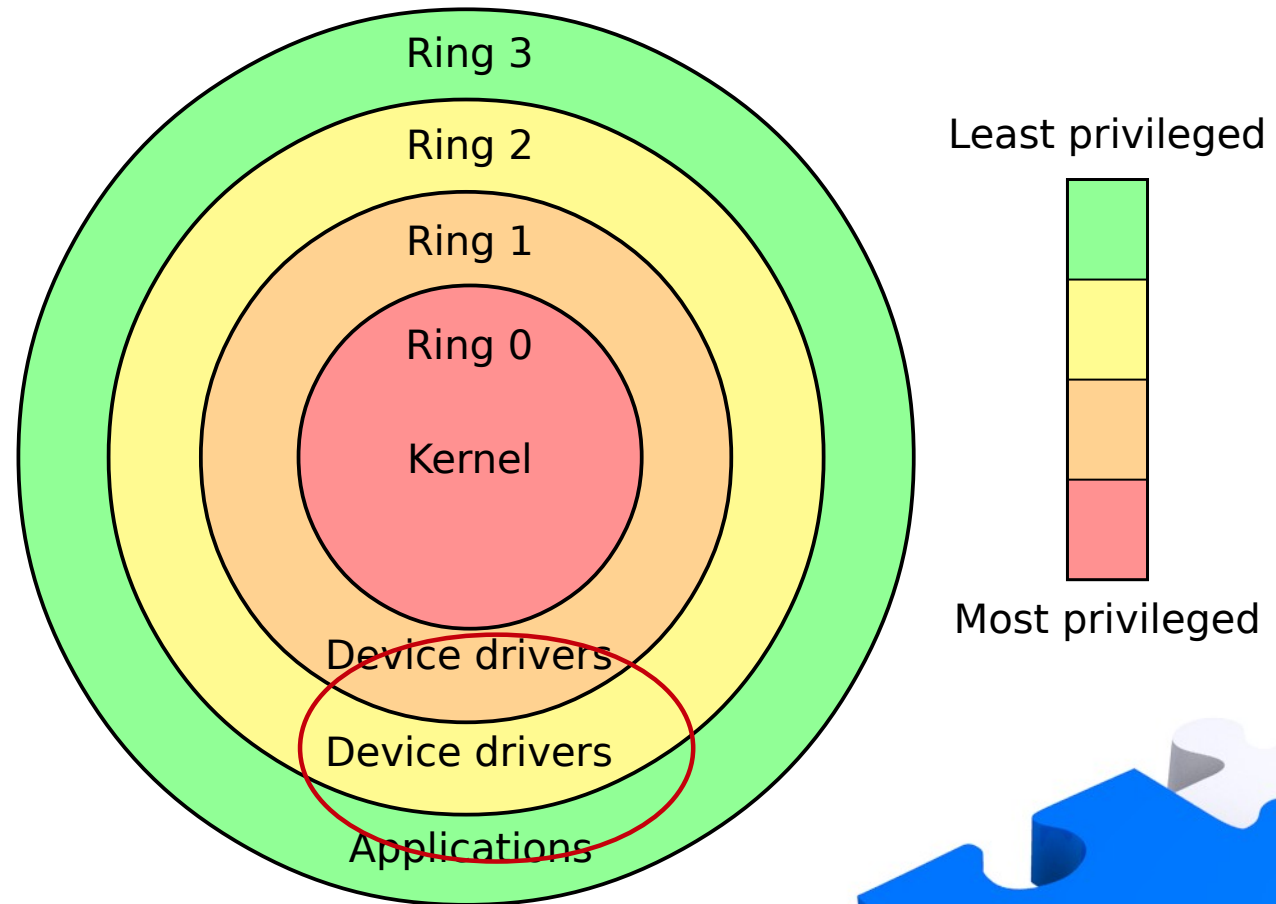


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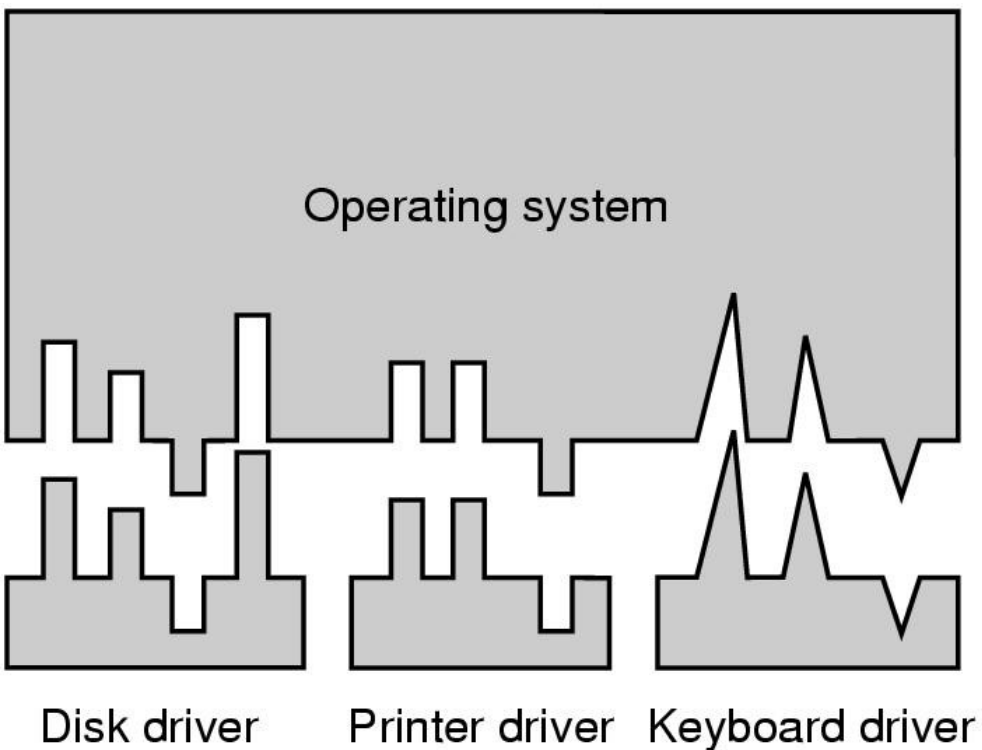
# Operacijski sustavi

- Pogonivači
  - Apstrakcija strojnog uređaja
  - Strojovina dolazi od različitih proizvođača
  - Potrebno ju je upravljati programski

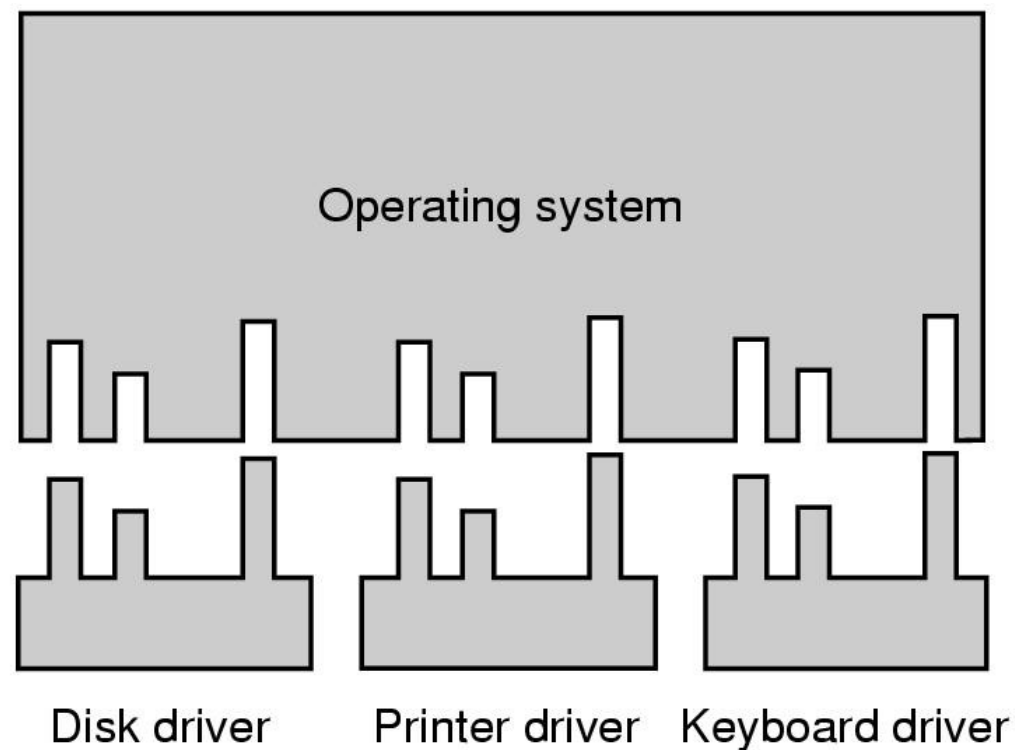


# Operacijski sustavi

- Pogonivači
  - Apstrakcija strojnog uređaja



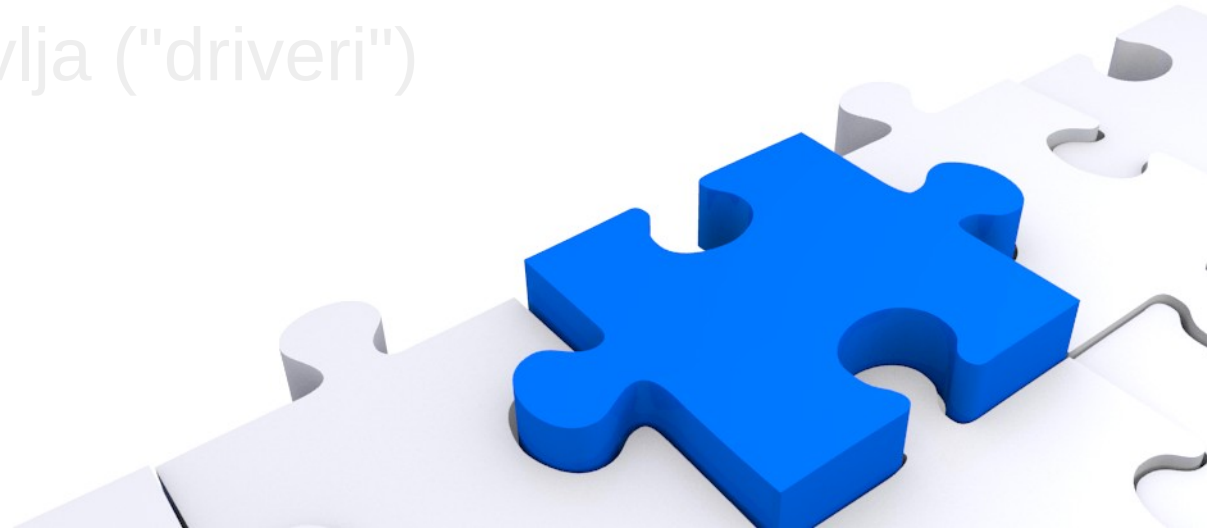
(a)



(b)

# Operacijski sustavi

- Sastavnice operacijskog sustava
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  - Modovi (privilegije, bootstrapping)
  - Upravljanje memorijom
  - Pogonivači sklopovlja ("driveri")
  - ...



# Operacijski sustavi

- Klasifikacija operacijskih sustava I
  - Multi-user
  - Multiprocessing
  - Multitasking
  - Multithreading
  - Real time





- Multi-user
  - Dopušta da jedan ili više korisnika pokreću programe istovremeno
  - Postoje OS-avi koji dopuštaju 100 ili 1000 konkurentnih korisnika
- Multiprocessing
  - Podržava pokretanje jednog programa na više procesora
- Multitasking
  - Dopušta više programa radi istovremeno (konkurentno)
- Multithreading
  - Više dretvi (djelova programa) može raditi istovremeno
- Real time
  - Rad u stvarnom vremenu



# Operacijski sustavi

- Klasifikacija operacijskih sustava II
  - Vlasnički
  - Ne-vlasnički
- Klasifikacija operacijskih sustava III
  - Mobilni
  - Desktop

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The free encyclopedia

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مصرى  
Nederlands  
नेपाली  
Norsk bokmål  
Português  
Pycckий  
Simple English  
Slovenčina  
Suomi  
Svenska  
Vepsäkielä  
中文

كلمة: Inko

## List of operating systems

From Wikipedia, the free encyclopedia

This is a **list of operating systems**. Computer operating systems can be categorized in many ways. This list is organized by **category**.

**Contents** (hide)

- Proprietary
  - 1.1 Acorn Computers
  - 1.2 Amiga Inc.
  - 1.3 Apple Inc.
  - 1.4 Apollo Computer
  - 1.5 Atari
  - 1.6 BAE Systems
  - 1.7 Be Inc.
  - 1.8 Bell Labs
  - 1.9 Bull SAG
  - 1.10 Burroughs Corporation
  - 1.11 Control Data Corporation
  - 1.12 Convergent Technologies
  - 1.13 Data General
  - 1.14 DataPoint
  - 1.15 DDC-L Inc.
  - 1.16 Digital Research, Inc.
  - 1.17 Digital/Tridium Computers/CompaqHP
  - 1.18 ENIGMA AB
  - 1.19 Fujitsu
  - 1.20 General Electric
  - 1.21 Google
  - 1.22 Green Hills Software
  - 1.23 Heathkit/Zenith Data Systems
  - 1.24 Hewlett-Packard
  - 1.25 Honeywell
  - 1.26 Intel Corporation
  - 1.27 IBM
    - 1.27.1 On early IBM mainframes (1400, 1800, 701, 704, 709, 7090, and 7094)
    - 1.27.2 On IBM S/360, S/370, and successor mainframes
    - 1.27.3 On IBM PC and Intel x86 based architectures
    - 1.27.4 On other IBM hardware platforms
  - 1.28 International Computers Limited
  - 1.29 LynxWorks (originally Lynx Real-time Systems)
  - 1.30 Micrium Inc.
  - 1.31 Microsoft Corporation
  - 1.32 MontaVista Software
  - 1.33 NCR Corporation
  - 1.34 Nintendo
  - 1.35 Novell
  - 1.36 Quados Systems
  - 1.37 RCA
  - 1.38 Rowlett's
  - 1.39 Samsung Electronics
  - 1.40 SCO / The SCO Group<sup>[1]</sup>
  - 1.41 Scientific Data Systems (SDS)
  - 1.42 SYSGO
  - 1.43 Tandy Corporation
  - 1.44 TRON Project
  - 1.45 Unilys
  - 1.46 UNIVAC (later Unilys)
  - 1.47 Wang Laboratories
  - 1.48 Wind River Systems
  - 1.49 Other
    - 1.49.1 Lisp-based
    - 1.49.2 Non-standard language-based
    - 1.49.3 Other proprietary non-Unix-like
    - 1.49.4 Other proprietary Unix-like and POSIX-compliant
- 2 Non-proprietary
  - 2.1 Unix-like
    - 2.1.1 Research Unix-like and other POSIX-compliant
    - 2.1.2 Free and open source Unix-like
    - 2.1.3 Other Unix-like
  - 2.2 Non-Unix-like
    - 2.2.1 Research non-Unix-like
    - 2.2.2 Free and open source non-Unix-like
- 3 Disk operating systems
- 4 Network operating systems
- 5 Web operating systems
- 6 Generic/commodity and other
- 7 For Elektronika BK
- 8 Hobby
- 9 Embedded
  - 9.1 Personal digital assistants (PDAs)
  - 9.2 Digital media players
  - 9.3 Smartphones and Mobile phones
  - 9.4 Routers
  - 9.5 Other embedded
- 10 Capability-based
  - 10.1 LEGO Mindstorms
  - 10.2 Other capability-based
- 11 See also
  - 11.1 Category links
- 12 References
- 13 External links

# Operacijski sustavi

- Klasifikacija operacijskih sustava IV
  - Android
  - BSD
  - IOS
  - Linux
  - OS X
  - ...
  - Microsoft Windows
  - Windows Phone
  - IBM z/OS



# Operacijski sustavi

- Klasifikacija operacijskih sustava IV

- Android

- BSD

- IOS

- Linux

- OS X

- ...

- Microsoft Windows

- Windows Phone

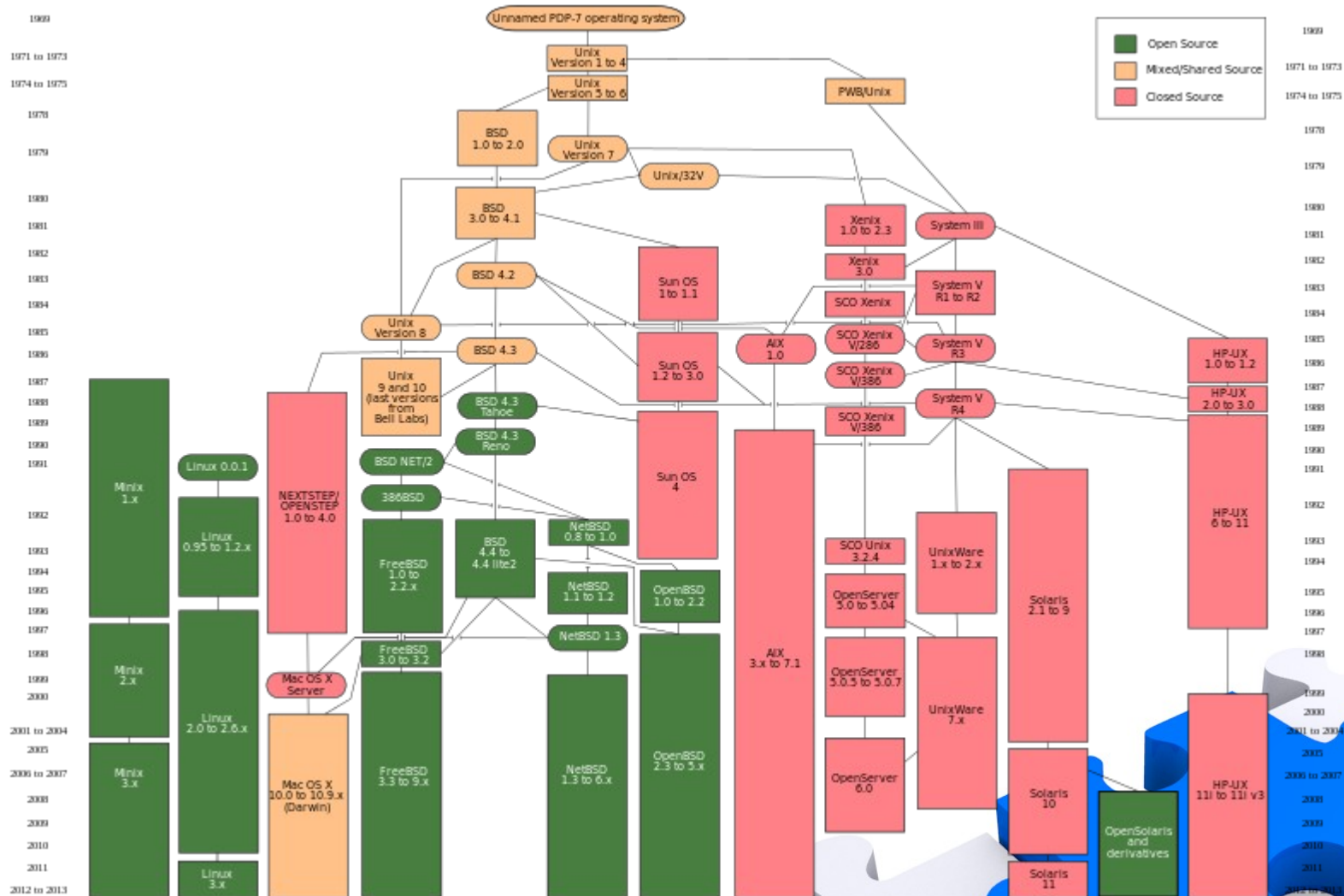
- IBM z/OS

} Unix ("Linux")

} Non-Unix



# Operacijski sustavi



Unix history



# Operacijski sustavi



Forget about viruses.



Is your system unstable?



Linux protects your computer.



Don't pay \$100 for your operating system.



No more c\*\*pware.



Freedom!



When the system has installed, why would you *still* need to install stuff?



Forget about drivers.



Update all your software with a single click.



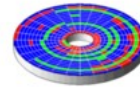
Why copy software illegally if you can get it for free?



Need new software? Don't bother searching the web, Linux gets it for you.



Jump into the next generation of desktops.



Does your digital life seem fragmented?



Choose what your desktop looks like.



Why does your Windows get slower day after day?



Do something for the environment.



No back doors in your software.



Enjoy free and unlimited support.



Too many windows? Use workspaces.



No big mess in your start menu.



Don't wait years for bugs to be solved; report and track them down.



Are you tired of restarting your computer all the time?

*It's alive!!*

Let your old computer have a second life.



Play hundreds of games for free.



Help other countries, and your own.



Use MSN, AIM, ICQ, Jabber, with a single program.



Get a great music player.



Keep an eye on the weather.

[www.whylinuxisbetter.net](http://www.whylinuxisbetter.net)

# Operacijski sustavi



There is proprietary software you can't live without



You're a hardcore gamer



You work in the book/printing industry



Your hardware is not yet supported

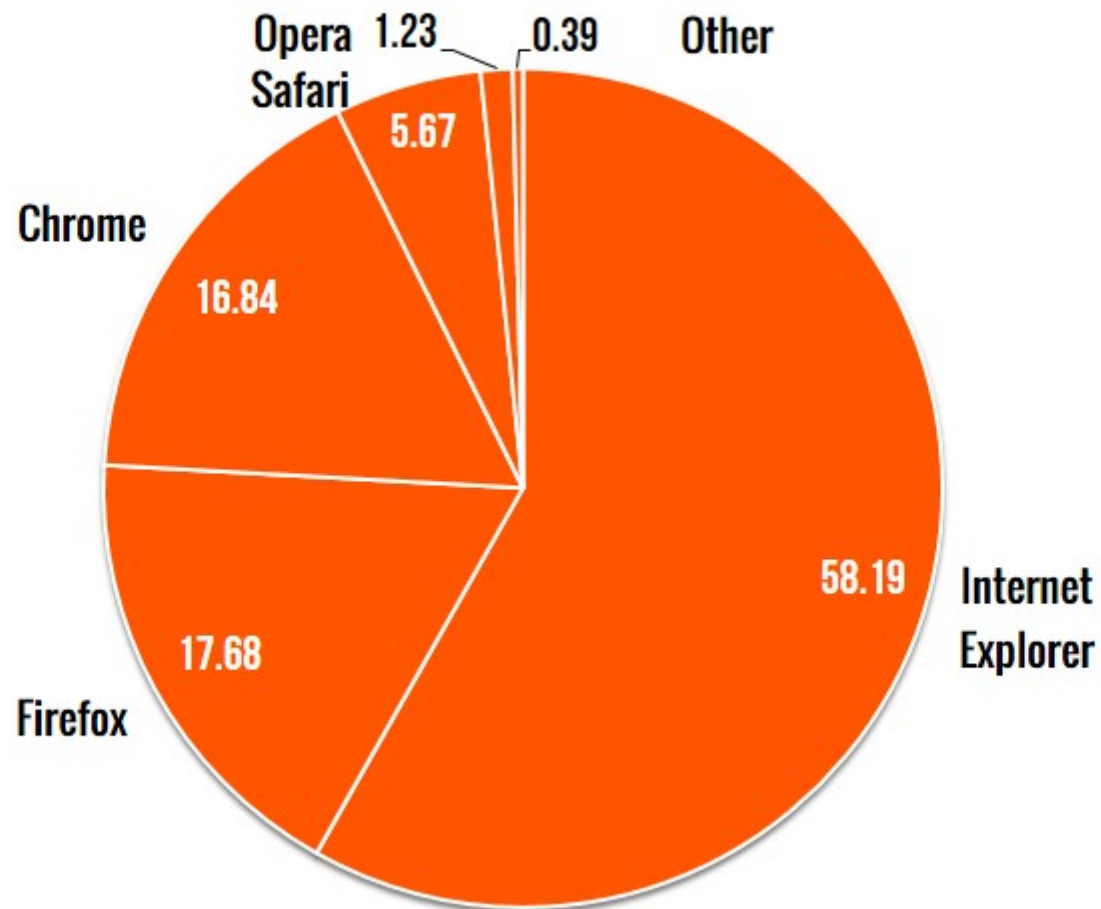




# Operacijski sustavi

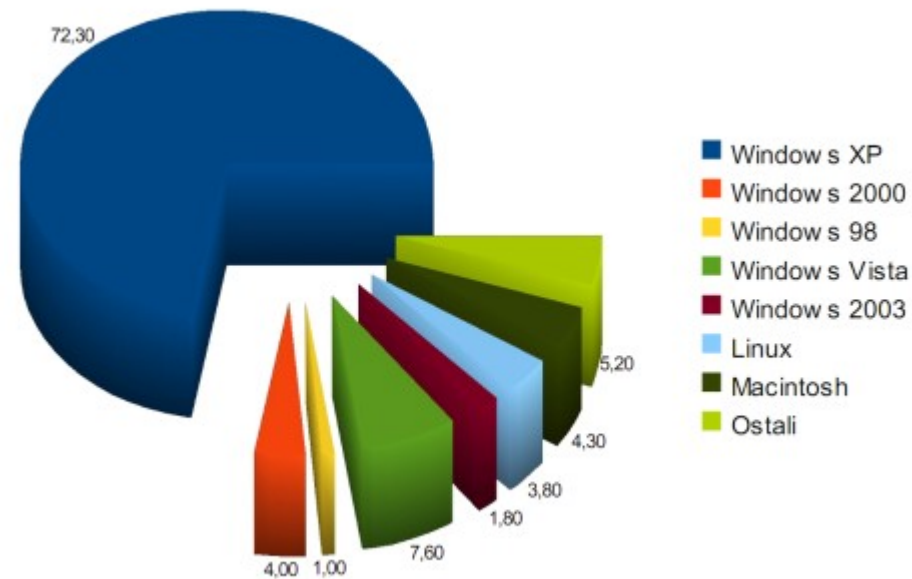
## WORLDWIDE DESKTOP BROWSER MARKET SHARE: 02/2014

Percent



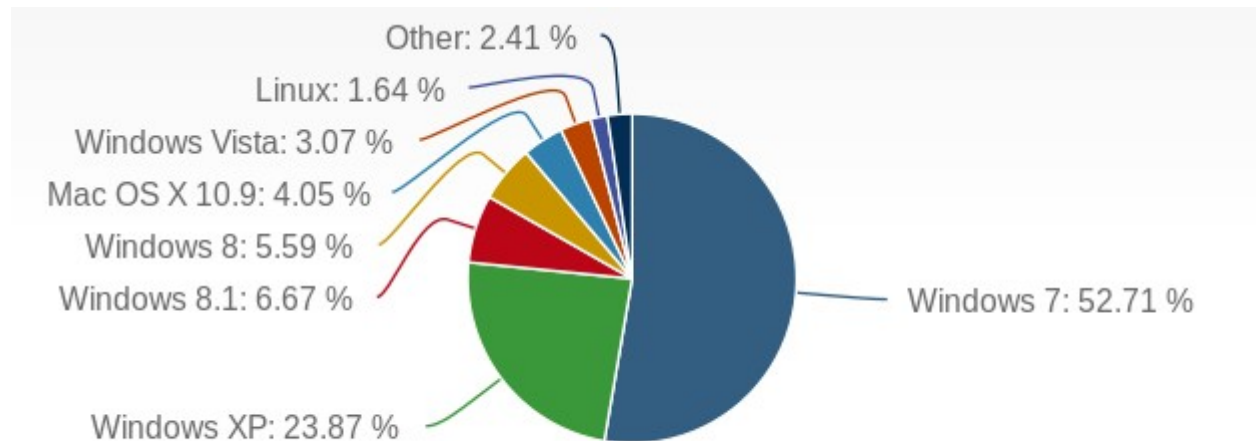
# Operacijski sustavi

## Tržište



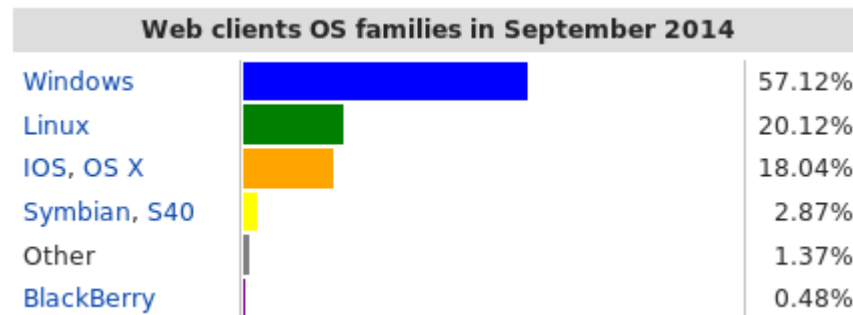
# Operacijski sustavi

## Tržište



# Operacijski sustavi

## Tržište

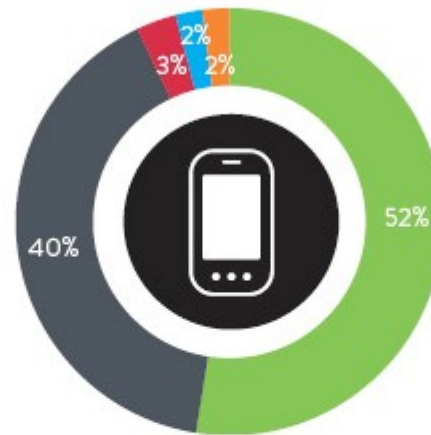


# Operacijski sustavi

## TOP US SMARTPHONE OPERATING SYSTEMS BY MARKET SHARE

# Tržište

DURING Q2 2013



Read as: During Q2 2013 an average of 52% of smartphone owners in the US had a handset that runs the Android operating system.

**nielsen** AN UNCOMMON SENSE OF THE CONSUMER™

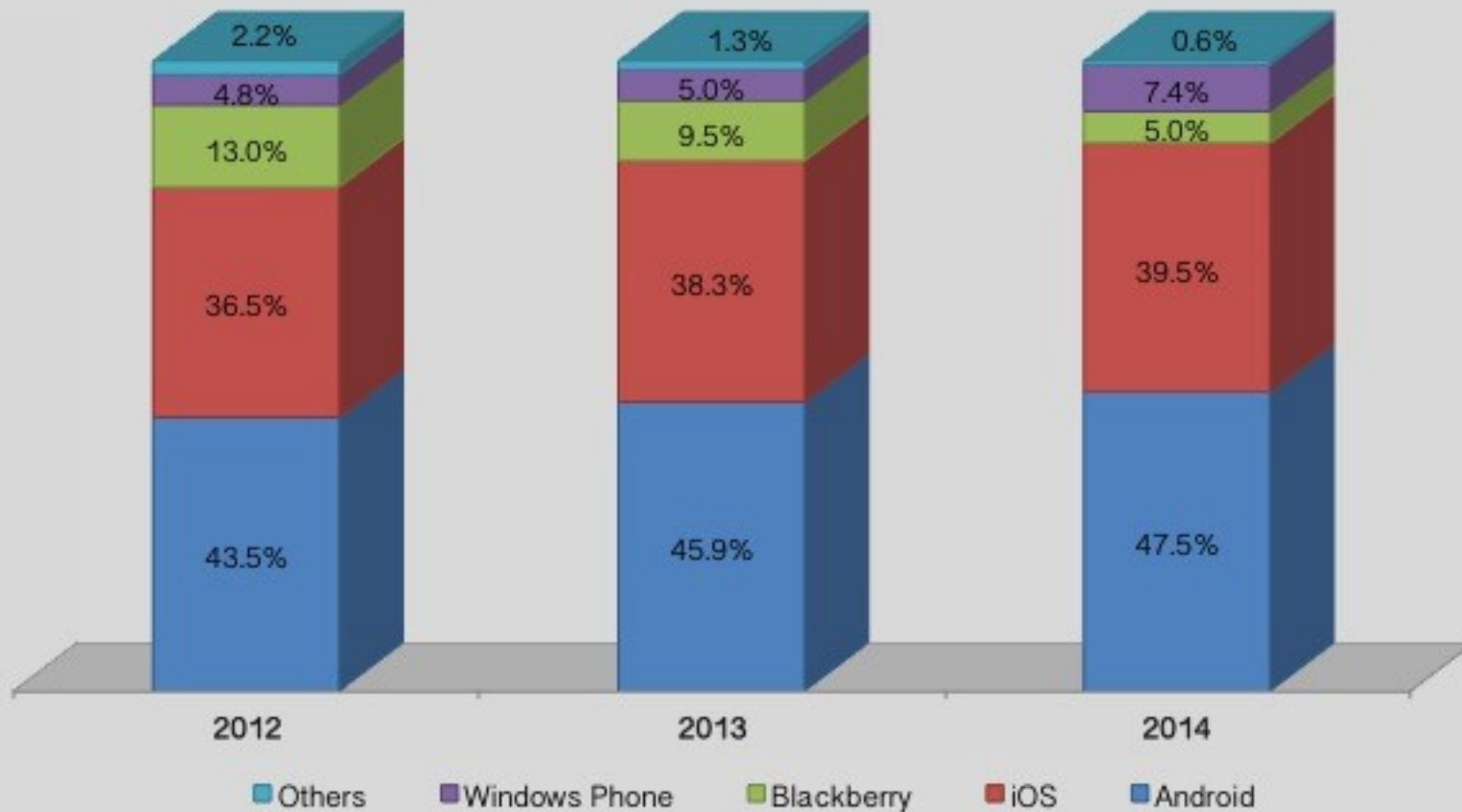
Source: Nielsen

Copyright © 2013 The Nielsen Company

# Operacijski sustavi

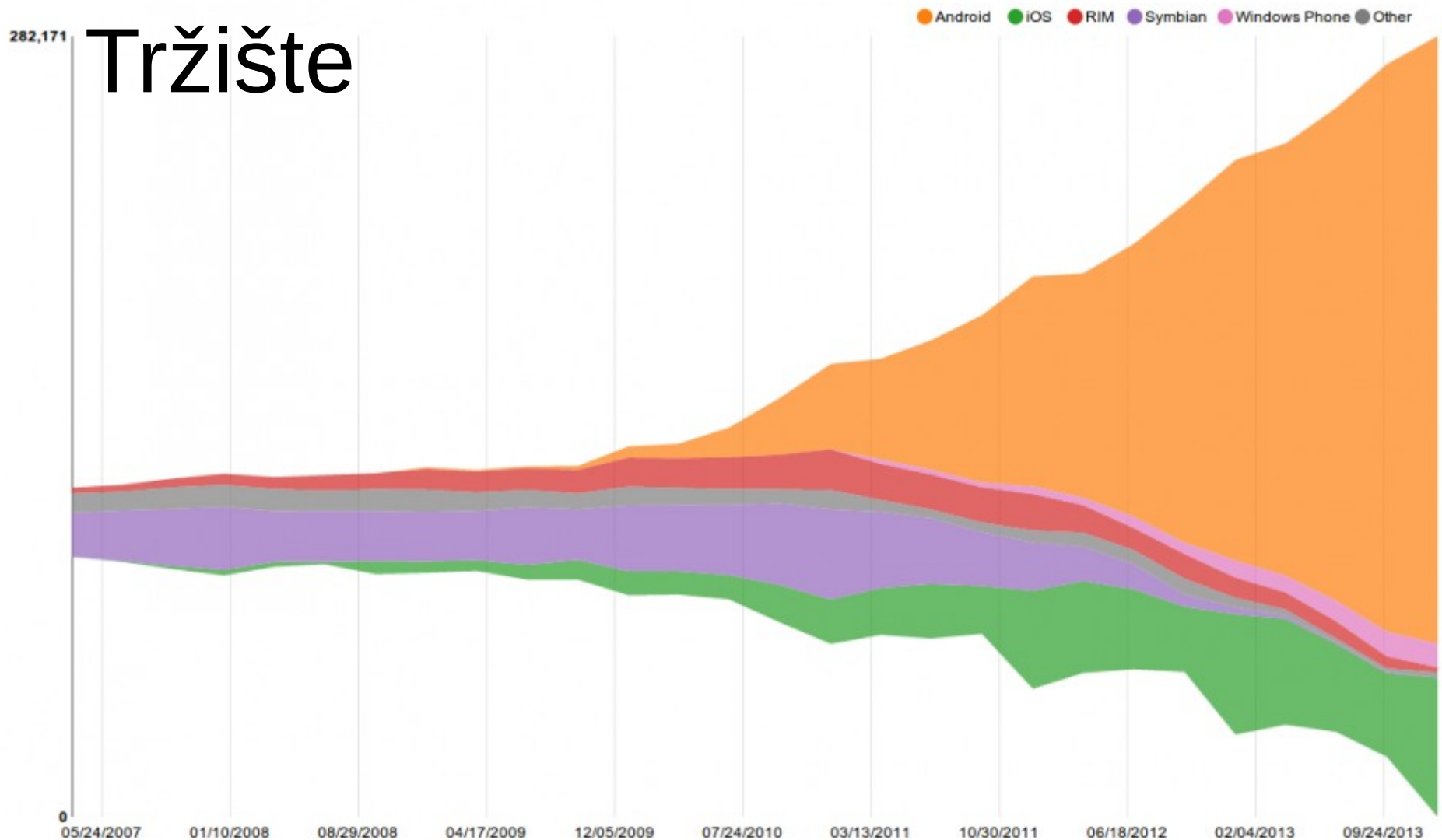
## TOP US SMARTPHONE OPERATING SYSTEMS

### US SMARTPHONE USER SHARE , BY OS, 2012 -2014

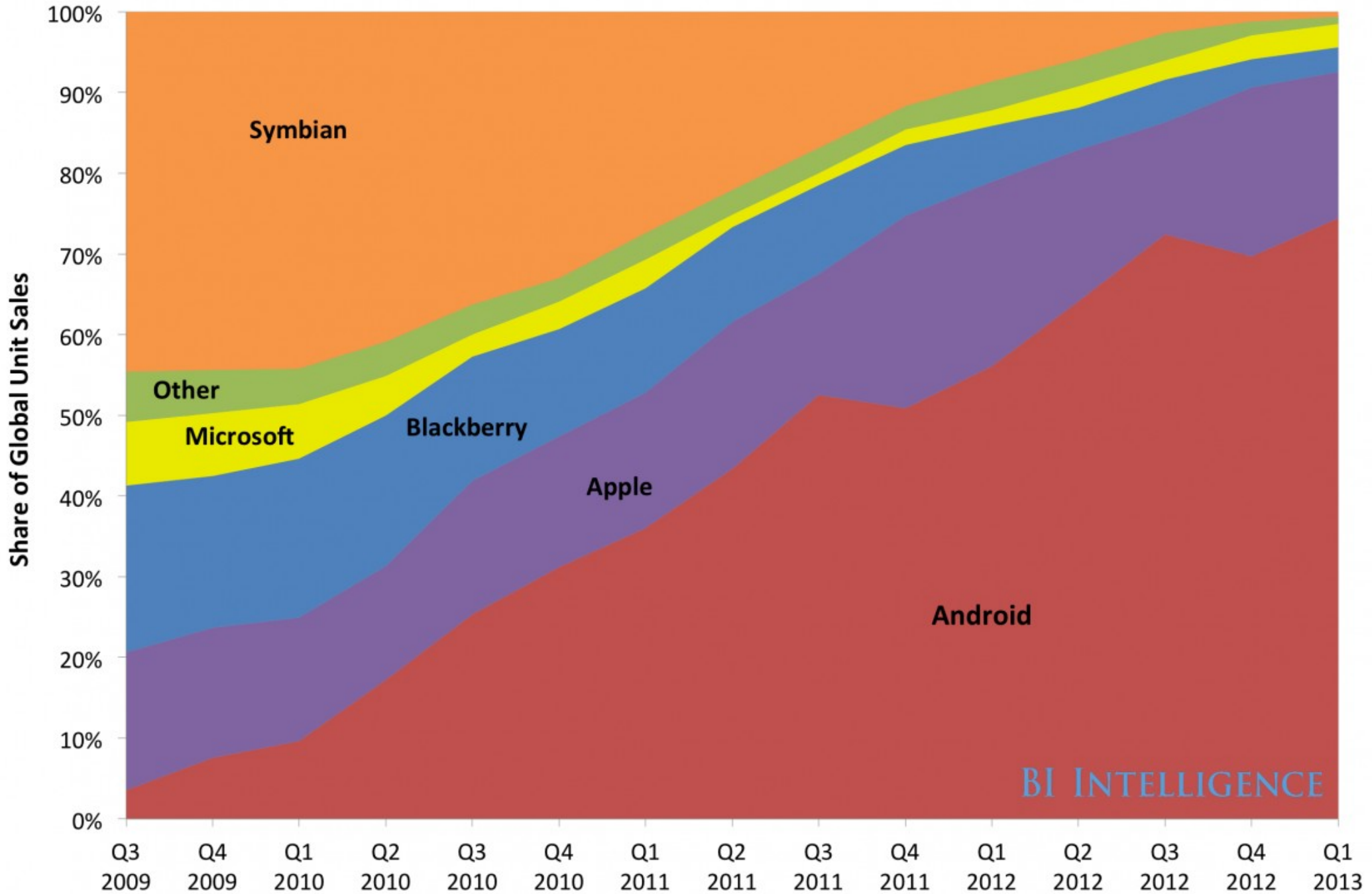


# Operacijski sustavi

Worldwide Smartphone Sales by Operating System



# Global Smartphone Market Share By Platform



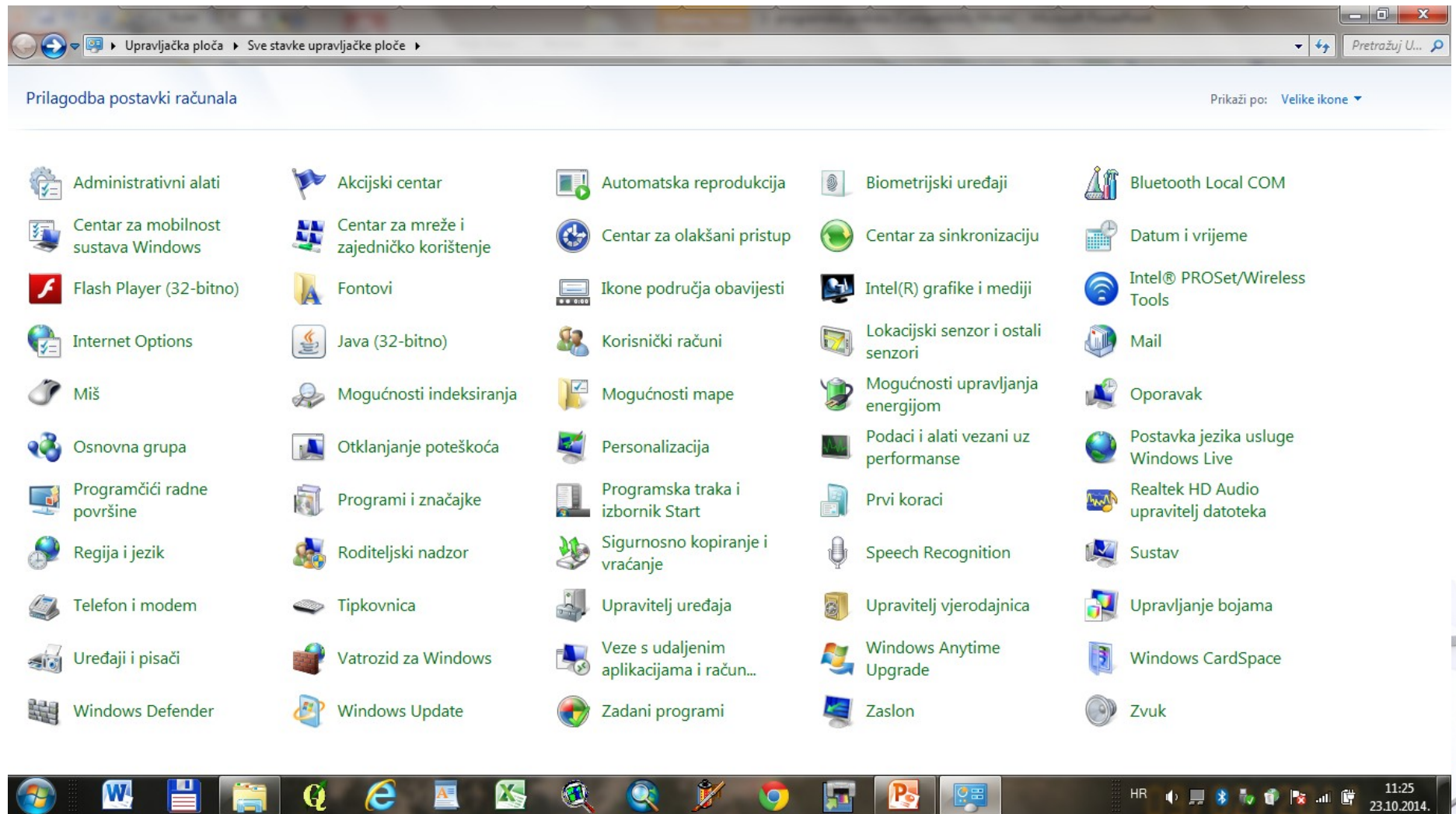


# Operacijski sustavi

- Usporedba korisničkog sučelja (GUI-a)



# Operacijski sustavi



# Software Manager

File Edit View Help

Categories



**Featured**  
45 packages



**All Packages**  
6775 packages



**Internet**  
5815 packages



**Sound and video**  
192 packages



**Graphics**  
1150 packages



**Office**  
342 packages



**Games**  
1896 packages



**Accessories**  
3214 packages



**System tools**  
2062 packages



**Fonts**  
312 packages



**Science and Education**  
2302 packages



**Programming**  
4430 packages

6775 packages are currently available

No ongoing actions

# Software Manager

File Edit View Help

Categories



**Featured**  
45 packages



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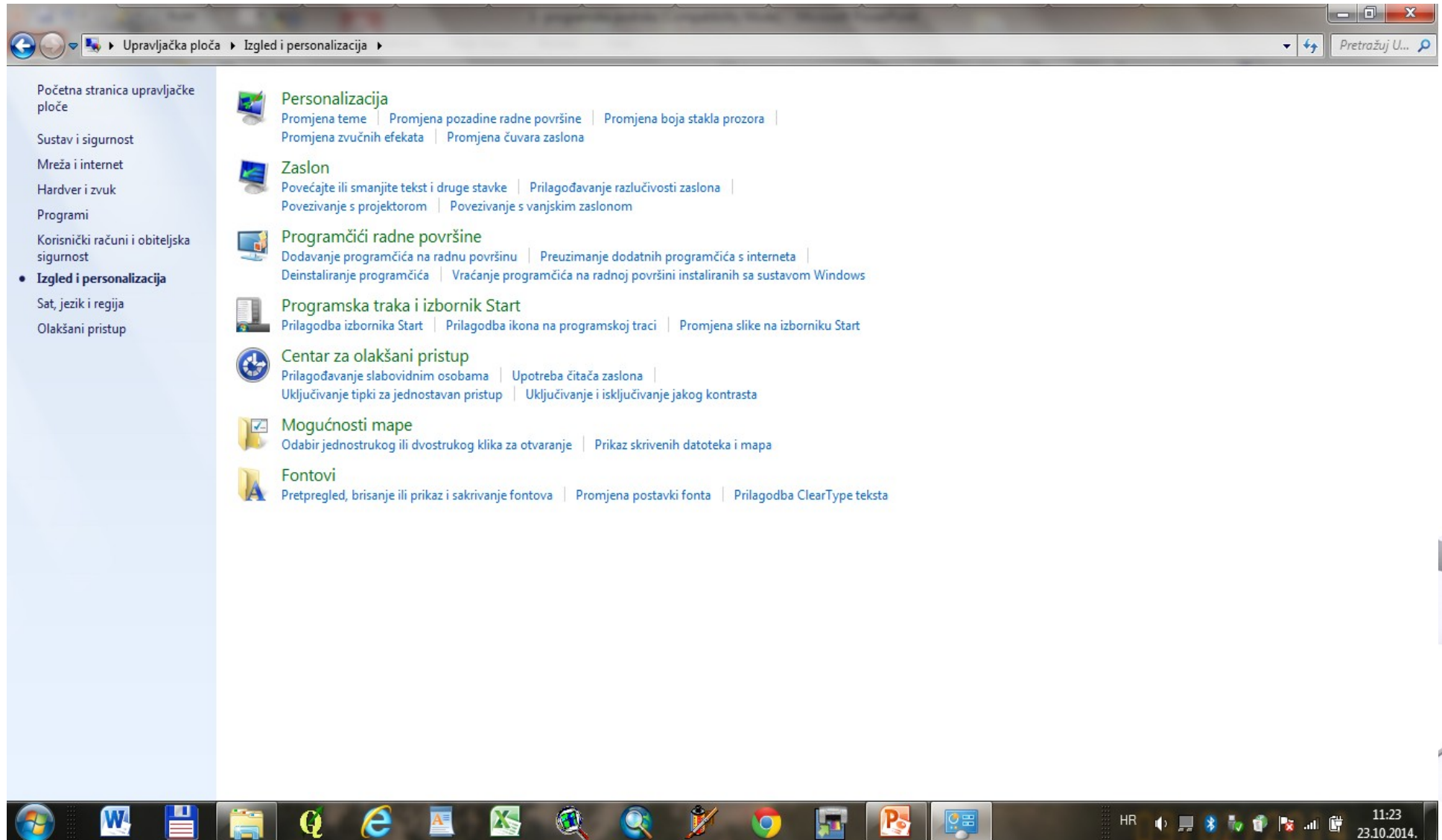


**Programming**  
4430 packages

6775 packages are currently available

No ongoing actions



















# Operacijski sustavi













Appearance

-  Backgrounds
-  Effects
-  Fonts
-  Themes

Preferences

-  Applets
-  Date & Time
-  Applications & Removable Media
-  Desklets
-  Desktop
-  Extensions
-  General
-  Hot Corners
-  Panel
-  Screensaver & Lock Settings
-  Window Tiling and Edge Flip
-  Account details
-  Windows
-  Workspaces
-  Regional Settings
-  Universal Access
-  Languages
-  Startup Programs

Hardware

-  System Info
-  Keyboard
-  Mouse and Touchpad
-  Networking
-  Display
-  Bluetooth
-  Power Management
-  Sound
-  Color
-  Printers

Administration

-  Login Screen
-  Device Drivers
-  Software
-  Users and

Exploring - ppt

File Edit View Tools Help

ppt

All Folders

- My Computer
  - 3.5 Floppy (A:)
  - (C:)
    - Acroread
    - Bug
    - ClientWORKS
    - Corel50
    - Diag
    - Digital
    - Exchange
    - Factory
    - host-news
    - Internet Explorer 4.0 S
    - Marijan
    - mjenjacnica
    - Multimedia Files
    - nastava
      - ppp
      - primrac
        - predavanja
          - doc
          - html
          - ppt
          - tools
        - program
        - program\_vele
      - Olympus
      - Program Files

Contents of 'ppt'

Name	Size	Type	Modified	Attributes
slike		File Folder	1998.10.12 11:47	
ikona.jpg	3KB	JPEG Image	1998.10.26 10:58	A
Image10.jpg	71KB	JPEG Image	1998.10.26 12:06	A
Image14.jpg	30KB	JPEG Image	1998.10.26 12:35	A
Image17.jpg	59KB	JPEG Image	1998.10.26 12:50	A
Image18.jpg	41KB	JPEG Image	1998.10.26 12:56	A
Image19.jpg	69KB	JPEG Image	1998.10.26 12:59	A
pred05.ppt	1.17...	Microsoft PowerPoin...	1998.11.02 14:21	A
pred01.ppt	1.04...	Microsoft PowerPoin...	1998.11.02 14:26	A
pred02.ppt	270KB	Microsoft PowerPoin...	1998.11.02 14:26	A
pred03.ppt	200KB	Microsoft PowerPoin...	1998.11.02 14:26	A
pred04.ppt	179KB	Microsoft PowerPoin...	1998.11.02 14:27	A
Image3.jpg	43KB	JPEG Image	1998.11.02 14:36	A
Image4.jpg	57KB	JPEG Image	1998.11.02 14:38	A
Image5.jpg	97KB	JPEG Image	1998.11.02 14:43	A
Image6.jpg	40KB	JPEG Image	1998.11.02 14:47	A
Image7.jpg	21KB	JPEG Image	1998.11.02 14:48	A
Image8.jpg	0KB	JPEG Image	1998.11.02 14:54	A
Image9.jpg	36KB	JPEG Image	1998.11.02 14:57	A
Image11.jpg	48KB	JPEG Image	1998.11.02 15:07	A
Image12.jpg	90KB	JPEG Image	1998.11.02 15:33	A
Image15.jpg	83KB	JPEG Image	1998.11.02 15:38	A

1 object(s) selected

178KB

File Edit View Go Bookmarks Help



Location: /

Location: /



- My Computer
  - Home
  - Desktop
  - Documents
  - Music
  - Pictures
  - Videos
  - Downloads
  - File System**
  - Trash
- Devices
  - 936 GB Vol...
  - 11 GB Volu...
  - 11 GB Volu...
  - 54 GB Volu...
- Network
  - Network

bin	boot	cdrom	dev
etc	home	lib	lib64
lost+found	media	mnt	opt
proc	root	run	sbin
srv	sys	tmp	usr
var	core	initrd.img	initrd.img.old
vmlinuz			

25 items, Free space: 3,1 GB



# Operacijski sustavi

ime.prezime@izor.hr

