



VERZIONIRANJE IZVORNOG KODA

U slučaju požara



1. git commit



2. git push



3. napusti zgradu

In case of fire



1. git commit



2. git push



3. leave the building

https://neoteric.eu/wp-content/uploads/2016/04/in_case_of_fire.png



Sustavi za verzioniranje koda

Definicije

Skup alata koji imaju sposobnost praćenja različitih verzija izvornog koda

Jon Loeliger, Matthew McCullough (2012)

Kategorija programskih alata koji pomažu razvojnim timovima praćenje promjena na kodu tijekom vremena

<https://www.atlassian.com/git/tutorials/what-is-version-control>

Varijacije na temu

VCS: Version Control System

SCM: Source Code Manager

RCS: Revision Control System

Kalkulator -> Digitron | Sustav za verzioniranje koda -> Git

Git is an Open Source project covered by the GNU General Public License version 2 (some parts of it are under different licenses, compatible with the GPLv2). It was originally written by Linus Torvalds with help of a group of hackers around the net.

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

Povijest

**M.J. Rochkind. “The Source Code Control System”
IEEE Transactions on Software Engineering 1(4) (1975): 364-370**



Marc J. Rochkind was born in Baltimore, Md., on June 12, 1948. He received the B.S.M.E. degree from the University of Maryland, College Park, and the M.S.M.E. degree from Rutgers University, New Brunswick, N.J., in 1970 and 1972, respectively.

Since 1970 he has been a member of the Technical Staff at Bell Laboratories, Murray Hill, N.J. He is currently engaged in the development of software systems for use by Bell Telephone companies.

Walter F. Tichy. “RCS: A System from Version Control” Software Practice and Experience 15(7) (1985): 637-654

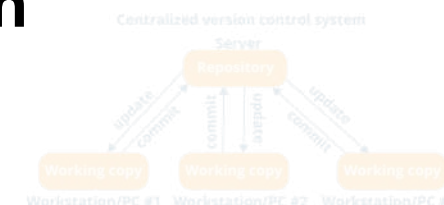
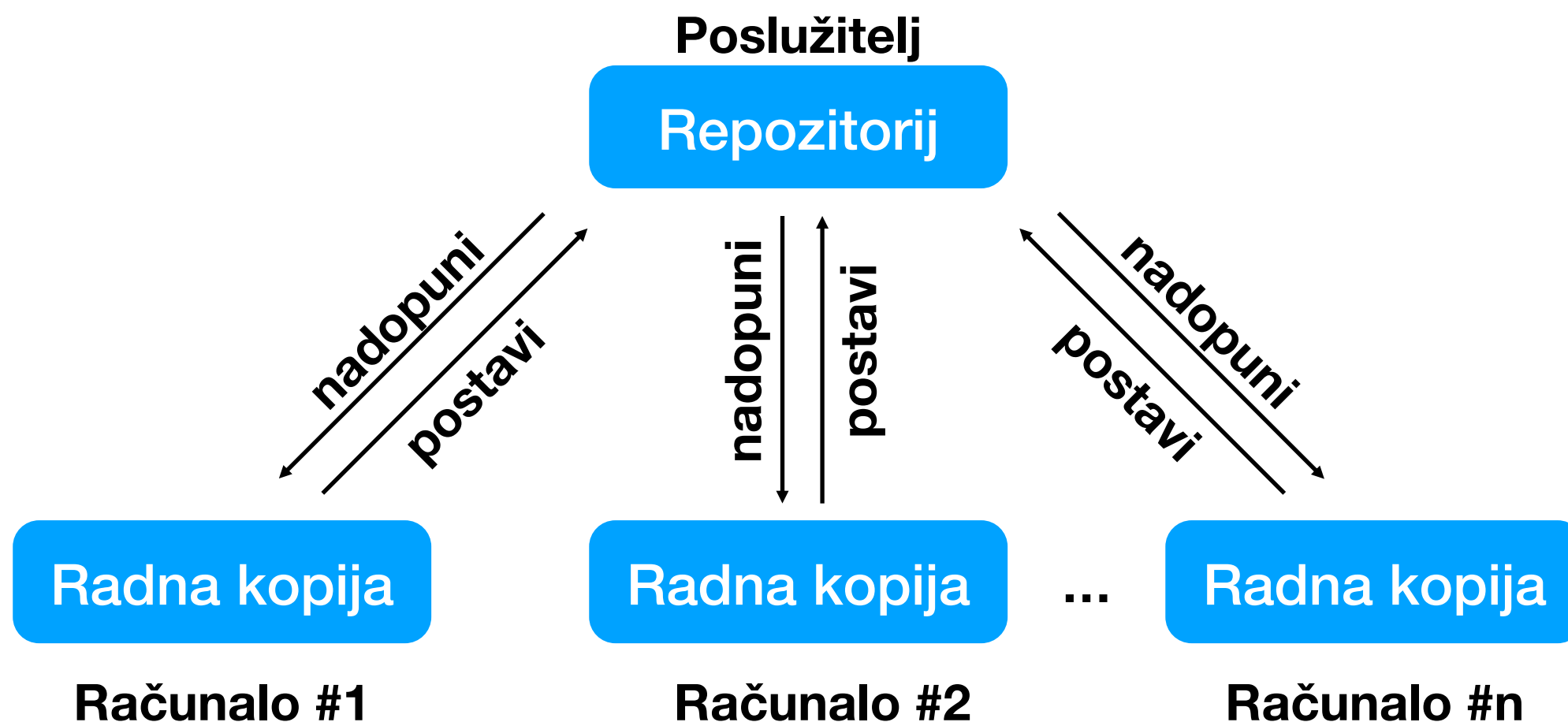
Walter F. Tichy

Department of Computer Sciences
Purdue University
West Lafayette, Indiana 47907

<http://www-public.imtbs-tsp.eu/~gibson/Teaching/Teaching-ReadingMaterial/Rochkind75.pdf>
<http://www.gnu.org/software/rcs/tichy-paper.pdf>

Vrste sustava za verzioniranje izvornog koda

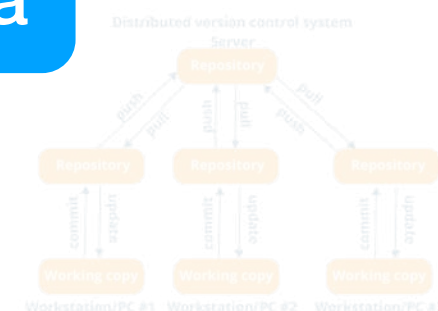
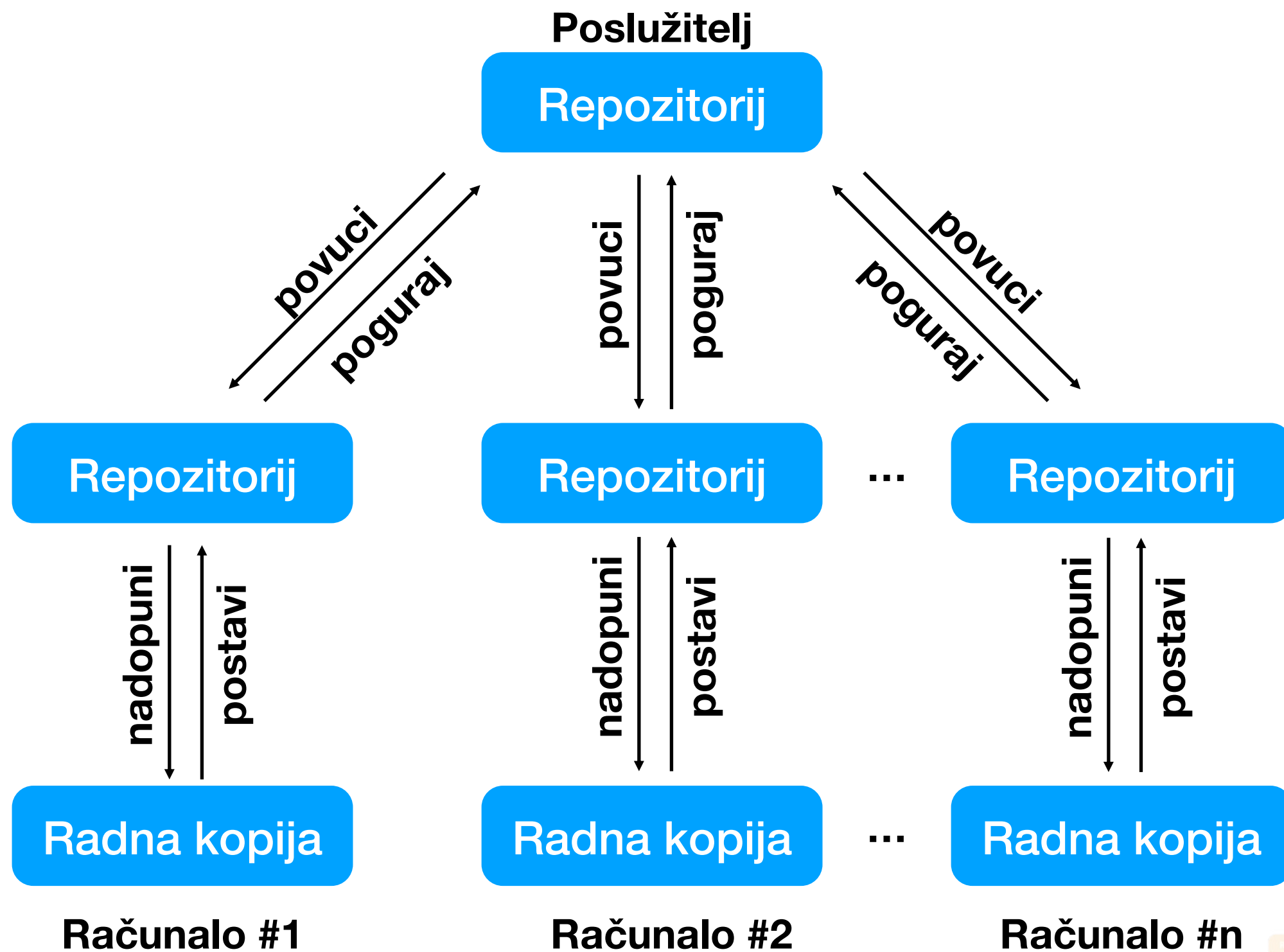
Centralizirani sustav



<https://d1jnx9ba8s6j9r.cloudfront.net/blog/wp-content/uploads/2016/11/Centralized-Version-Control-System-Workflow-What-Is-Git-Edureka.png>



Distribuirani sustav

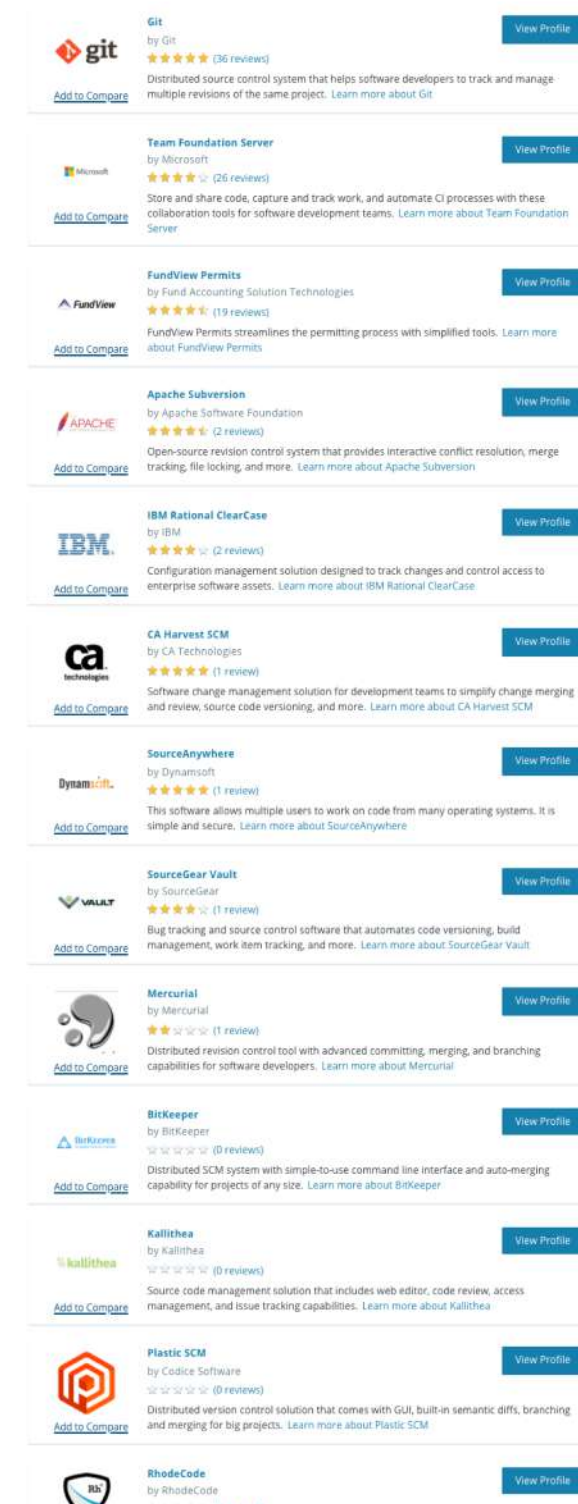


<https://d1jnx9ba8s6j9r.cloudfront.net/blog/wp-content/uploads/2016/11/Distributed-Version-Control-System-Workflow-What-Is-Git-Edureka-768x508.png>



Sustavi za verzioniranje koda

- PVCS Version Manager (1985)
- **CVS (1986)**
- IBM Relational ClearCase (1986)
- SourceSafe (1991)
- CMVC (1994)
- Microsoft Delta (1994)
- Borland StarTeam (1995)
- Perforce (1995)
- Sun Workshop TeamWare (1996)
- BitKeeper (1998)
- CVSNT (1998)
- BitKeeper (2000)
- **Subversion (2000)**
- GNU Arch (2001)
- AcuRev (2002)
- Darcs (2002)
- DVCVS (2002)
- Monotone (2003)
- SVK (2003)
- SourceGear Valt (2003)
- **mercurial (2005)**
- Microsoft TFVC (2005)
- **git (2005)**
- Fossil (2006)
- Bazaar (2007)



<https://www.capterra.com/source-code-management-software/>

CVS

“CVS started out as a bunch of shell scripts written by Dick Grune, posted to the newsgroup comp.sources.unix in the volume 6 release of July, 1986.”

05. prosinca 2000 via web.archive.org



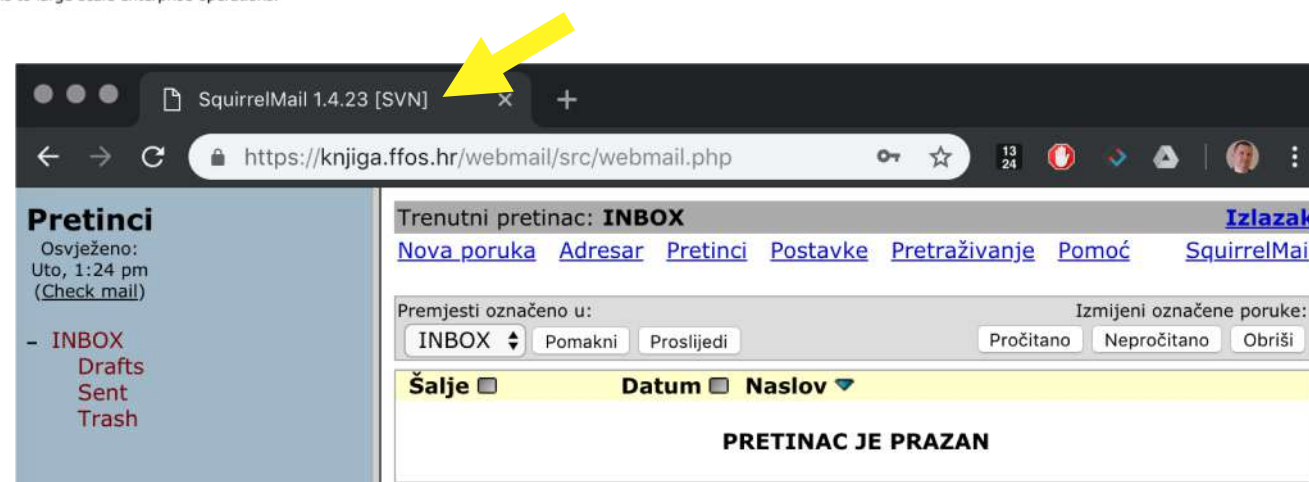
Centralizirani sustav



Apache™ Subversion®

“Subversion is an open source version control system. Founded in 2000 by CollabNet, Inc.”

<https://subversion.apache.org/>

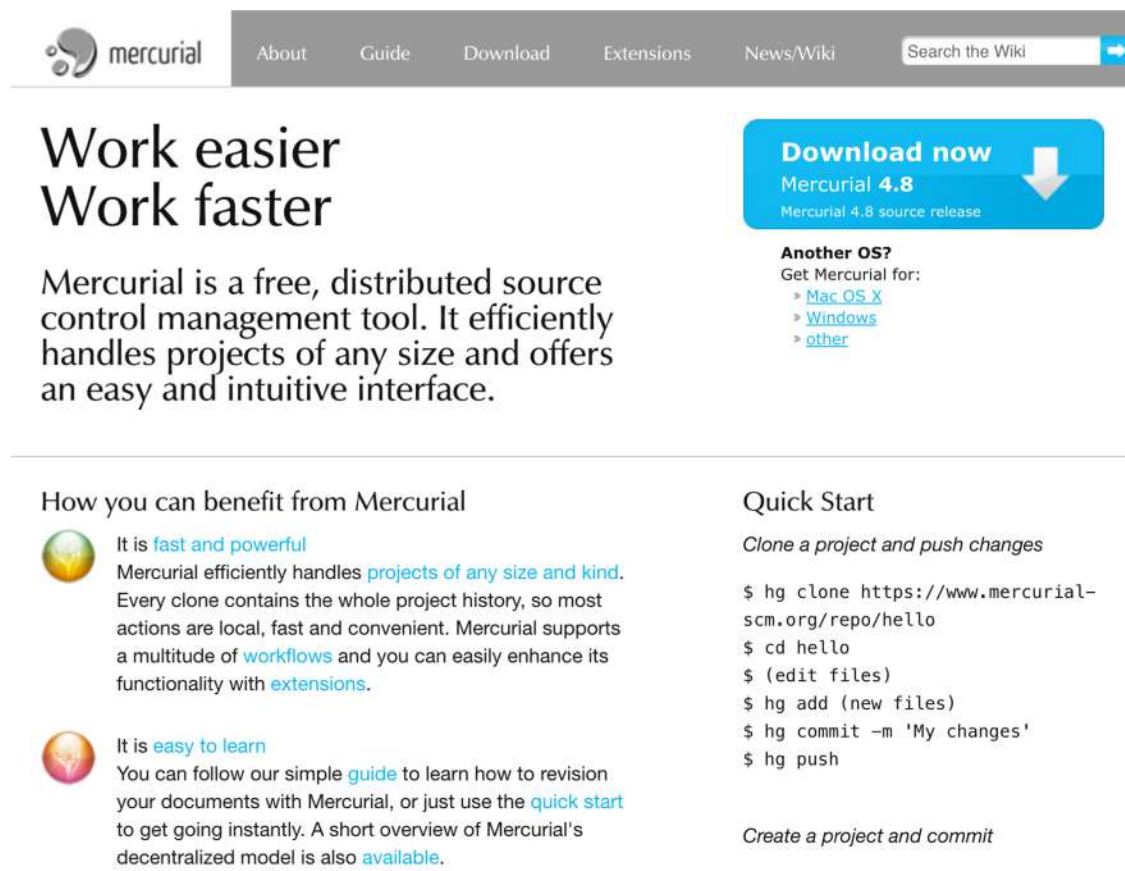


Centralizirani sustav

mercurial

“Mercurial is a free, distributed source control management tool. It efficiently handles projects of any size and offers an easy and intuitive interface.”

<https://www.mercurial-scm.org/>



The screenshot shows the Mercurial website homepage. At the top, there is a navigation bar with links: About, Guide, Download, Extensions, News/Wiki, and a search bar labeled 'Search the Wiki'. Below the navigation bar, the main content area features the text 'Work easier Work faster' and a description of Mercurial as a free, distributed source control management tool. To the right of this text is a blue button labeled 'Download now' with a download icon, and below it, links for 'Mac OS X', 'Windows', and 'other'. Below the main content area, there are two columns: 'How you can benefit from Mercurial' and 'Quick Start'. The 'How you can benefit from Mercurial' column contains two items: 'It is fast and powerful' and 'It is easy to learn'. The 'Quick Start' column contains a list of commands to clone a project, add files, commit, and push.

**Work easier
Work faster**

Mercurial is a free, distributed source control management tool. It efficiently handles projects of any size and offers an easy and intuitive interface.

Download now
Mercurial 4.8
Mercurial 4.8 source release

Another OS?
Get Mercurial for:
• [Mac OS X](#)
• [Windows](#)
• [other](#)

How you can benefit from Mercurial

- It is **fast and powerful**
Mercurial efficiently handles **projects of any size and kind**. Every clone contains the whole project history, so most actions are local, fast and convenient. Mercurial supports a multitude of **workflows** and you can easily enhance its functionality with **extensions**.
- It is **easy to learn**
You can follow our simple **guide** to learn how to revision your documents with Mercurial, or just use the **quick start** to get going instantly. A short overview of Mercurial's decentralized model is also **available**.

Quick Start

Clone a project and push changes

```
$ hg clone https://www.mercurial-scm.org/repo/hello
$ cd hello
$ (edit files)
$ hg add (new files)
$ hg commit -m 'My changes'
$ hg push
```

Create a project and commit

Distribuirani sustav

git

“Git is a free and open source distributed version control system designed to handle everything from small to very large projects with speed and efficiency.”

<https://git-scm.com/>

The screenshot shows the Git website homepage. At the top, there's a navigation bar with the Git logo and the tagline "--local-branching-on-the-cheap". A search bar is on the right. The main content area features a large diagram illustrating the distributed version control system with multiple repositories and branches. Below this, there are four sections: "About" (advantages of Git), "Documentation" (command reference, Pro Git book), "Downloads" (GUI clients, binary releases), and "Community" (bug reporting, mailing list). On the right, a section highlights the "Latest source Release 2.19.1" with a "Download 2.19.0 for Mac" button. At the bottom, there are links for "Mac GUIs", "Tarballs", "Windows Build", and "Source Code".

Distribuirani sustav



Timeline

With the stage set, a bit of external impetus, and a dire VCS crisis imminent, **Git** sprang to life in April 2005.

Git became self-hosted on April 7 with this commit:

```
commit e83c5163316f89bfbde7d9ab23ca2e25604af29
Author: Linus Torvalds <torvalds@ppc970.osdl.org>
Date: Thu Apr 7 15:13:13 2005 -0700
```

Initial revision of "**git**", the information manager from hell

Shortly thereafter, the first Linux commit was made:

```
commit 1da177e4c3f41524e886b7f1b8a0c1fc7321cac2
Author: Linus Torvalds <torvalds@ppc970.osdl.org>
Date: Sat Apr 16 15:20:36 2005 -0700
```

Linux-2.6.12-rc2

Initial **git** repository build. I'm not bothering with the full history, even though we have it. We can create a separate "historical" **git** archive of that later if we want to, and in the meantime it's about 3.2GB when imported into **git** - space that would just make the early **git** days unnecessarily complicated, when we don't have a lot of good infrastructure for it.

Let it rip!

That one commit introduced the bulk of the entire Linux Kernel into a **Git** repository.⁴ It consisted of

17291 files changed, 6718755 insertions(+), 0 deletions(-)

git

What's in a Name?

Linus himself rationalizes the name "**Git**" by claiming "I'm an egotistical bastard, and I name all my projects after myself. First Linux, now **git**."⁵ Granted, the name "Linux" for the kernel was sort of a hybrid of Linus and Minix. The irony of using a British term for a silly or worthless person was not missed, either.

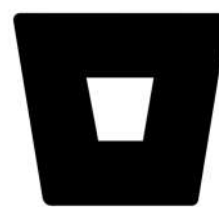
Since then, others had suggested some alternative and perhaps more palatable interpretations: the Global Information Tracker seems to be the most popular.

https://books.google.hr/books?hl=hr&lr=&id=aM7-Oxo3qdQC&oi=fnd&pg=PR3&dq=git+version+control&ots=39xeHJVgpg&sig=i3-cy22axQs1H3u94q8lqWyi8_Y&redir_esc=y#v=onepage&q=git%20version%20control&f=false

git repozitoriji i klijenti



github



Bitbucket

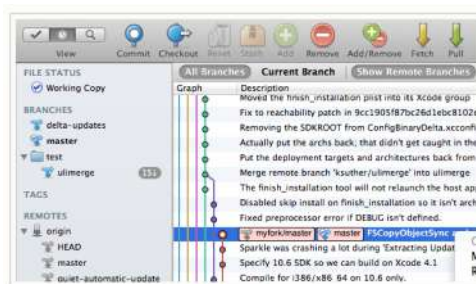
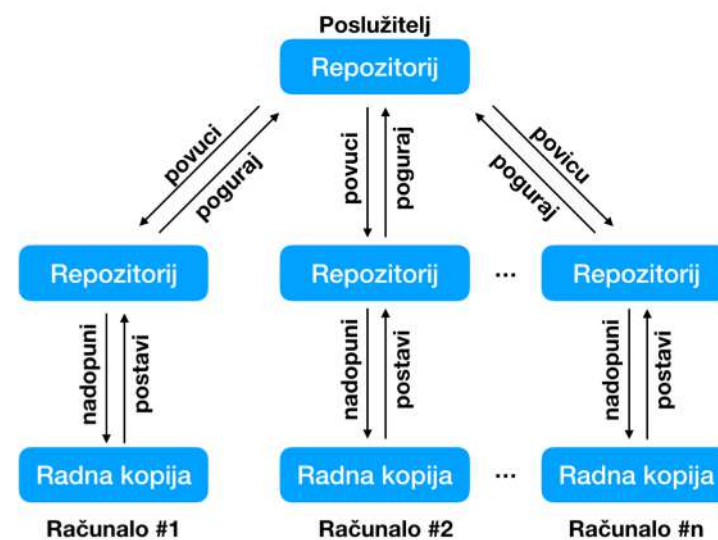


gitlab

...

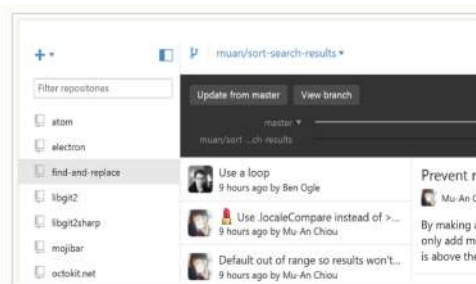


vlastiti repozitorij



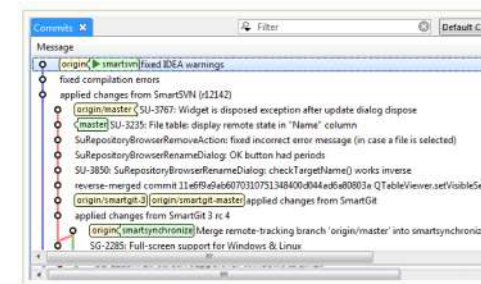
SourceTree

Platforms: Mac, Windows
 Price: Free
 License: Proprietary



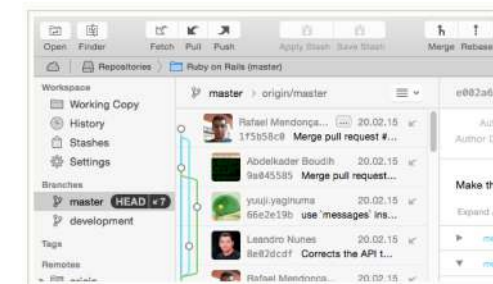
GitHub Desktop

Platforms: Mac, Windows
 Price: Free
 License: MIT



SmartGit

Platforms: Linux, Mac, Windows
 Price: \$79/user / Free for non-commercial use
 License: Proprietary



Tower

Platforms: Mac, Windows
 Price: \$79/user (Free 30 day trial)
 License: Proprietary

<https://git-scm.com/downloads/guis>

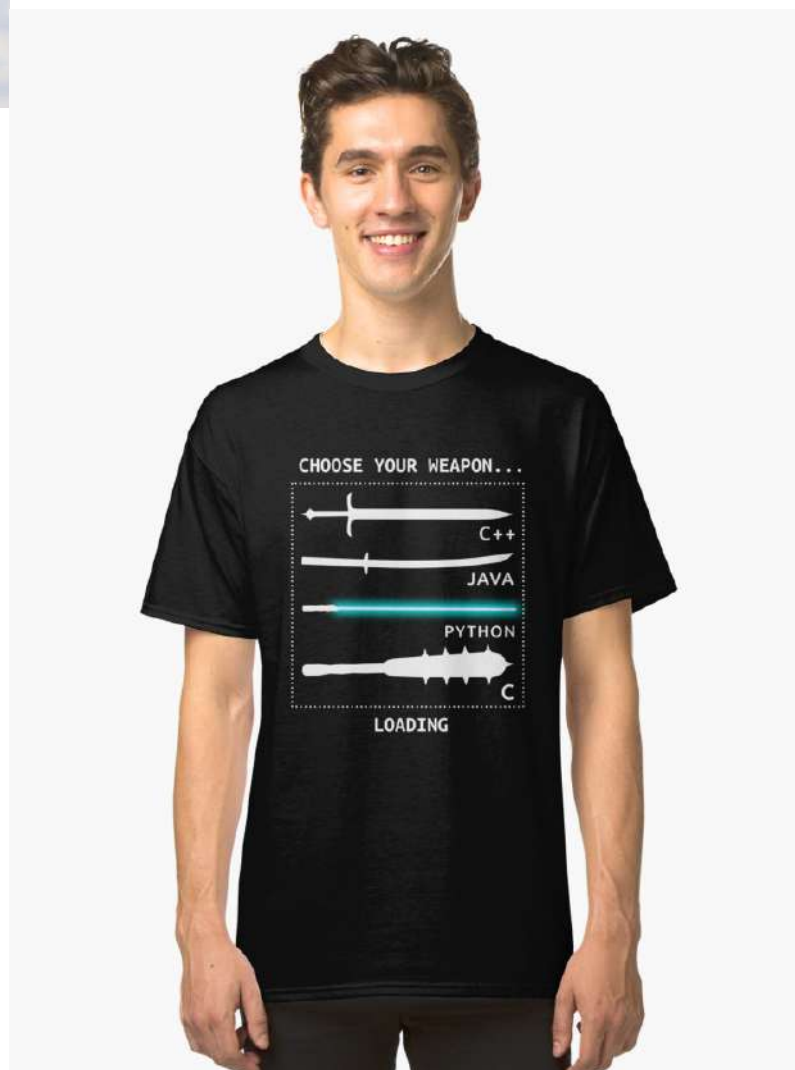
Scenarij



Marija



Ana



Zvonko

<https://www.pexels.com/photo/adult-beautiful-blonde-blur-324658/>

<https://www.pexels.com/photo/brown-haired-woman-wearing-brown-blazer-focus-photo-712521/>

https://i.h1.redbubble.net/image.444232991.8459/ra,classic_tee,x2000,101010:01c5ca27c6,front-c,325,112,750,1000-bg,f8f8f8.u2.jpg



```
package ffos;
```

```
/**
 * <h1>Ljubavni kalkulator</h1>
 * Program relevantnim kalkulacijama
 * pronalazi najbolju osobu za tebe
 * @author Marija Zimska
 * @version 1.0
 * @since 2018-11-21
 */
public class Ljubav {

    private static final String KALKULIRAM = "Kalkuliram ljubav (tražim osobu)";
    private static final String REZULTAT = "Pronašao 1 rezultat: Marija Zimska <mzimska@ffos.hr>";
    private static final char TRAZENJE = '.';
    private static final int BROJ_PONAVLJANJA = 7;

    /**
     * Ovo je metoda koju poziva operativni sustav
     * @param args ne koristim.
     * @return tipa void pa ne vraća vrijednost.
     */
    public static void main(String[] args) {
        System.out.println(KALKULIRAM);
        for (int i = 0; i < BROJ_PONAVLJANJA; i++) {
            System.out.print(TRAZENJE + " ");
            try {
                Thread.sleep(1000);
            } catch (InterruptedException e) {
                e.printStackTrace();
            }
        }
        System.out.println("\n" + REZULTAT);
    }
}
```

▲ LJUBAVNIKALKULATOR

▸ bin

▲ src

▲ ffos

☕ Ljubav.java

Kalkuliram ljubav (tražim osobu)

-



Terminal / Command Prompt

```
cd $HOME_LJUBAVNI_KALKULATOR
git init
git add src/*
git commit -m "Inicijalni program"
```

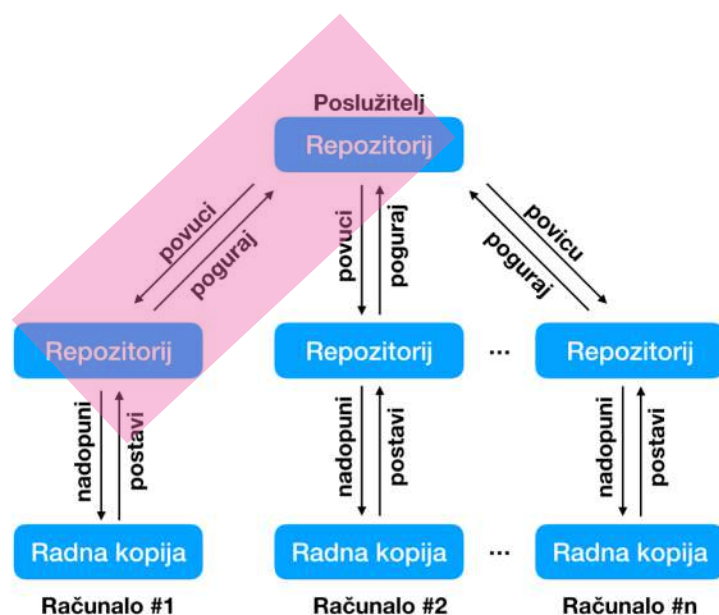
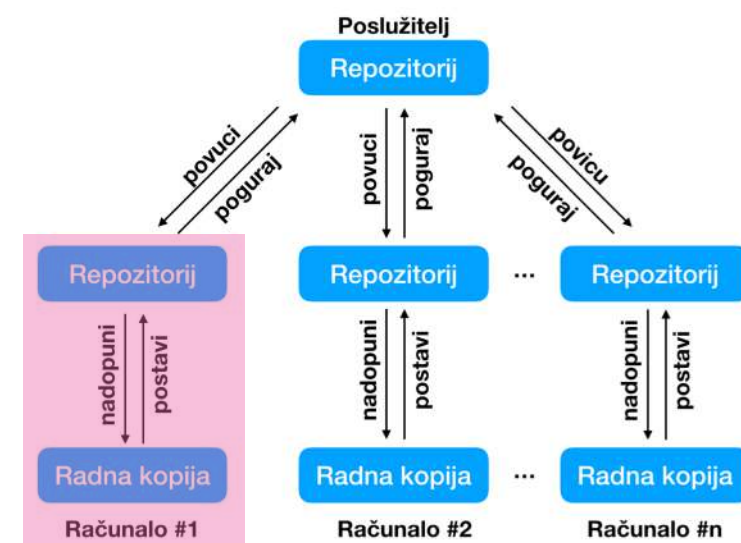
Create a new repository

A repository contains all the files for your project, including the revision history.

Owner: mzimska / Repository name: LjubavniKalkulator ✓

Great repository names are short and memorable. Need inspiration? How about [friendly-spoon](#).

```
git remote add origin https://github.com/mzimska/LjubavniKalkulator.git
git push -u origin master
```



mzimska / LjubavniKalkulator

Unwatch 1 Star 0 Fork 0

Code Issues 0 Pull requests 0 Projects 0 Wiki Insights Settings

Branch: master LjubavniKalkulator / src / ffos / Ljubav.java Find file Copy path

mzimska Inicijalni program 8d28353 17 minutes ago


1 contributor

39 lines (32 sloc) 929 Bytes Raw Blame History

```
1 package ffos;
2
3 /**
4  * <h1>Ljubavni kalkulator</h1>
```



 **mzimska / LjubavniKalkulator**

 Unwatch ▾ 1

 Star 0

 Fork 0

 Code

 Issues 0

 Pull requests 0

 Projects 0

 Wiki

 Insights

 Settings

Options

Collaborators

Branches

Webhooks

Integrations & services

Deploy keys

Collaborators

Push access to the repository



Ana Gal
agal



Search by username, full name or email address

You'll only be able to find a GitHub user by their email address if they've chosen to list it publicly. Otherwise, use their username instead.

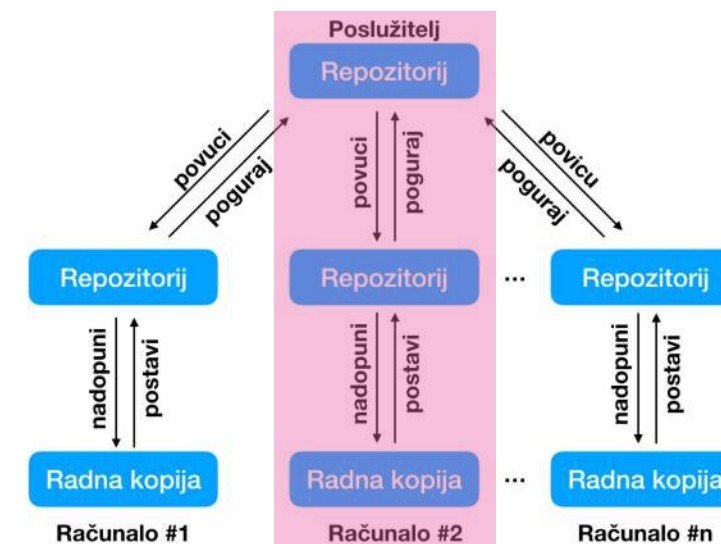
Add collaborator



Terminal / Command Prompt

```
cd $WORKSPACE
git clone https://github.com/mzimska/LjubavniKalkulator.git
cd LjubavniKalkulator
```

```
git branch LjubavNaKvadrat
git checkout LjubavNaKvadrat
```



https://cdn-images-1.medium.com/max/1600/1*iHPPa72N11sBI_JSDEGxEA.png

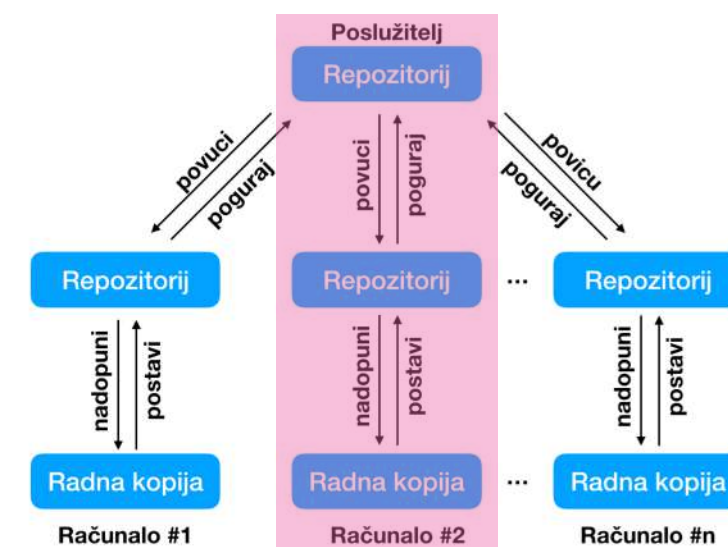


```
package ffos;
```

```
/**
 * <h1>Ljubavni kalkulator</h1>
 * Program relevantnim kalkulacijama
 * pronalazi najbolju osobu za tebe
 * @author Marija Zimska
 * @version 1.0
 * @since 2018-11-21
 */
public class Ljubav {

    /**
     * Ovo je metoda koju poziva operativni sustav
     * @param args ne koristim.
     * @return tipa void pa ne vraća vrijednost.
     */
    public static void main(String[] args) {
        if (args[0].equals("Marija") && args[1].equals("Zvonko")) {
            System.out.println("Volite se 98 %");
        } else {
            System.out.println("Volite se " + Math.random() + " %");
        }
    }
}
```

```
git add src/*
commit -m "Ovako je puno bolje"
git push origin LjubavNaKvadrat
```



LjubavNaKvadrat (1 minute ago)

Compare & pull request



mzimska / LjubavniKalkulator

Watch 1 Star 0 Fork 0

Code Issues 0 Pull requests 1 Projects 0 Wiki Insights

Marija, molim te provjeri #1

Open **agal** wants to merge 1 commit into `master` from `LjubavNaKvadrat`

Conversation 0 Commits 1 Checks 0 Files changed 1 +6 -13

agal commented a minute ago Collaborator

Mislim da je ovako puno bolje, na taj način će za sve druge kombinacije osim Marija i Zvonko izbaciti neki slučajni broj dok će za Vas dvoje dati 98% što je super, 100 % bi se vidjelo da je namješteno :)

Ovako je puno bolje 6ef1c4d

agal requested a review from **mzimska** one minute ago

Add more commits by pushing to the **LjubavNaKvadrat** branch on **mzimska/LjubavniKalkulator**.

Review requested [Show all reviewers](#)
Review has been requested on this pull request. It is not required to merge. [Learn more](#).

This branch has no conflicts with the base branch
Merging can be performed automatically.

Merge pull request You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

Write Preview

Leave a comment

Reviewers

mzimska

Assignees

No one—assign yourself

Labels

None yet

Projects

None yet

Milestone

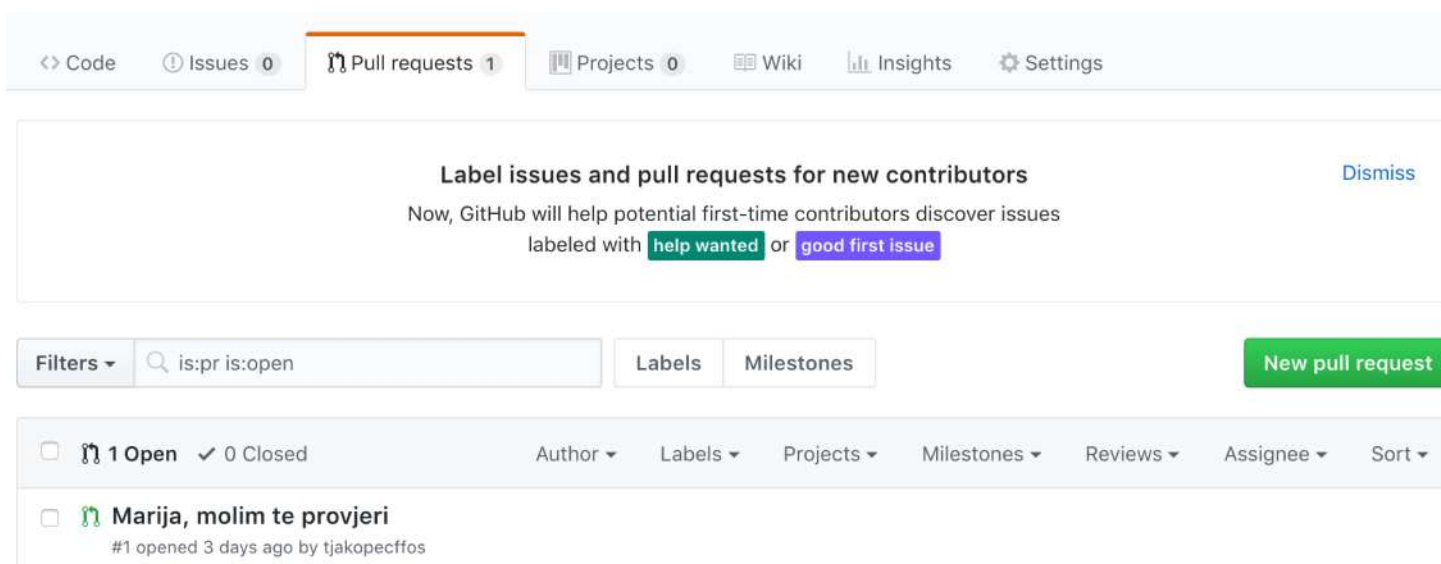
No milestone

Notifications

Unsubscribe

You're receiving notifications because you authored the thread.

1 participant



```
cd $HOME_LJUBAVNI_KALKULATOR  
git pull
```

...

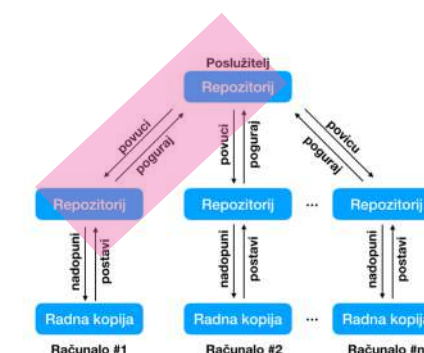
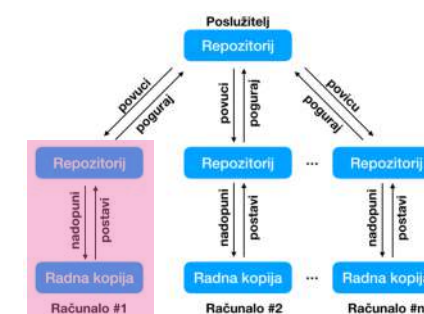
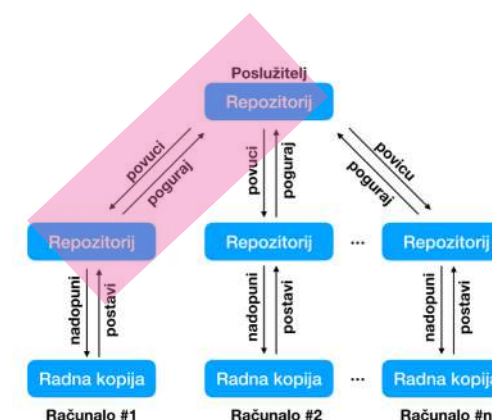
```
* [new branch]          LjubavNaKvadrat -> origin/LjubavNaKvadrat
```

```
git checkout LjubavNaKvadrat
```

... izmjene na kodu ...

```
git commit -m "Dorada mala/velika slova"
```

```
git push origin LjubavNaKvadrat
```





Continuous integration has not been set up

[Several apps are available](#) to automatically catch bugs and enforce style.



This branch has no conflicts with the base branch

Merging can be performed automatically.

Merge pull request



You can also [open this in GitHub Desktop](#) or view [command line instructions](#).

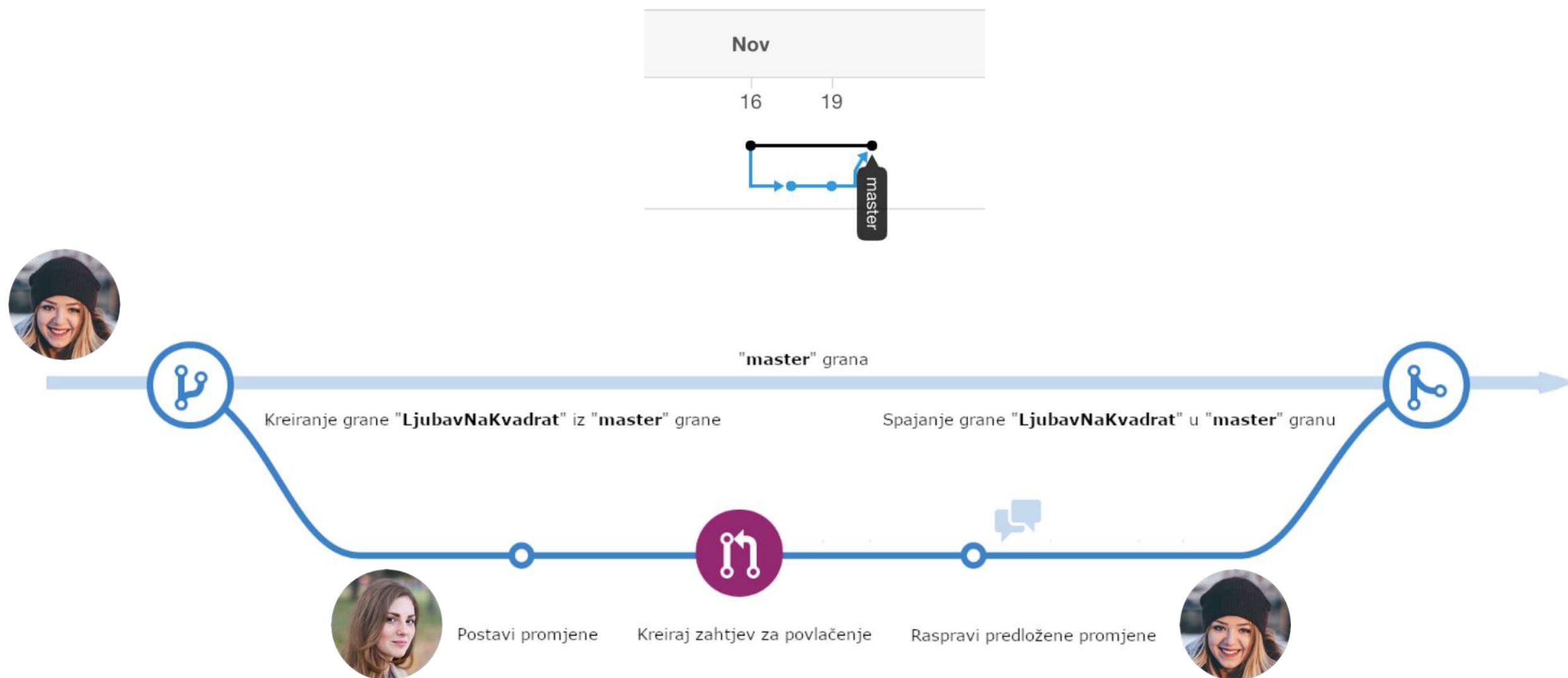


Pull request successfully merged and closed

You're all set—the `LjubavNaKvadrat` branch can be safely deleted.

Delete branch

github -> Insights -> Network





History for [LjubavniKalkulator](#) / [src](#) / [ffos](#) / [Ljubav.java](#)

```
...  ...  @@ -0,0 +1,38 @@
1  + package ffos;
2  +
3  + /**
4  +  * <h1>Ljubavni kalkulator</h1>
5  +  * Program relevantnim kalkulacijama
6  +  * pronalazi najbolju osobu za tebe
7  +  * @author Marija Zimska
8  +  * @version 1.0
9  +  * @since 2018-11-21
10 + */
11 + public class Ljubav {
12 +
13 +     private static final String KALKULIRAM = "Kalkuliram ljubav (tražim osobu)";
14 +     private static final String REZULTAT = "Pronašao 1 rezultat: Marija Zimska <mzimska@ffos.hr>";
15 +     private static final char TRAZENJE = '.';
16 +     private static final int BROJ_PONAVLJANJA = 7;
17 +
18 +     /**
19 +     * Ovo je metoda koju poziva operativni sustav
20 +     * @param args ne koristim.
21 +     * @return tipa void pa ne vraća vrijednost.
22 +     */
23 +     public static void main(String[] args) {
24 +         System.out.println(KALKULIRAM);
25 +         for (int i = 0; i < BROJ_PONAVLJANJA; i++) {
26 +             System.out.print(TRAZENJE + " ");
27 +             try {
28 +                 Thread.sleep(1000);
29 +             } catch (InterruptedException e) {
30 +                 e.printStackTrace();
31 +             }
32 +             System.out.println("\n" + REZULTAT);
33 +         }
34 +     }
35 + }
36 +
37 +
38 +
```

Commits on Nov 19, 2018

Dorada mala/velika slova



mzimska committed 2 days ago



3eb35a7



Commits on Nov 16, 2018

Ovako je puno bolje



agal committed 5 days ago



6ef1c4d



Inicijalni program



mzimska committed 5 days ago



8d28353







github -> dev CV



Fabien Potencier

fabpot

Follow

Block or report user

Developer Program Member

SensioLabs/Symfony/Blackfire

Lille

fabien@symfony.com

<http://fabien.potencier.org/>

Organizations



Overview

Repositories 36

Stars 151

Followers 8.7k

Following 0

Pinned repositories

[symfony/symfony](#)

The Symfony PHP framework

● PHP ★ 19k 🍴 6.5k

[twigphp/Twig](#)

Twig, the flexible, fast, and secure template language for PHP

● PHP ★ 5.5k 🍴 1k

[silexphp/Silex](#)

[DEPRECATED -- Use Symfony instead] The PHP micro-framework based on the Symfony Components

● PHP ★ 3.8k 🍴 755

[swiftmailer/swiftmailer](#)

Comprehensive mailing tools for PHP

● PHP ★ 6.6k 🍴 711

[silexphp/Pimple](#)

A small PHP 5.3 dependency injection container

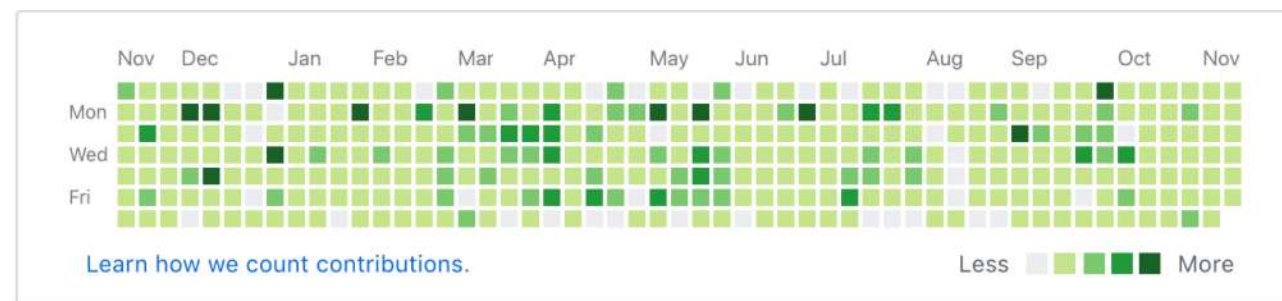
● PHP ★ 2k 🍴 283

[splitsh/lite](#)

Split a repository to read-only standalone repositories

● Go ★ 808 🍴 42

10,134 contributions in the last year



2018

2017

2016

2015

<https://github.com/fabpot>



413 contributions in the last year

Contribution settings ▾



Contribution activity

Jump to ▾

2018

January 2018

2017



Created 2 commits in 1 repository



2016

Literatura

Jon Loeliger, Matthew McCullough. Version Control with Git: Powerful tools and techniques for collaborative software development. "O'Reilly Media, Inc.", 2012

https://web.archive.org/web/20120415051926/http://ximbiot.com/cvs/manual/cvs-1.12.12/cvs_1.html

<https://subversion.apache.org/>

<http://bazaar.canonical.com/en/>

<https://www.mercurial-scm.org/>

<https://www.atlassian.com/git/tutorials/what-is-version-control>

<https://www.monotone.ca/>

<https://www.perforce.com/>

<https://docs.microsoft.com/en-us/azure/devops/learn/git/what-is-git>

<https://insights.stackoverflow.com/survey/2015#tech-sourcecontrol>

<http://www-public.imtbs-tsp.eu/~gibson/Teaching/Teaching-ReadingMaterial/Rochkind75.pdf>

<http://www.gnu.org/software/rcs/tichy-paper.pdf>

<https://www.capterra.com/source-code-management-software/>

<https://www.edureka.co/blog/what-is-git/>

<https://www.youtube.com/watch?v=cQKo62CvO9w>

<https://financesonline.com/version-control-systems/>

<https://git-scm.com/>

<http://devhumor.com/content/uploads/images/January2018/hire-me.png>