



GitLab

# Zajednički rad na Git projektu korištenjem centralnog upravitelja Git repozitorija (GitLab)

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# Tematske cjeline

- Git
- GitLab
- Grupni rad na projektu
- Uporaba GitLab-a

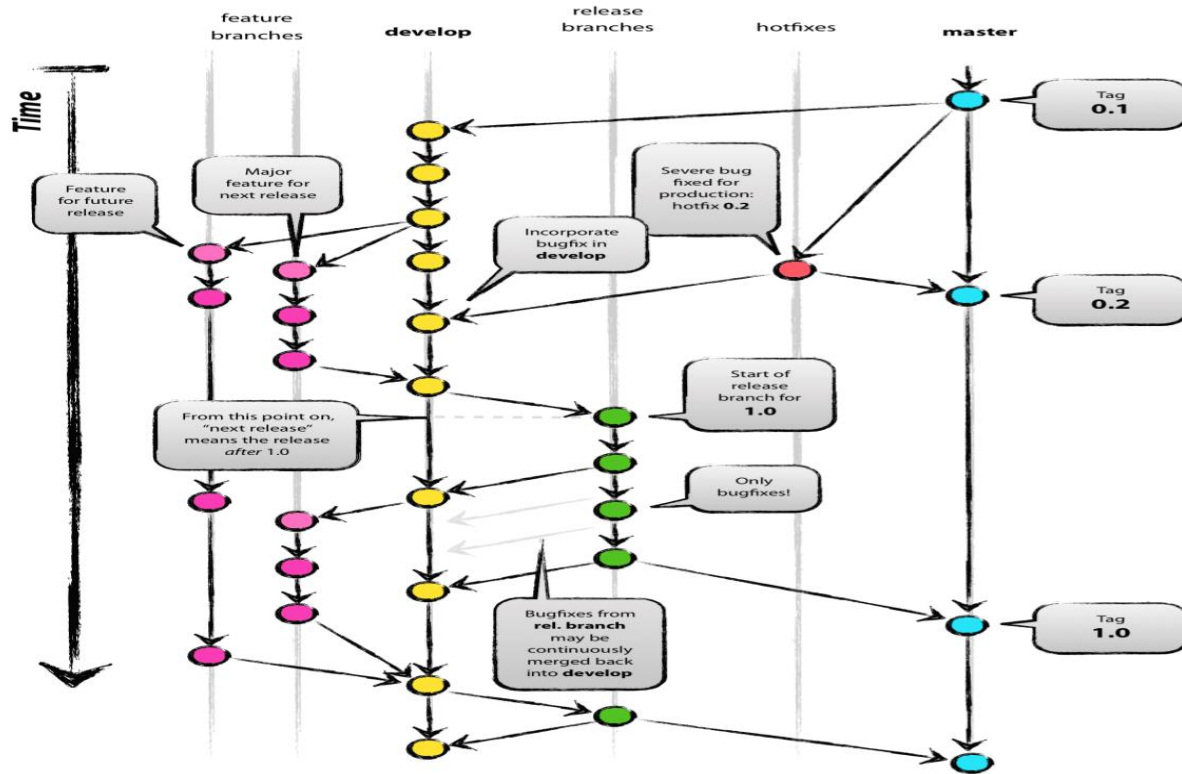


# Git

- Open Source programsko rješenje za praćenje promjena u tekstualnim i drugim datotekama
- Nastao 2006. godine kao rezultat iskustva Linusa Torvaldsa na razvoju Linux kernela
- Distribuiran
- Kod je malen i brz u radu
- Sigurnost podataka/promjena (SHA)
- Pred prijavna zona (add->PPZ->commit)



# Git repozitorij



# Način implementacije i uporabe

- Instalacija iz programskog koda  
<https://github.com/git/git>
- Instalacijom iz paketa (većina OS-ova)
- Komandno linijske naredbe
- Grafičko sučelje
- Razmjena repozitorija
  - email
  - SSH
  - Centralna mjesta za razmjenu





















# Centralna mjesta za razmjenu Git repozitorija

- Github.com
- GitLab.com
- Dodani alati za timski rad
- Mogućnost jednostavnog pregleda programskog koda



# GitLab



	 Manage	 Plan	 Create	 Verify	 Package	 Release	 Configure	 Monitor	 Secure	
GitLab is a single application for the entire DevOps lifecycle.	<p>Since 2016 GitLab added:</p> <ul style="list-style-type: none"> <li>Cycle Analytics</li> <li>DevOps Score</li> <li>Audit Management</li> <li>Authentication and Authorization</li> </ul>	<p>Since 2011 GitLab added:</p> <ul style="list-style-type: none"> <li>Kanban Boards</li> <li>Project Management</li> <li>Agile Portfolio Management</li> <li>Service Desk</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>Value Stream Management</li> <li>Requirements Management</li> <li>Quality Management</li> </ul>	<p>Since 2011 GitLab added:</p> <ul style="list-style-type: none"> <li>Source Code Management</li> <li>Code Review</li> <li>Wiki</li> <li>Snippets</li> <li>Web IDE</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>Design Management</li> <li>Live Coding</li> </ul>	<p>Since 2012 GitLab added:</p> <ul style="list-style-type: none"> <li>Continuous Integration (CI)</li> <li>Code Quality</li> <li>Performance Testing</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>System Testing</li> <li>Usability Testing</li> <li>Accessibility Testing</li> <li>Compatibility Testing</li> <li>Secret Detection</li> </ul>	<p>Since 2016 GitLab added:</p> <ul style="list-style-type: none"> <li>Container Registry</li> <li>Maven Repository</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>NPM Registry</li> <li>Rubygem Registry</li> <li>Linux Package Registry</li> <li>Helm Chart Registry</li> <li>Dependency Proxy</li> </ul>	<p>Since 2016 GitLab added:</p> <ul style="list-style-type: none"> <li>Continuous Delivery (CD)</li> <li>Release Orchestration</li> <li>Pages</li> <li>Review apps</li> <li>Incremental Rollout</li> <li>Feature Flags</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>Binary Authorization</li> </ul>	<p>Since 2018 GitLab added:</p> <ul style="list-style-type: none"> <li>Auto DevOps</li> <li>Kubernetes Configuration</li> <li>ChatOps</li> <li>Runbook Configuration</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>Serverless</li> <li>PaaS</li> <li>Chaos Engineering</li> <li>Cluster Cost Optimization</li> </ul>	<p>Since 2016 GitLab added:</p> <ul style="list-style-type: none"> <li>Metrics</li> <li>Logging</li> <li>Cluster Monitoring</li> <li>Tracing</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>Error Tracking</li> <li>Synthetic Monitoring</li> <li>Incident Management</li> <li>Status Page</li> </ul>	<p>Since 2017 GitLab added:</p> <ul style="list-style-type: none"> <li>SAST</li> <li>DAST</li> <li>Dependency Scanning</li> <li>Container Scanning</li> <li>License Management</li> </ul> <p>Coming soon:</p> <ul style="list-style-type: none"> <li>Runtime Application Security</li> </ul>	
	GitLab can replace									



## GitLab (2)

- Web aplikacija
- Timski rad na projektima
- Podrška za Git sustav praćenja promjena nad datotekama
- OpenSource (MIT licenca)
- Dvije distribucije CE i EE
- <http://www.gitlab.org/>
- Dostupna i usluga u obliku gitlab.com





# Mogućnosti CE distribucije

- Centralna razmjena Git repozitorija
- Podrška za rad s sustavom za prijavu grešaka/novosti (issue) interni ili vanjski sustava
- Podrška za WIKI interni ili vanjski sustav
- Podrška za sustav pohrane dijelova standardnog koda (snippets)
- Sustav ovlasti i dostupnosti do pojedinih dijelova ovisno o ovlastima korisnika
- Sustav za automatsku provjeru koda i implementaciju (CI)
- <https://about.gitlab.com/features/>



# Dobra praksa rada s git-om

- Definiranje pravila uporabe git-a na početku projekta određuje se način rada i razmjene repozitorija  
<https://www.atlassian.com/git/tutorials/comparing-workflows>
- Nadzor nad definiranim pravilima
- Skalabilnost



# Grupni rad na projektu

- Jedan ili više razvijatelja
- Novi ili postojeći programski kod ili projekt
- Udaljenost razvijatelja (vremenska, fizička, ...)
- Različita vremenska ograničenja
- Povijesno programiranje jednog ili više razvijatelja ili timova
- Različite paradigme



## Grupni rad na projektu (2)

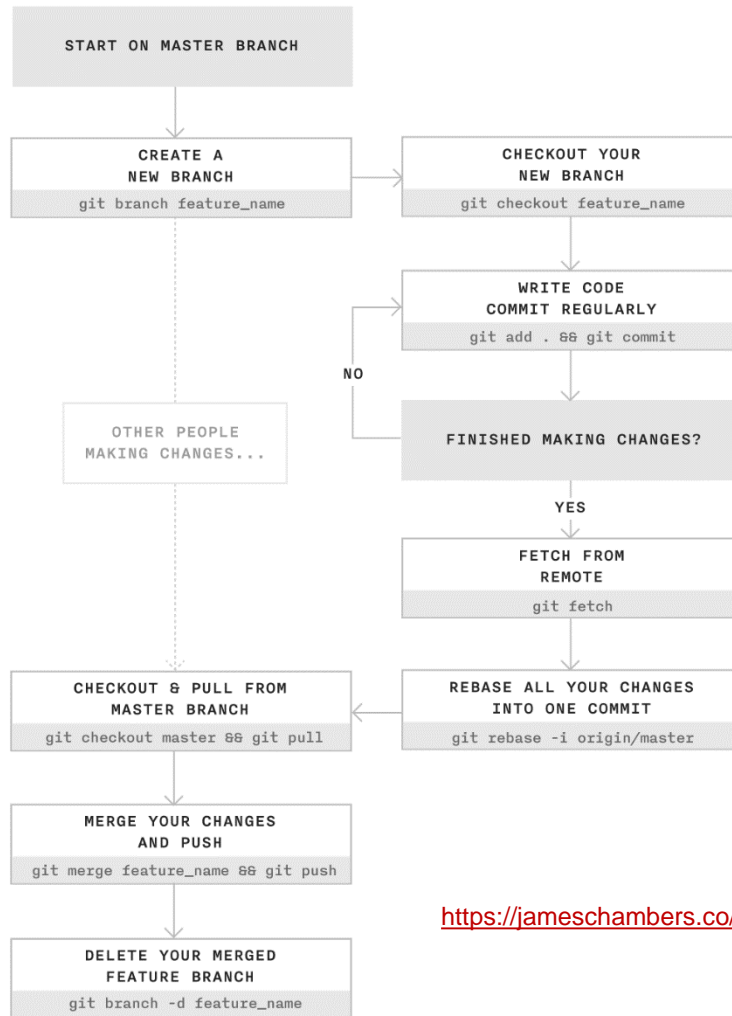
- Potiče kod sudionika :
  - Razmišljanje kako kompleksne zadaće pretvoriti u jednostavno izvedive korake na jedinstvenom putu
  - Planiranje i održavanje vremenskih okvira
  - Poboljšanje komunikacijskih sposobnosti
- Omogućava sudionicima da :
  - Riješe puno zahtjevniji zadatak nego bi to sami mogli izvesti
  - Delegiranje zadataka i odgovornosti
  - Povećanje znanja i vještina
- <https://www.cmu.edu/teaching/design/teach/design/instructionalstrategies/groupprojects/index.html>



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- Različite paradigme

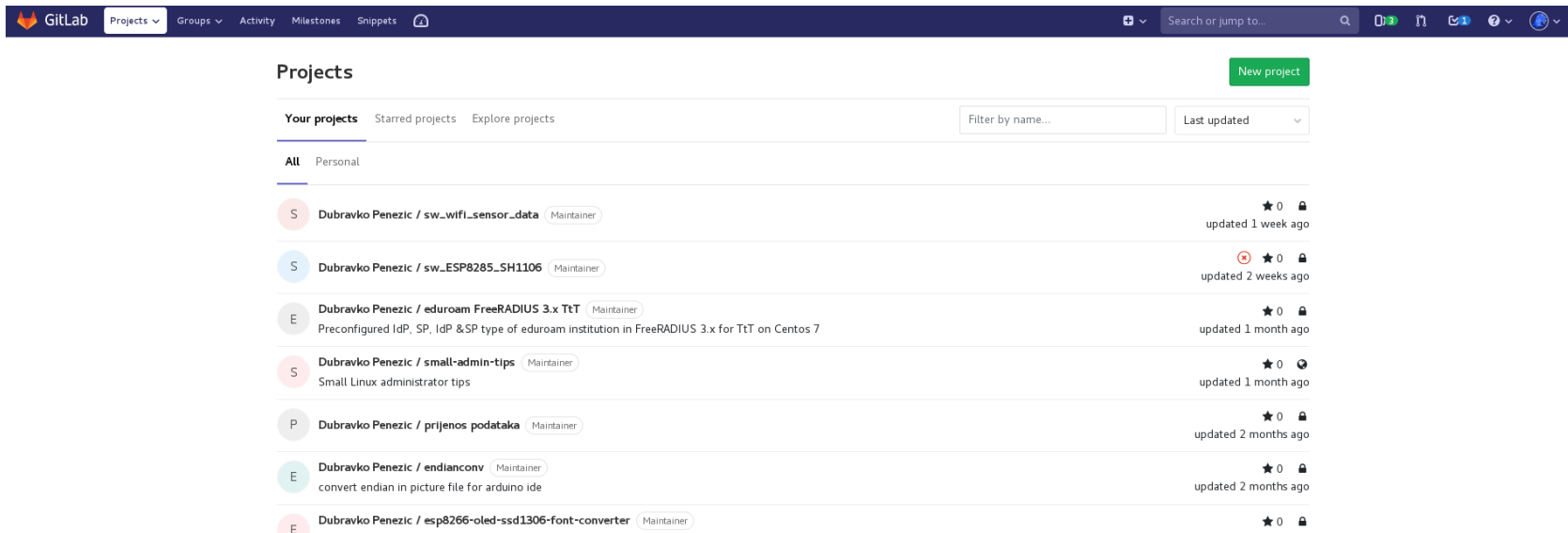




<https://jameschambers.co/writing/git-team-workflow-cheatsheet/>



# Uporaba GitLab-a



The screenshot shows the GitLab interface with the 'Projects' section selected. The header includes navigation links for Groups, Activity, Milestones, and Snippets. A search bar is present with the text 'Search or jump to...'. The main content area is titled 'Projects' and features a 'New project' button. Below this, there are tabs for 'Your projects', 'Starred projects', and 'Explore projects'. A filter box 'Filter by name...' and a 'Last updated' dropdown are also visible. The 'All' tab is active, showing a list of personal projects. Each project entry includes a colored circle icon, the project name, a 'Maintainer' badge, and a star icon with a lock icon. The update time is shown as 'updated X weeks ago'.

Project Name	Maintainer	Stars	Lock	Updated
Dubravko Penezic / sw_wifi_sensor_data	Maintainer	0	Yes	updated 1 week ago
Dubravko Penezic / sw_ESP8285_SH1106	Maintainer	0	Yes	updated 2 weeks ago
Dubravko Penezic / eduroam FreeRADIUS 3.x TtT	Maintainer	0	Yes	updated 1 month ago
Dubravko Penezic / small-admin-tips	Maintainer	0	No	updated 1 month ago
Dubravko Penezic / prijenos podataka	Maintainer	0	Yes	updated 2 months ago
Dubravko Penezic / endianconv	Maintainer	0	Yes	updated 2 months ago
Dubravko Penezic / esp8266-oled-ssd1306-font-converter	Maintainer	0	Yes	



# Uporaba GitLab-a

- Za različite projekte i istraživanja
- Najviše se dobije kada se radi s tekstualnim datotekama (programiranje)
- Veliki raspon konfiguracijskih opcija  
<https://about.gitlab.com/get-help/>





# GitLab funkcionalnosti

- Korisnik – Administrator
- Funkcionalnosti vezane za Git
  - Održavanje editabilnih datoteka
  - Pregled Git repozitorija i prijavljenih promjena
  - Prijava promjena i uključivanje u pojedine grane
- Funkcionalnosti vezane za grupni rad
  - Grupe projekata
  - Issues
  - Wiki
  - Snippets



## GitLab funkcionalnosti (2)

- Administracija korisnika
  - Autentikacija
  - Autorizacijska prava
  - Rad s SSH ključevima
- CI/CD
- Informacije o sustavu, grafovi i statistike



# Grupe korisnika i projekata

## New group

[Groups](#) allow you to manage and collaborate across multiple projects. Members of a group have access to all of its projects.

Groups can also be nested by creating [subgroups](#).

Projects that belong to a group are prefixed with the group namespace. Existing projects may be moved into a group.

### Group name

### Group URL

### Group description (optional)




### Group avatar

 No file chosen

The maximum file size allowed is 200KB.

### Visibility level

Who will be able to see this group? [View the documentation](#)

-  Private  
The group and its projects can only be viewed by members.
-  Internal  
The group and any internal projects can be viewed by any logged in user.
-  Public  
The group and any public projects can be viewed without any authentication.



## Grupe korisnika i projekata (2)

- Privatne, autenticirane ili javne
- Tekstualni i grafički opis grupe
- Svi projekti grupe nasljeđuje postavke grupe, ali se mogu mijenjati parametri za svaki projekt posebno



# Grupe korisnika i projekata (3)

eduroam > Members

## Members

Add new member to **eduroam**

Search for members by name, username, or email, or invite new ones using their email address.

Guest

[Read more](#) about role permissions

Expiration date

On this date, the member(s) will automatically lose access to this group and all of its projects.

Add to group

## Existing members

Members with access to **eduroam** 2

Find existing members by name

2FA: Everyone

Name, ascending



**Administrator** @root  
Given access 2 years ago

Owner

Expiration date



**Dubravko Penezić** @dubravko.penezic It's you  
Given access 2 years ago

Owner

Leave



## Grupe korisnika i projekata (4)

- Nekoliko nivo korisnika s različitim pravima (Guest, Reporter, Maintainer, Owner, Developer)  
<https://gitlab.com/help/user/permissions>
- Vremensko trajanje dozvole



# Grananje projekta

master

You can move around the graph by using the arrow keys.

Git revision   Begin with the selected commit

The image shows a Git commit history graph. The vertical axis on the left represents dates from August 21 to 28. The horizontal axis represents the commit history. The main branch is 'master'. Several branches are shown: 'nadzor', 'lokalizacija', 'idpStatus', and 'statusSondiEduroam'. The commit messages are listed on the right side of the graph. The commit messages are: 'Initial commit', 'postavljani početni layouts sa hostinga.eduroama, kompajliran css, fonts i images', 'WIP rad na IdP Status', 'Importan staticni dio od IdP Status', 'Napomene za provjeriti', 'sensorNet-sonde bez statistika-dohvat podataka', 'napravljen i dohvat podataka, potrebna još neka sitna podešenja', 'popravljen datePicker na idpStatusu, presložene neke stvari u bladeovima', 'Merge branch 'dev' into 'statusSondiEduroam'', 'Merge branch 'statusSondiEduroam' into 'dev'', 'WIP rad na dijelu nadzora', 'Merge s dev', 'Postavljen staticni dio nadzora s eduroam.hr', 'WIP rad na lokalizaciji', 'Azuriraj lang tekstove', 'Fix link na installer', 'dodani statusi servisa sa AAI weba, lokalizacija sensornet-a', 'Merge branch 'aaiStatusi' into 'dev'', 'autentikacija napravljena s aacotroneo saml pluginom, sve se izvodi u listenerima', and 'WIP rad na kartama'.

Aug 28

28

27

27

24

23

22

21

nadzor

lokalizacija

idpStatus

statusSondiEduroam

WIP rad na kartama

autentikacija napravljena s aacotroneo saml pluginom, sve se izvodi u listenerima

Merge branch 'aaiStatusi' into 'dev'

dodani statusi servisa sa AAI weba, lokalizacija sensornet-a

Fix link na installer

Azuriraj lang tekstove

WIP rad na lokalizaciji

Postavljen staticni dio nadzora s eduroam.hr

Merge s dev

WIP rad na dijelu nadzora

Merge branch 'statusSondiEduroam' into 'dev'

Merge branch 'dev' into 'statusSondiEduroam'

popravljen datePicker na idpStatusu, presložene neke stvari u bladeovima

napravljen i dohvat podataka, potrebna još neka sitna podešenja

sensorNet-sonde bez statistika-dohvat podataka

Napomene za provjeriti

Importan staticni dio od IdP Status

WIP rad na IdP Status

postavljani početni layouts sa hostinga.eduroama, kompajliran css, fonts i images

Initial commit



## Grananje projekta (2)

- Ovisi o dogovorenom načinu rada
- Grananje je "jeftino"
- Osigurava preglednost i lak povratak ako se uoči pogreška
- Omogućava alternativne pristupe





# Zabilješke

Dubravko Penezic > weather-station > Issues

Open 27 Closed 0 All 27



Search or filter results... Created date

## Mjerenje munja i oluja

#27 · opened 1 year ago by Dubravko Penezic



0

updated 1 year ago

## Vizualizacija podataka s meteo servisa

#26 · opened 1 year ago by Dubravko Penezic



0

updated 1 year ago

## Service Desk (from dpenezic@gmail.com): Cijene za meterolosku stanicu

#25 · opened 1 year ago by GitLab Support Bot



0

updated 1 year ago

## LVMS: Mjerenje tlaka, vlažnosti i temperature zraka

#24 · opened 1 year ago by Dubravko Penezic LowValue Meteostation



0

updated 1 year ago

## HVSM: Stalak za meteo stanicu

#23 · opened 1 year ago by Dubravko Penezic Tehnička rješenja



0

updated 1 year ago

## HVMS: Mjerenje temperature u tlu

#22 · opened 1 year ago by Dubravko Penezic HighValue Meteostation



0

updated 1 year ago

## HVMS: Mjerenje vlage u tlu

#21 · opened 1 year ago by Dubravko Penezic HighValue Meteostation



0

updated 1 year ago

## HVMS: Mjerenje rose

#20 · opened 1 year ago by Dubravko Penezic HighValue Meteostation



0

updated 1 year ago



# Zabilješke

- Issues , poruke o greškama, to-do liste, razvojnim iskoracima, komentarima i slično
- Voting
- Labele
- Board



# Zabilješke Labele

GitLab.org

- Overview
- Epics 56
- Issues 14,820
- List
- Boards
- Labels
- Milestones
- Merge Requests 1,027
- Members

GitLab.org > Issues

Open 97 Closed 71 All 168

Label -Discussion Label -labels Label priority

**New design for group label deletion confirmation**  
gitlab-ce#41311 · opened a month ago by Winnie Hellmann 10.5 Deliverable Discussion Platform UX ready frontend labels 2 updated 3 weeks ago

**Group label list page redesign**  
gitlab-ce#39550 · opened 3 months ago by Victor Wu 10.5 Deliverable Discussion in dev UX ready frontend labels 28 updated 4 days ago

**Label pages design clean up**  
gitlab-ce#38557 · opened 4 months ago by Victor Wu Next 6-12 months Deliverable Discussion UX ready frontend labels 4 updated a month ago

**View labels when editing labels in issue sidebar and board sidebar**  
gitlab-ce#34262 · opened 7 months ago by Victor Wu 10.8 Deliverable Discussion UX ready frontend issues labels 5 updated 2 weeks ago

**Selecting issue in a board - appearing in more than one list - scrolls to last instance**  
gitlab-ce#41125 · opened a month ago by Yehuda Deutsch Discussion boards bug frontend labels reproduced on GitLab.com 3 updated a month ago

**Labels with emoji in them cannot be assigned via slash commands.**  
gitlab-ce#40728 · opened a month ago by Mike Greiling Discussion backend bug emoji issues labels quick actions reproduced on GitLab.com 1 updated 4 weeks ago

**Labels management is not accessible when issues are disabled**  
gitlab-ce#40702 · opened 2 months ago by Serdar Sanri Discussion UX bug frontend issues labels merge requests 11 updated 4 weeks ago

**ActiveRecord::StatementInvalid: PG::SyntaxError: ERROR: subquery has too many columns**  
gitlab-ee#4159 · opened 2 months ago by Bot Discussion backend bug customer labels 1 updated 2 weeks ago

**Labels are not properly rendered when followed by a dot**  
gitlab-ce#40021 · opened 2 months ago by Fabio Busatto Backlog Discussion UI polish backend bug labels markdown 1 updated 4 weeks ago

**Issue filters with trailing quote fails to match**  
gitlab-ce#39121 · opened 3 months ago by Mike Greiling Discussion bug frontend issues labels reproduced on GitLab.com 2 updated 2 months ago



# Zabilješke Boards

GitLab.org > GitLab Community Edition > Issue Boards

Planning Search or filter results... Edit board Add list Add issues

### Open 12946 1303 +

- Clean up `FillFileStore` background migrations with `BackgroundMigration.steal`  
Platform [DEPRECATED] Verify backstage  
devops:verify  
#46865
- Clean up `ArchiveLegacyTraces` background migrations with `BackgroundMigration.steal`  
Verify backstage blocked devops:verify  
#46906
- Expand diff to entire file  
Accepting merge requests Create UX  
backend customer- devops:create diff  
direction feature proposal frontend  
merge requests  
#19054 4
- Open unchanged files in merge request  
Accepting merge requests Create  
devops:create diff direction feature proposal  
frontend merge requests  
#25201

### Deliverable 250 265 +

- Suggest change to a single line in merge request diff comment  
Create Deliverable In dev P1  
Product Vision 2019 UX ready backend  
code review devops:create direction  
feature proposal frontend merge requests  
#18008 5
- Reverse lookups of hashed repository storage paths  
Create Deliverable Geo Geo Administration  
In dev backend backstage devops:create  
production request  
#48527 13
- Skip per commit Checks::ChangeAccess which have already passed on another change/branch  
Create Deliverable In dev P2 backend  
devops:create missed-deliverable performance  
repository  
#44679 3

### Next Patch Release 10 0 +

- Error 500 caused by attempting to access root\_ref via Gitaly: Gitlab::Git::CommandError: 13  
Accepting merge requests Gitaly  
Next Patch Release P4 S3 auto updated  
bug default-priority default-severity  
regression regression:11.3  
#36715
- GitHub import results in 404 due to not having a default branch  
Deliverable Gitaly Manage  
Next Patch Release P2 S2 backend bug  
customer import reproduced on GitLab.com  
#40107
- MR Won't Merge After Poll Timeout  
Accepting merge requests Next Patch Release  
P3 S3 bug default-priority  
default-severity frontend  
#41795
- Add modal confirmation to pages domain



# Dokumentiranje - wiki

- Dokumentiranje promjena putem git-a
- Dokumentiranje grešaka i promjena – issue
- Dokumentiranje putem Wiki-a



# Zajednički dijelovi koda

- Snippets
- Ujednačavanje koda
- Korištenje zajedničkih predefiniranih rutina
- Predefinirane upute



# Primjer kompleksnog projekta s prezentiranim funkcionalnostima

- <https://gitlab.com/gitlab-org>



# Zajednički rad na Git projektu korištenjem centralnog upravitelja Git repozitorija (GitLab)

Hvala na pažnji!



[www.srce.unizg.hr](http://www.srce.unizg.hr)

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Srce politikom otvorenog pristupa široj javnosti osigurava dostupnost i korištenje svih rezultata rada Srca, a prvenstveno obrazovnih i stručnih informacija i sadržaja nastalih djelovanjem i radom Srca.

[www.srce.unizg.hr/otvoreni-pristup](http://www.srce.unizg.hr/otvoreni-pristup)

