

Versijų kontrolė

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2009 ruduo

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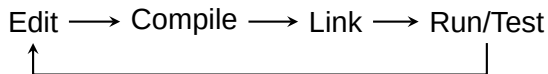


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Programos kūrimo ciklas

- Tipiškas programos kūrimo (mikro-)ciklas:



- klausimai:

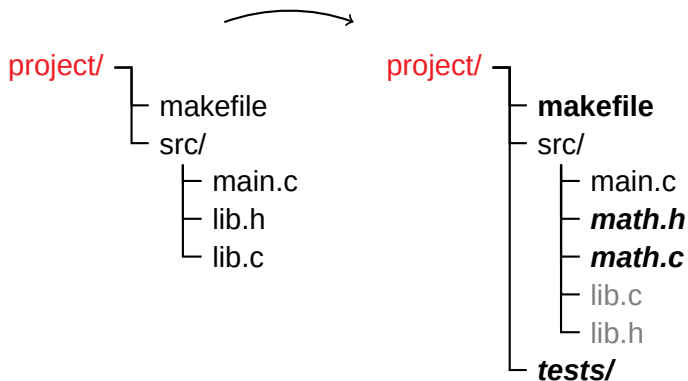
- kaip atrodė tas kodas, iš kurio surinkta naudojama programa?
- kokia programos versija suskaičiuoti rezultatai?
- kokie pakeitimai padaryti ir kur?
- kada atsirado ta ar ana programos eilutė, kas ją įrašė?

- problemos:

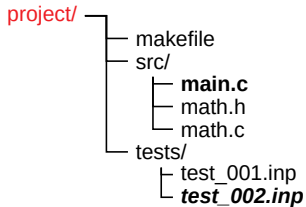
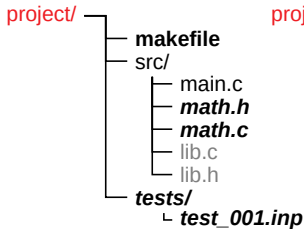
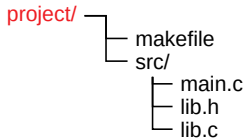
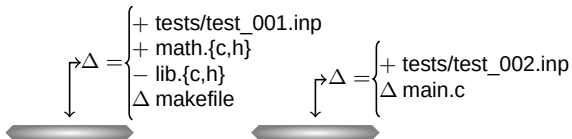
- kaip pasiekti, kad keli programuotojai, redaguodami tą patį tekstą, *netrukdytų* vienas kitam?

Projekto eiga

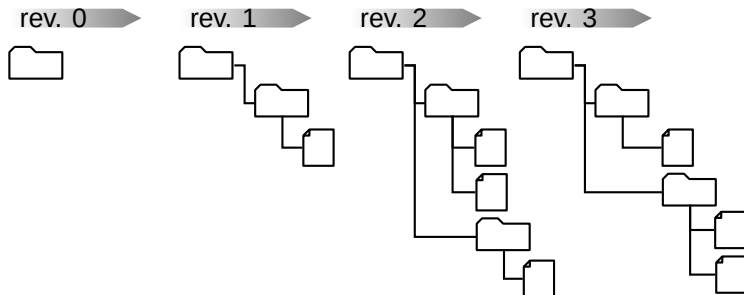
```
gedit makefile
rm src/lib.[ch]
gedit src/math.{c,h}
mkdir tests
```



Skirtumai („deltos“)



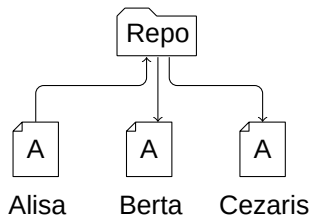
- Laikui bėgant, projekte atsiranda naujos revizijos¹:



¹Šis paveikslėlis ir visi sekantieji paruošti pagal Ben Collins-Sussman, Brian W. Fitzpatrick, C. Michael Pilato *Version Control with Subversion* e-knygą, <http://svnbook.red-bean.com/>, 2009-10-27

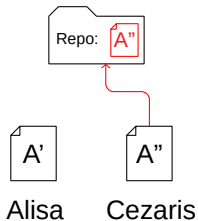
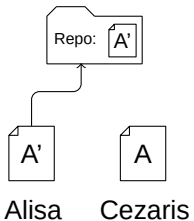
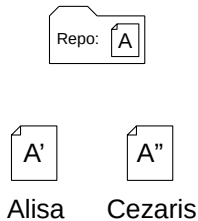
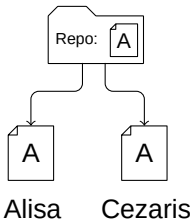
Repozitorija (saugykla)

Repozitorijoje laikoma informacija apie visus projekto pakeitimus

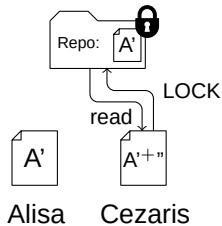
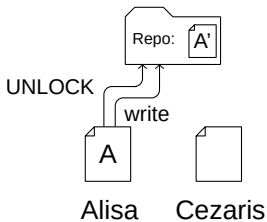
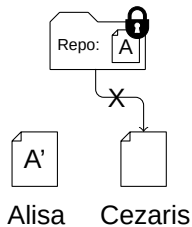
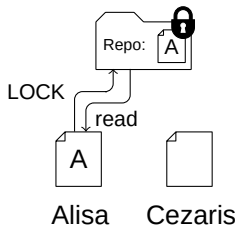


Konfliktai

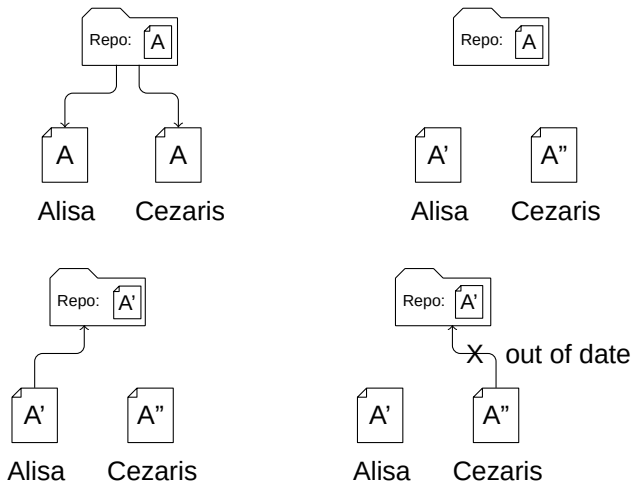
Kai du programuotojai skirtingai pakeičia tą patį tekstą, įvyksta konfliktas



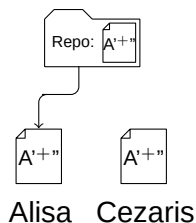
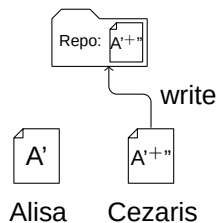
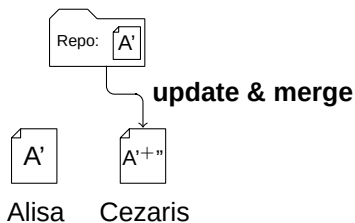
Konfliktų sprendimo būdas – lock-modify-unlock



Konfliktų sprendimo būdas – copy-modify-merge



Konfliktų sprendimo būdas – copy-modify-merge (tęsinys)



- Version control with Subversion

Ben Collins-Sussman, Brian W. Fitzpatrick, C. Michael Pilato

<http://svnbook.red-bean.com/>

2009-10-27

versijų kontrolės sistemų istorija

- 1975, M. J. Rochkind: SCCS (Source Code Control System)² – naudoja `diff`
- 1984, B. Kerningan: `put` ir `get`, padarytos naudojant taip pat `diff` ir `ed`³
- 1985, Walter F. Tichy: RCS – A System for Version Control⁴
- CVS – naudoja RCS.
- Subversion
- GIT, Monotone, OpenCM, Bazaar
- BitKeeper(BitKeeper?), Clear Case (IBM), VSS (Microsoft)

² M. J. Rochkind, The Source Code Control System, *IEEE Trans. Softw. Eng.*, **SE-1:4** 1975, 364–370

³ Brian W. Kernighan and Rob Pike *The Unix Programming Environment*, Prentice Hall, Inc., 1984; cituojama pagal:
Б. В. Керниган, Р. Пайк *Unix – универсальная среда программирования*, М.: “Ф. и С.” 1992, стр. 150

⁴ Walter F. Tichy, *Software Practices & Experience*, 1985, 637-654

Comparison of version control systems

Git	Subversion
Distributed	Centralised
Repository/-ies can be imchanged (corrupted)	Repository content is im- mutable (safe)
Authoritative version needs to be agreed upon	Clear authoritative project version
Does not have tools to ver- sion time-stamps	Can version time-stamps
Creates extra commits when merging text	Mergest text in a working copy