

Intro

1. Literature

Note: All of these books have been published in many editions. You can use (almost) all.

JAVA Language:

- Fain, Yakov: The Java Tutorial for the Real World. Smart Data Processing, Inc., 1. 8. 2002. ISBN 0-9718439-0-2.

OOP:

- RAJKUMAR, Buyya: Object-oriented Programming with Java: Essentials and Applications. Tata McGraw-Hill Education, 2009, ISBN: 978-0-07-066908-6

ALGORITHMS:

- CORMEN, T. H., LEISSERSON, Ch. T., RIVEST, R. L., STEIN, C. : Introduction to Algorithms. MIT Printing, 2000, ISBN: 007013151. [Poznámka: jedná se o standardní učebnici na amerických vysokých školách. Vyšla v mnoha vydáních.]
- Dasgupta, S., Papadimitriou C. H., Vazirani U. V.: Algorithms. July 18, 2006 [Dostupná na internetu]
- TÖPFER, Pavel : Algoritmy a programovací techniky. Prometheus, 1995, ISBN: 8085849836.
- RYCHLÍK, Jan : Programovací techniky. Nakladatelství KOPP, 1992, ISBN: 8090105173.
- DVORSKÝ, J.: Algoritmy I. Skriptum VŠB, 2007 [<http://www.cs.vsb.cz/dvorsky/>]

INTERNET:

- <http://programujte.com/clanek/2007040702-java-tutorial-technologie-1-dil/>
- <http://www.algoritmy.net/>
- <http://www.devbook.cz/java-tutorial-uvod-do-objektove-orientovaneho-programovani>

ALGORITHMS:

- CORMEN, T. H., LEISSERSON, Ch. T., RIVEST, R. L., STEIN, C. : Introduction to Algorithms. MIT Printing, 2000, ISBN: 007013151. [Note: it is a standard textbook for US universities . Exists in number of editions.]
- Dasgupta, S., Papadimitriou C. H., Vazirani U. V.: Algorithms. July 18, 2006 [Available on internet]

GIT:

- <https://guides.github.com/activities/hello-world/>

LECTURES:

Lectures and additional readings are available at GitHub server:

<https://github.com/TutorialJava/Vyuka.Tutorial/>

user=TutorialJavaStudent

password=Password_1234

ATTENTION,

These materials will change and repair during the semester.

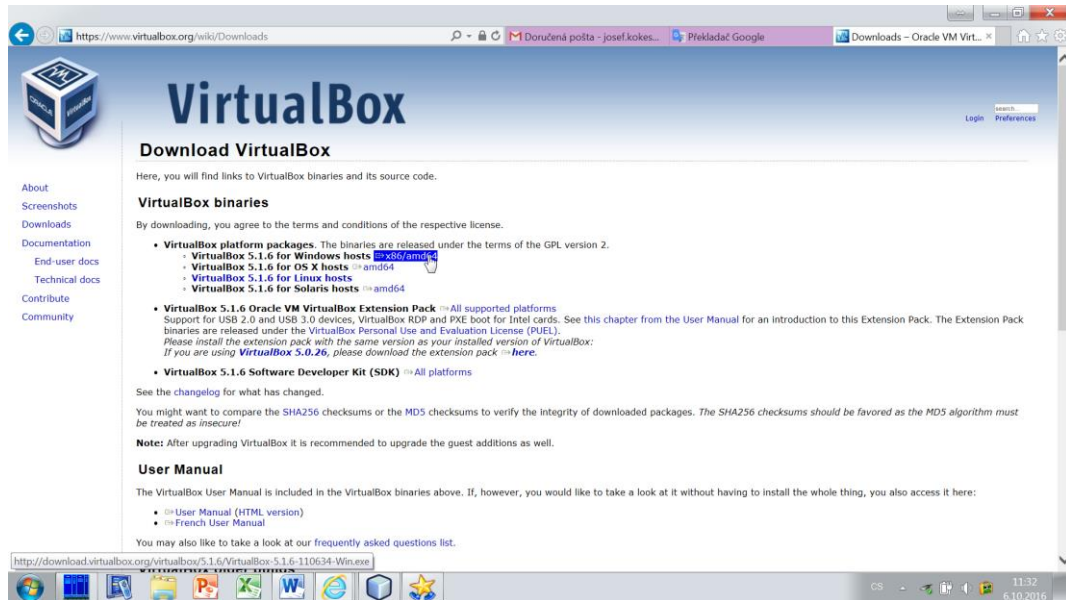
Always make sure that you work with the current version!

(Updating is performed using GIT)

Installation of VirtualBox (optional)

1.1. Step #1 – Download and Install

Download VirtualBox from the [website of Oracle](https://www.virtualbox.org/). Its use is free. Make sure that you download the correct version for your operating system.



<EN Installation is completely standard and seamless.

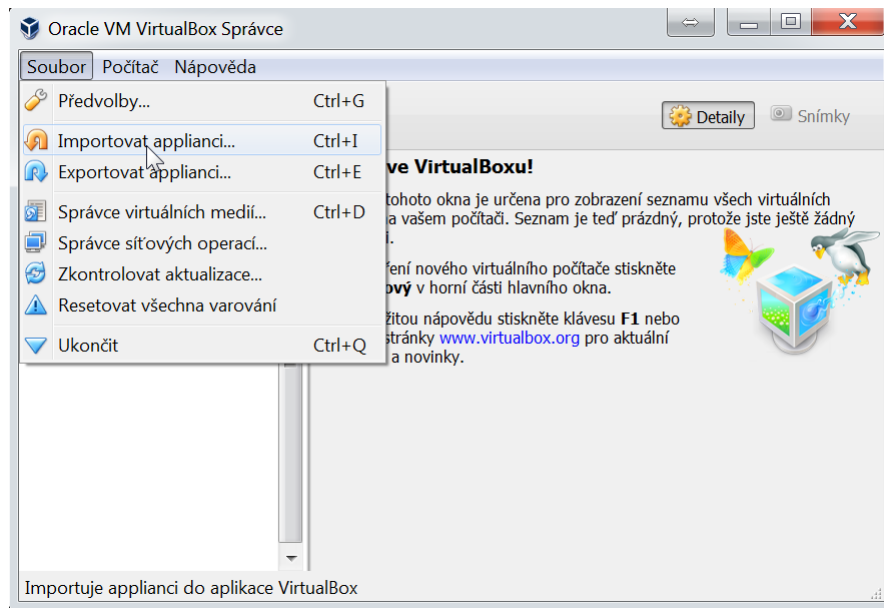
1.2. Step #2 – Creating a Virtual PC

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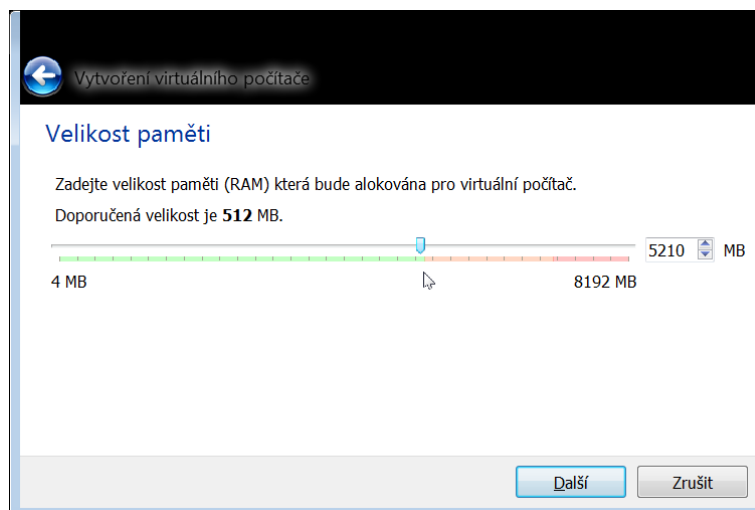
Virtual PC can be obtained in two ways:

- download pre-installed appliance, which is ready to use on <https://www.uloz.to/>, file EN59484984.zip (password= *RollingStonesLadyJane*). Import it into VirtualBox using *File* → *Import Appliance*;
- create a new one. Prepare *.ISO installation file for the correct version of Windows. Follow the instructions in the wizard. Once you have created a virtual PC, install integrated environment NetBeans by Oracle, and then SceneBuilder by Gluon. Finally, install application Git (only) from <https://git-scm.com/downloads>., instructions are here.

<http://robertgreiner.com/2010/02/getting-started-with-git-and-tortoisegit-on-windows/>. Of course, you can also add other applications you need.



Although the minimum usable memory is 0.5 GB, the computer it works incredibly slowly with it. Therefore, set the amount of memory for the greatest possible value, ie. At the border between the red and green field.



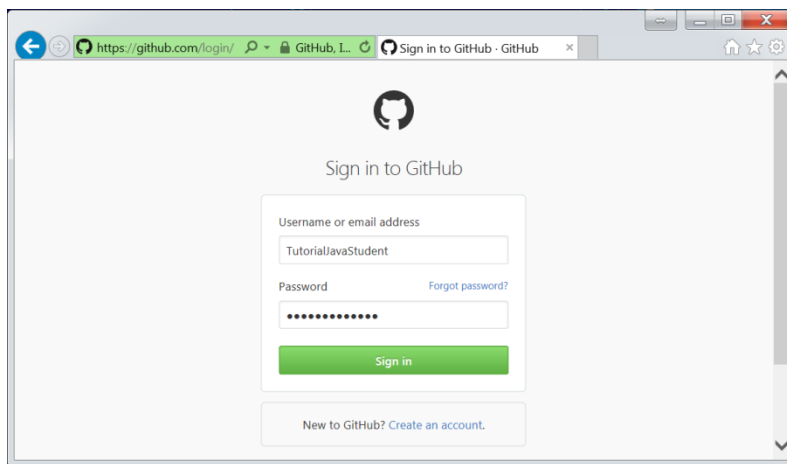
2. Working with GIT

1.1. Web Interface

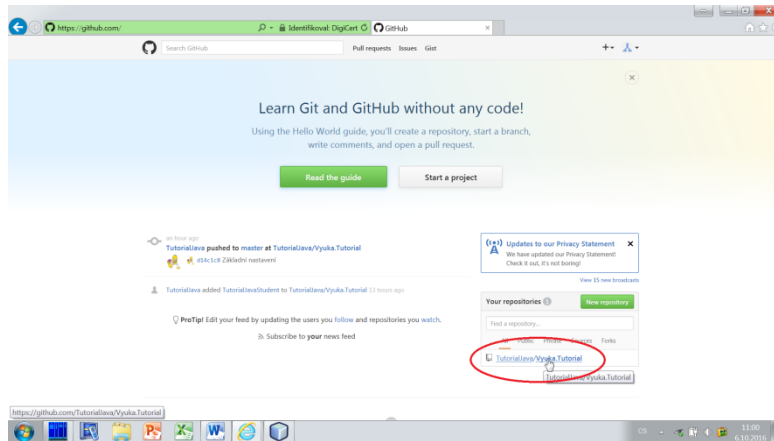
GIT is an extremely useful tool for collaboration and versioning. We'll use it so that you always have the latest version of both lectures and programs for exercise.

The basis of GIT is a cloud storage, which is called GitHub. It is widely used for programming, especially *open-source* projects. Storage for this subject can be found here:

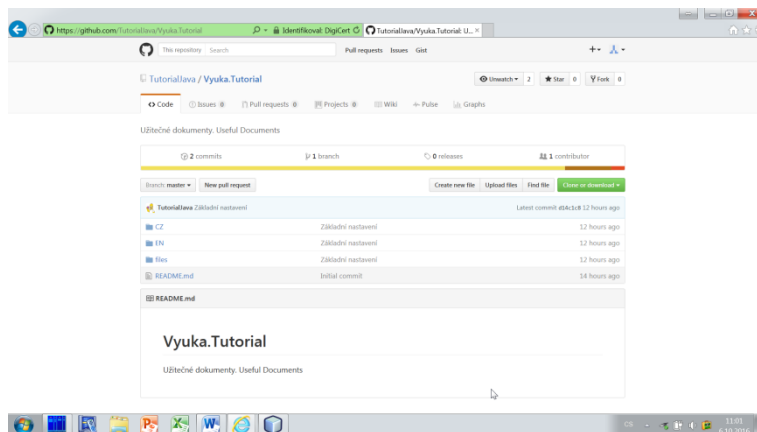
- URL= <https://github.com/TutorialJava/Vyuka.Tutorial>
- User=TutorialJavaStudent
- Password=Password_1234



This will take you to pages of our subject called *TutorialJava*.



Select repository *Vyuka.Tutorial*. This brings us to the directory with the lectures and other files. The directory **CZ** contains Czech version, **EN** contains English version. Directory **files** contains auxiliary files.

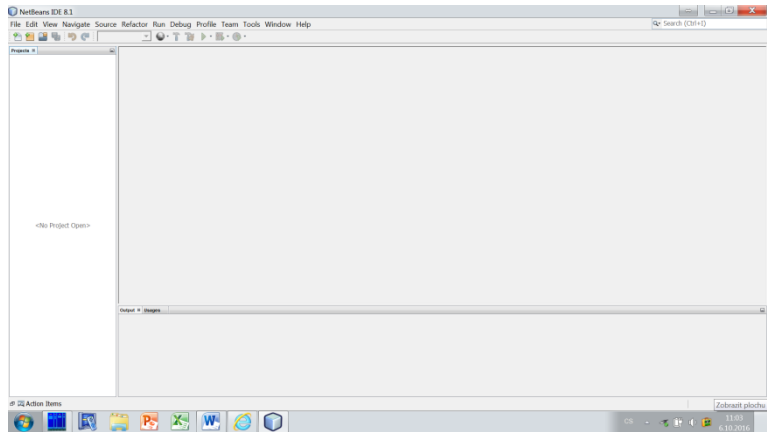


All documents can be downloaded as needed.

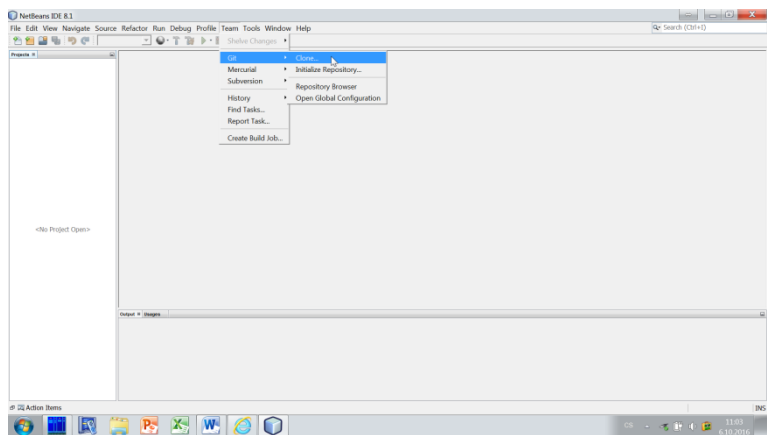
1.2. Linking with NetBeans

GIT important feature is that it can be fully integrated into NetBeans. This means that you can keep the most current versions of projects and other files using NetBeans. If you find an error somewhere, you can also fix and repair using GIT send to the server.

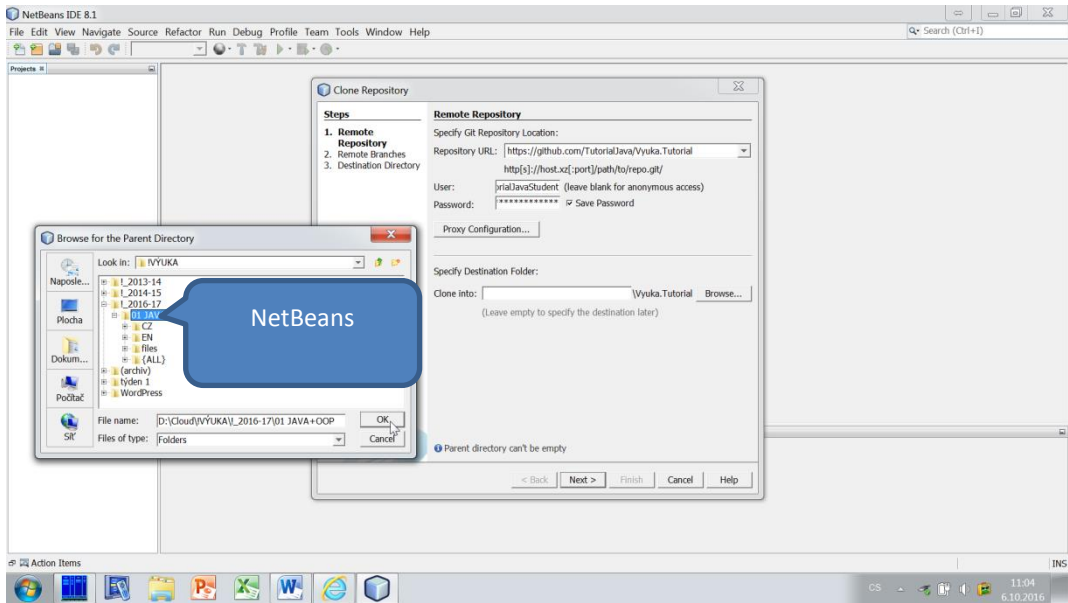
Both NetBeans and Git must be installed. Run the NetBeans:



Select Team → Git → Clone

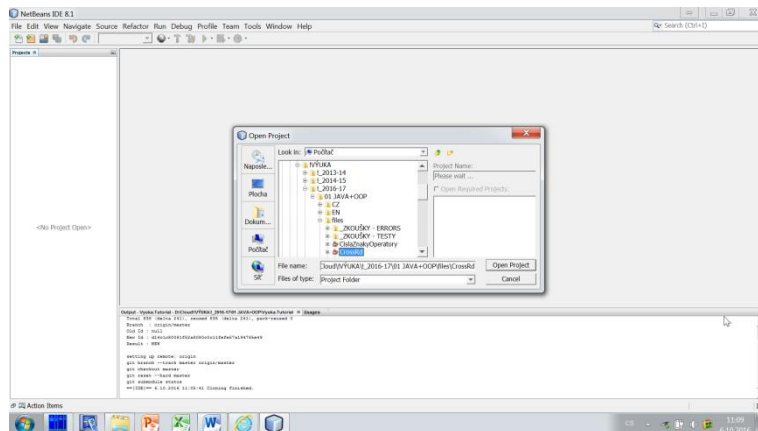


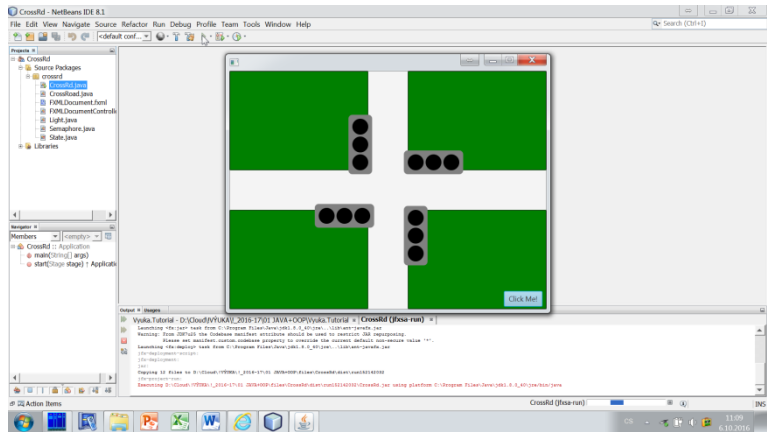
GIT is extremely useful tool for collaboration and versioning.



In the top of the form set credentials to GitHub (URL, name, password) in the bottom of the form, select where you want to create a shared directory. For example, it may be *Documents \ NetBeans*. After clicking *Finish*, content of GitHub is synchronized into your local direktory.

We make sure that everything went fine. For example, we can open any project, compile it and run





Assessments and Exams

1.3. Step #1 - Assessments

Assessment is awarded on the basis of the test. Test can pass directly before the test.

The test has an electronic form, through the web application Moodle (see later).

During the test is not allowed to use any aids, and especially internet. If someone is caught using the Internet during the test, it will be without mercy considered fraud.

To pass the test it is needed to reach 70% of the points. This limit is not intended strictly because it also depends on the severity of the errors.

For example, errors in spelling, diacritical, synonyms - that are generally few significant errors. In contrast, the ignorance of those parts to which I pointed out in lectures are very crucial./EN>

1.4. Exams

Credit is the condition for the exam.

The exam consists of written and oral parts.

As written part of the exam the student will write, debug and explain a simple program.

1) *Examples of typical tasks:*

- 1) *From a disk file load all the text. Text split into separate words, while omit all words of less than 5 characters. The remaining words sort alphabetically and write to a new file so that each line has one word.*
- 2) *Select all primes from a disk file and calculate the median from those primes.*
- 3) *Program a simple application with a picture of a car, which after pressing the button will move on the screen.*

After the practical part of the exam follows an oral part. During the oral part of exam the student in the example describes and explains some of phenomena or algorithms.

3. Obsah

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