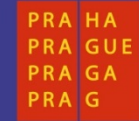




OPERAČNÍ PROGRAM PRAHA
ADAPTABILITA



EVROPSKÁ UNIE

EVROPSKÝ SOCIÁLNÍ FOND

Pogamut 3

Lekce 1 – Java Znovu navštívena

PRAHA & EU

INVESTUJEME DO VAŠÍ BUDOUCNOSTI

Faculty of Mathematics and Physics
Charles University in Prague
25th February 2013



UT2004 bots made easy!

Pogamut 3

Lecture 1 – Java Revisited



Lecture 1

Outline

1. Practice Terms
2. Test
3. Java & IDEs
4. Subversion, Maven
5. JUnit
6. Assignment



Practice Terms

Credits ~ Hours Donation

1 Credit	<i>45 minutes</i>
HL Artificial Agents	<i>2/2 points</i> <i>6 credits</i> <i>4,5 hours</i>
Lecture	<i>1,5 hours</i>
Practice	<i>1,5 hours</i>
Homework	<i>1,5 hours</i> lower-bound!

Practice Terms

Score-based Grading

Practice Scoring	Mondays	Thursdays	Topic	Attendance	Test	Test Scoring	Assignment	Assignment Scoring	Tournament	Tournament Scoring (percentil-scoring)			
										1st ... [100%]	(90%; 80%)	(80%; 70%)	(70%; 60%)
					Somewhat demanding		<i>Demanding, but we expect everybody to fulfill</i>		<i>Extra points not necessary to pass</i>				
1	25.2.2013	28.2.2013	Java Revisited		2	Java skill	8 Java-Revisited	10					
2	4.3.2013	7.3.2013			2		8	10					
3	11.3.2013	14.3.2013	Basic UT2004 Movement		2		8 Tag! Bot	10 Tag!		12	9	6	3
4	18.3.2013	21.3.2013	Steerings		2		8 Steerings	10					
5	25.3.2013	28.3.2013	Navigation		2		8 RobustNavigator	10					
6	1.4.2013	4.4.2013	A*, Visibility		2		8 Hide&Seek Bot	10 Hide & Seek		12	9	6	3
7	8.4.2013	11.4.2013	Items & Guns		2		8 ItemCollector	10					
8	15.4.2013	18.4.2013	Advanced Decision Making		2		8 Deathmatch bot	10 1v1 Deathmatch		24	18	12	6
9	22.4.2013	25.4.2013	Team Communication		2		8						
10	29.4.2013	2.5.2013	CTF		2		8 Capture the Flag bot	20 CTF!		24	18	12	6
11	6.5.2013	9.5.2013	POSH		2		8						
12	13.5.2013	16.5.2013	EmohawkVille		2		8		PogamutCup 2013	40, 30, 20			
13	20.5.2013	23.5.2013	EmohawkVille		2		8 EmohawkVille bot	20					
SUM					26		104	120		72			
Total days	13												

Grading	MIN (incl.)	MAX (excl.)
FAILED	0	160 We're going to be upset, this equals to FAILING THE WHOLE COURSE.
Almost Failed	160	200 We'll give you some extra assignment.
Qualified	200	220 You may attend to "Practice Final Exam" the PASS THE PRACTICE
Passed!	220	infinity You have passed the practice! You do NOT need to attend the "Practice Final Exam"

Student Strategy	Practices	Absences	Attendance	Test AVG %	Test	Assignment	Tournament attitude	Tournament	Final Score	Grade
Bad student	10	3	20	55	44 out of 80 max	90 out of 120 max	Does not mind...	0	154	FAILED
Standard student	13	0	26	80	83,2 out of 104 max	110 out of 120 max	Not necessary to pass.	0	219,2	Qualified
Standard student	13	0	26	75	78 out of 104 max	110 out of 120 max	Not necessary to pass.	0	214	Qualified
Standard student	12	1	24	75	72 out of 96 max	110 out of 120 max	Tries a bit / Got some luck	6	212	Qualified
Smart-head	10	3	20	75	60 out of 80 max	110 out of 120 max	Kicks twice in...	18	208	Qualified
Good student	12	1	24	75	72 out of 96 max	110 out of 120 max	Scores	18	224	Passed!
Exceptional student	12	1	24	80	76,8 out of 96 max	110 out of 120 max	Strive to win!	24	234,8	Passed!

Test 01

Java Skill

Find the test here (no-ads):

<http://alturl.com/37sog>

Permanent link:

<https://docs.google.com/spreadsheet/viewform?formkey=dFFna3g2Qmg3S1llLTFJaUxQVkZTeHc6MA#gid=0>

Time for the test:

20 min

Java & IDEs

Which / Where

Java

- JDK (preferably) 6, 32bit
 - <http://www.oracle.com/technetwork/java/javase/downloads/index.html>

IDEs

- NetBeans (must be) v7.1.2
 - <http://netbeans.org/community/releases/71/>
- Eclipse (preferably) v3.7.2, 32-bit
 - <http://www.eclipse.org/downloads/packages/eclipse-classic-372/indigosr2>

Java & IDEs

Configuration

Java Environment Configuration

- `$JAVA_HOME=C:\Program Files (x86)\Java\jdk1.6.0_37\`
- `$PATH=%PATH%;C:\Program Files (x86)\Java\jdk1.6.0_37\bin`
- Check `C:\Windows\System32\` and remove (move.bak) `java.exe`, `javaw.exe`, `javaws.exe`
- Watch out for Java auto-updates, it will reset your configuration

Eclipse Configuration

- Edit `ECLIPSE_HOME\eclipse.ini` blend following lines:
`-vm`
`C:/Program Files/Java/jdk1.6.0_37/bin/`
`-vmargs`
`-Xms256m`
`-Xmx1024m`
`-XX:MaxPermSize=256M`
- New lines are mandatory!

Subvesion, Maven

What? Why?

- **Source Control Management**

- CVS, SVN, Mercurial, Git, ...
- *If it's not in source control, it doesn't exist.*
- <svn://artemis.ms.mff.cuni.cz/pogamut>
- See: <http://coding-time.blogspot.cz/2008/04/subversion-visually-explained-in-30sec.html>

- **Project Build Tool**

- Maven, Ivy, (Ant)
- *I want to code, not assemble.*
- <http://diana.ms.mff.cuni.cz:8081/artifactory>
- See: <http://www.mkyong.com/tutorials/maven-tutorials/>
 - Truly needed is the section 'Maven Basic Operations'

Subvesion

Installation

- Pogamut is using Subversion
- Install (unpack) Subversion (SVN) console client
 - <http://sourceforge.net/projects/win32svn/>
- Set `$PATH` to point to the *bin* directory of the Subversion installation
 - E.g. `C:\Program files\Subversion\bin`
- Install graphical SVN client
 - <http://tortoisesvn.tigris.org/>

Maven

Installation

- Pogamut is fully “Mavenized”
- Download Maven (must be) v3.0.4:
<http://maven.apache.org/download.cgi>
- Unpack to `c:\maven` (or whatever...)
- Set `$PATH` to `bin` directory of the Maven installation
 - E.g. `C:\apache-maven-3.0.4\bin`
- Set `$MAVEN_OPTS=-Xmx1g -Xms128m`

JUnit

Maven Tests

- `@Test`
 - Annotates methods that should be executed by JUnit runner
- `mvn test`
 - Compiles the project and executes all TESTs within the project

Assignment 1

Java Revisited

1. Checkout the assignment:
<svn://artemis.ms.mff.cuni.cz/pogamut/trunk/project/Incubator/Lectures/JavaRevisited>
2. Finish all TODOs
 - DO NOT ALTER TESTS! You may change only files within `'src'` folder
3. Make sure the project passes Maven Test phase during the build

Assignment 1

Cheat Sheet

- HashMap
 - `.get(key)`, `.containsKey(key)`, `.put(key, value)`
- ConcurrentLinkedQueue
 - weakly consistent iterator
- Synchronized(mutex) {
 ...
}
- Inner/Nested classes
- hashCode
 - `.add(...)`, and in the end `.getHash(...)`
- WeakReference<T>
 - Auto-nullifies the reference once the object is not strongly-reachable

Assignment 1

Scoring

- `NullCheck`, `SafeEquals`
 - 2 points
- `Iterators`
 - 2 points
- `NKey`
 - 2 points
- `Lazy`, `LazyMap`
 - 4 points
- `Listeners`
 - This class is used by `Flag`
 - Extra 5 points

Send us finished assignment

Via e-mail:

- *Subject*
 - "Pogamut homework 2013 – Assignment X"
 - Replace 'x' with the assignment number and the subject has to be without quotes of course
 - ...or face **-2 score penalization**
- *To*
 - jakub.gemrot@gmail.com
 - Jakub Gemrot (Monday practice lessons)
 - michal.bida@gmail.com
 - Michal Bída (Thursday practice lessons)
- *Attachment*
 - Completely zip-up your project(s) folder except 'target' directory and IDE specific files (or face **-2 score penalization**)
- *Body*
 - **Please send us information about how much time it took you to finish the assignment + any comments regarding your implementation struggle**
 - *Information won't be abused/made public*
 - *In fact it helps to make the practice lessons better*
 - Don't forget to mention your full name!

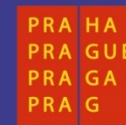
Questions?

I sense a soul in search of answers...

- We do not own the patent of perfection (yet...)
- In case of doubts about the assignment or hard problems don't hesitate to contact us!
 - Jakub Gemrot (Monday practice lessons)
 - jakub.gemrot@gmail.com
 - Michal Bída (Thursday practice lessons)
 - michal.bida@gmail.com



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EVROPSKÁ UNIE

Evropský sociální fond
Praha & EU: Investujeme do vaší budoucnosti