



OPERAČNÍ PROGRAM PRAHA
ADAPTABILITY



EVROPSKÝ SOCIÁLNÍ FOND

Pogamut 3

Lekce 8 – Na konec

PRAHA & EU
INVESTUJEME DO VAŠÍ BUDOUCNOSTI

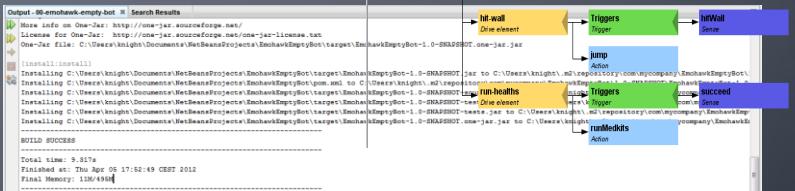
Faculty of mathematics and physics
Charles University at Prague
13th April 2012



UT2004 & UE2 bots made easy!

Pogamut 3

Lecture 8 – Conclusion



Warm up!

Fill the test for this lecture!
(you can get up to 5 bonus points!)

Home work: Emoticon Bot

Let's review home works from previous lectures!

Remember – How to handle emoticons:

```
emoticons.setEmoticon(...)  
Emoticons.getPlayerEmoticon(...)
```

```
//listener works now!  
@EventListener(eventClass = NewEmoticonEvent.class)  
public void newEmoticon(NewEmoticonEvent event) {  
}
```

Today's menu

1. Recapitulation

- What has been explained

2. Checklist for pretest / exam

- What you should have learned

3. What's next?

4. POSH in UnrealEngine2Runtime

- The last (bonus) homework

Recapitulation I

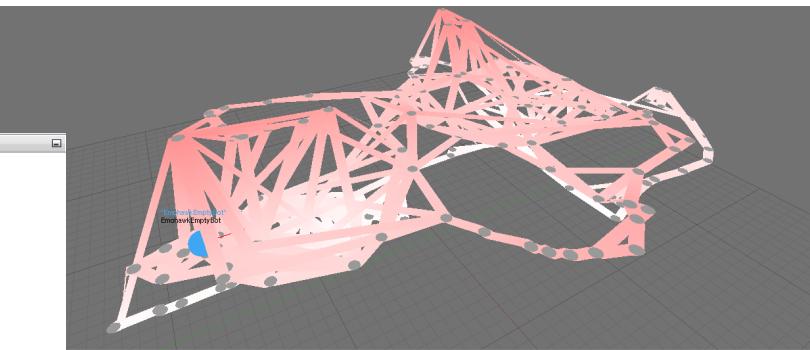
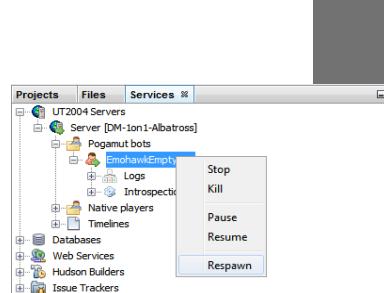
- What has been explained...
 - Basics of Pogamut
 - Basics of UT2004, UE2
 - Basic problems bots have to solve in 3D realtime environments
 - Basics of AI development
 - Basics of Java (ArrayList, HashMap, HashSet, Collections, chaining of setters...)

Recapitulation II

- You should remember Pogamut modules:
 - navigation, pathExecutor, pathPlanner, fwMap
 - players
 - items
 - shooting
 - steering, emoticons, animations
 - MyCollections, DistanceUtils
 - listener annotations, how to make them
 - world

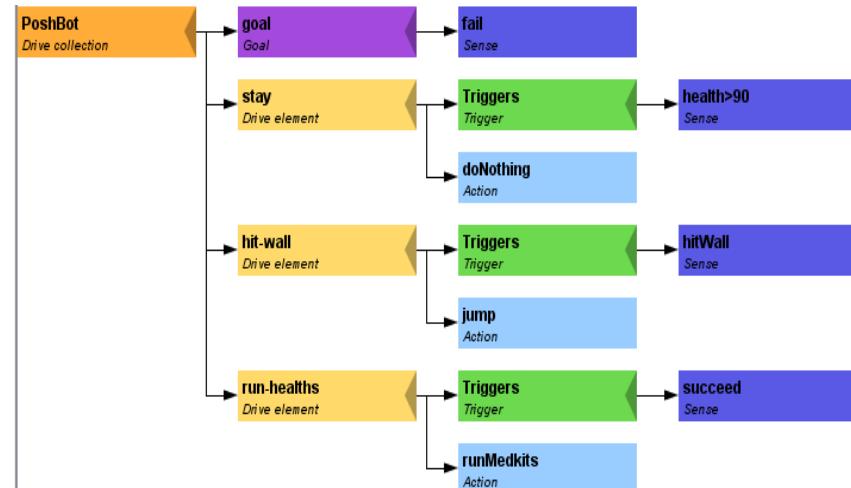
Recapitulation III

- You should know how to code the bot and how to debug the code in Pogamut effectively
 - Pogamut NetBeans plugin
 - Logging tricks (output window, bot name, etc.)
 - Debug info in UT2004/UE2 provided by GameBots (CTRL/ALT + H)
 - How to read Pogamut exceptions
 - What to do when NB aren't showing Javadoc
 - Download sources / JavaDocs / restart NB



Recapitulation IV

- You should know how to use POSH...
 - What is POSH
 - What is competence and how to use it
 - How to create new senses and actions
 - How to add actions, senses and competences to POSH plan
 - How to debug POSH effectively





Recapitulation V

- You should know where to look when you don't know something: <http://pogamut.cuni.cz>
 - Pogamut JavaDoc (Documentation)
 - http://pogamut.cuni.cz/pogamut_files/latest/doc/javadoc/
 - Latest (devel) JavaDoc (at Maven Sites)
 - <http://diana.ms.mff.cuni.cz/maven-sites/pogamut/>
 - Pogamut tutorials (Documentation)
 - http://pogamut.cuni.cz/pogamut_files/latest/doc/tutorials/
 - Pogamut example archetypes
 - <http://diana.ms.mff.cuni.cz:8081/artifactory/libs-release-local/archetype-catalog.xml>
 - Pogamut forums (Forum)
 - <http://diana.ms.mff.cuni.cz/main/tiki-forums.php>

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2. **Checklist for pretest / exam**
 - **What you should have learned**
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4. POSH in UnrealEngine2Runtime
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Checklist I

I know how to...

- Startup UT2004 / UE2 dedicated server
- Startup UT2004 / UE2 GUI
- Switch between spectator/player mode inside UT2004/UE2
- Materialize (== import) Pogamut archetype into NetBeans
- Run bot project within NetBeans
- Observe bot within the environment
- Stop running bot project from NetBeans

Checklist II

I know how to...

- Get nearest (euclidian / shortest-path-length) and/or **visible** NavPoint, Item, Player
- Get bot current location and rotation
- What distance of 100 UT units is
- Get other NavPoint, Item, Player
- Read other Player animation & emoticon type

Checklist III

I know how to...

- Navigate bot to some NavPoint
- Navigate bot to some Item
 - How to setup ItemPicked listener
 - How to move a bit in case that navigation was not 100% perfect
- Navigate bot to some Player
 - ⇒ Use either navigation or pathExecutor and fwMap
 - ⇒ Setup listener for path events, STUCK in particular
- Send text message to global chat
- Display emoticon
- Perform some custom animation
- Use steerings

Checklist IV

I know how to...

- Start multiple bots at once from `main` method
- Get collection of all `NavPoints` in the map
- Get collection of all `Players` in the map
- Check whether the `Item` or `Player` is visible
- Use `MyCollections`
- Use `DistanceUtils`
- Use `TabooSet` (`initialize`, `tabooize`, `filter items`)
- Use `Cooldown` and `Heatup`
- Setup listeners, know what is the difference between
`@EventListener` and `@ObjectEventListener` and when to
use them

Checklist V

I know how to...

- Locate and open SPOSH plan in within project explorer inside NetBeans
- Edit SPOSH plan (add, delete, move actions/senses/competences) using GUI
- Check how SPOSH plan looks in text
- Create new actions and senses
- Utilize action's done () method
- Add state variable into your Context and access it from senses and actions

Checklist VI

I know how to...

- Use logging to your advantage
- Read Pogamut log and exceptions
- Start project in Debug mode
- Place breakpoints in your code
- Use Variables window in NetBeans to introspect bot's variables in Debug mode
- How to read POSH logs

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What's next?

Schedule

- 17.4.2012 (Tuesday), 15:40-17:10 , SW1
 - Last Pogamut practice
- 20.4.2012 (Friday), 12:20-14:00 , SW1
 - Pretest day
- 24.4.2012 (Tuesday), 12:20-14:00, SW1
 - Pretest day
- 4.5.2012 (Friday), 10:40-12:10, S3
 - Prolog revisited
- 4.5.2012 (Friday), 12:20-14:00, SW1
 - Pretest day
- 11.5.2012 (Friday), 12:20-14:00, SW1
 - Goal practice
- 18.5.2012 (Friday), 14:00-18:00, SW2
 - Final Exam
- 22.5. (Tuesday) or 28.5. (Friday) 2012, SW2
 - Goal experiment

Do I qualify for a pretest?

We hope you do...

- You need **80 points** and have **max 1 absence!**
- What if I don't have 80 points?
=> Do more homework, send them to us ASAP!
- What if I have 2 absences but I still want to qualify?
=> You need 95 points!
- What if I have more than 2 absences?
=> Mail us! We'll think out something...

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Pogamut POSH Bot on UE2

- Download the Emohawk UE2 POSH Bot:
 - http://pogamut.cuni.cz/pogamut_files/lectures/2011-2012/Lecture08-EmohawkModularSPOSHMoodBot.zip
- Before you launch the bot, you need to start UnrealEngine2Runtime server:
 - Go to directory UnrealEngine2RuntimeDemo/System/ and launch startEmohawkServer.bat there.
 - To observe the bot in the environment launch startUE2Runtime.bat (after the server is launched).

Assignment 8

15 / 100 points

- Implement two bots communicating with each other with emoticons in POSH.
 - When the bot sees another bot/player he will approach him and say hi (through emoticon).
 - The bot reacts to emoticons of other bots by his own emoticons.
 - Use UnrealEngine2Runtime, in UT2004 there are no emoticons!
 - Use at least one competence in your plan!

Assignment 8

Cheat sheet

```
//set bot emoticon  
emoticons.setCenterEmoticonType(EmoticonType.HI_213,  
    5);  
  
//set bot init location so you don't have to search  
new Initialize().setName("Bot").setLocation(new  
    Location(6513,1570,-3440)); //near the sphere  
  
//listen to other bot emoticons  
@EventListener(eventClass = NewEmoticonEvent.class)  
public void newEmoticon(NewEmoticonEvent event) {  
    log.warning("New emoticon arrived");  
}
```

Concluding remarks

- Write us your ideas, remarks, suggestions about Pogamut modules, API, etc.
- Write us bugs you'll find or put them to <http://pogamut.cuni.cz/pogamut-mantis/>
- Did you like Pogamut? You can contact us about bachelor and or master thesis based on Pogamut (or 3D virtual worlds in general).

Send your assignment to

- Completely zip-up your project(s) folder
 - Without target directory!
- Send it to:
 - Jakub Gemrot (Friday practice lessons)
 - jakub.gemrot@gmail.com
 - Michal Bída (Wednesday practice lessons)
 - michal.bida@gmail.com
- Write us how much time you have spent on the assignment respectively!



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DĚKUJI ZA POZORNOST

