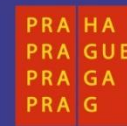




OPERAČNÍ PROGRAM PRAHA
ADAPTABILITA



EVROPSKÝ SOCIÁLNÍ FOND

Pogamut 3

Lekce 3 – Mapa 2

PRAHA & EU
INVESTUJEME DO VAŠÍ BUDOUCNOSTI

Faculty of mathematics and physics
Charles University at Prague
9th March 2012



UT2004 & UE2 bots made easy!

Pogamut 3

Lecture 3 – Exploring the map



Warm Up!

- Quickly fill test for this lesson!

Today's menu

1. How to see & How to move
 - Navigation graph
 - NavPoints, NavPointNeighbourLink, Items
2. Events / Listeners / Annotations
 - Bot startup sequence
3. **World navigation**
 - **Path planner, Path Executor**
4. Navigation
 - Floyd-Warshal Map, PathAutoFixer, TabooSet

World navigation

Step by step

1. Decide where to go
2. Plan the path (list of navpoints)
3. Follow the path
 - Handle jumps&lifts along the way!
 - Do you know right constants?
 - World is non-deterministic, be sure to check how the action is executing!

Don't worry it's already wrapped up 😊

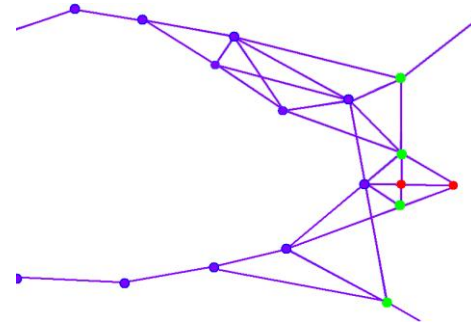
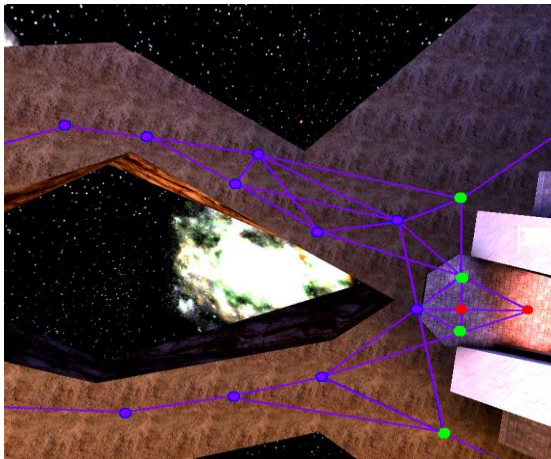
World navigation

Path planner & Path executor

1. Decide where to go (Decision making!)
 - `items.getSpawnedItems(ItemType)`
 - `DistanceUtils.getNearest(...)`
2. Plan the path (*list of navpoints*)
 - `pathPlanner.computePath(
ILocated from, to)`
3. Follow the path
 - `pathExecutor.followPath(path)`
 - `pathExecutor.isExecuting()`
 - `pathExecutor.addStuckExecutor(...)`

World navigation

NavigationBot



Let's check it out inside NavigationBot now!

World navigation

Path planner & Path executor

1. Decide where to go (Decision making!)
 - `DistanceUtils.getNearest(...)`
 - Is it ok to use this method?
2. Plan the path (list of navpoints)
 - `pathPlanner.computePath(ILocated from, to)`
 - Watch out for UT2004 quirks! Max 31 navpoints per path (+ starting position location == 32 path points).
3. Follow the path
 - `pathExecutor.followPath(path)`
 - `pathExecutor.isExecuting()`
 - Watch out for its statefulness!

Assignment 4 (or HomeWork)

10 / 100 points

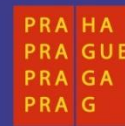
- Alter **NavigationBot** to create **CollectorBot**
 - Implement collector behavior – always try to get to the nearest spawned item
 - How to be sure that the bot has arrived to the item's location?
 - What if the location is currently unreachable?
 - See `TabooSet` class

Send your assignments to

- Completely zip-up your project(s) folder
- Send it to:
 - Jakub Gemrot (Friday practice lessons)
 - jakub.gemrot@gmail.com
 - Michal Bída (Tuesday practice lessons)
 - michal.bida@gmail.com
- Write us how much time you have spent on each of the assignments!



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Evropský sociální fond
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