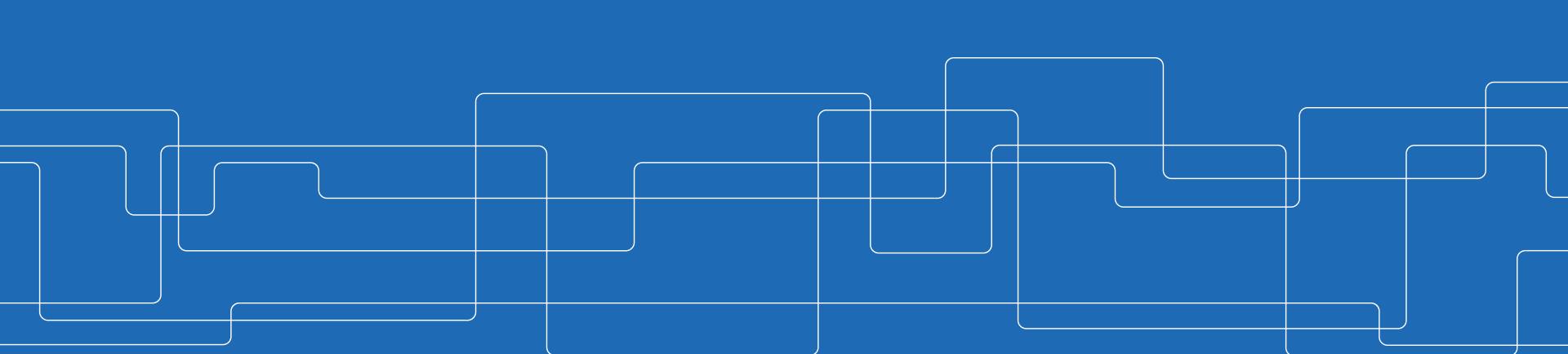




ID2209 Distributed Artificial Intelligence and Intelligent Agents

Homework 1





Course Staff

- Mihail Matskin (Course Coordinator)
- Edward Tjörnhammar, Shatha Jaradat, and Lorenzo Corneo (Course Assistants)
 - How to contact:
 - We will use Canvas for communication, where we can open discussions (more about Canvas soon)
 - Please do make an appointment by email before visiting any course staff



Information about assignments

- We assume **2** members per group in all activities:
 - Homework
 - Project
- Less is fine (but no extra benefits to it!)
- More than 2 members per group is not appreciated!



Information about assignments

Three Homework

- Almost ONE week time for each homework
- 10 min presentation of the homework
- In-time submission and approval of all Homework, gives you 5 Bonus points

One Project

- Almost TWO weeks for Project
- 15 min presentation for project.
- In-time submission and approval of Project, gives you 5 Bonus points



Important Dates

Assignment Number	Presentation	Submission Deadline
Homework 1	12 November	22 November
Homework 2	20 November	29 November
Homework 3	27 November	6 December
Project	4 December	20 December



Information about Canvas

- Canvas is a user friendly educational tool that we can use to manage:
 - Homework Submission
 - Announcements
 - Discussions
- You will receive a course invitation email.
- Confirm your registration by following the steps that will be shown to you in Canvas.



Information about Canvas

Homework description is added under modules:

- Home
- Announcements
- Assignments
- Discussions
- Grades
- People
- Pages
- Files
- Syllabus
- Outcomes
- Quizzes
- Modules**
- Conferences

A screenshot of the Canvas LMS interface. On the left, there's a sidebar with navigation links. The "Modules" link is highlighted with a blue background. To the right, there are two expandable sections for "Homework 1" and "Homework 2". Each section contains a file icon and a PDF file name: "Homework_1.pdf" for Homework 1 and "Presentation_Homework_1.pdf" for Homework 2. Below these, there's a dashed horizontal line. Under "Homework 2", there's another expandable section labeled "Homework 2" which contains a file icon and the PDF file name "Homework2_description.pdf".

- ☰ ▾ **Homework 1**
- ☰ ▾ **Homework 2**

- ☰ ▾ **Homework 1**
- ☰ ▾ **Homework 2**



Information about Canvas

Submit your homework solution online

A screenshot of the Canvas LMS interface. At the top, there's a dark header bar with the KTH logo on the left, followed by "Courses ▾", "Grades", "Calendar", "Kazem Nazmi", "Inbox", and "Settings". Below the header, the course navigation shows "ID2207" and the path "Home > ID2207 > Assignments > test". On the left, a sidebar menu includes "Assignments" (which is highlighted in light gray), "Discussions", "Grades", "People", "Syllabus", "Quizzes", and "Conferences". The main content area is titled "test" and contains a "Homework 1" section. It shows the assignment details: "Due No Due Date", "Points 0", "Submitting a file upload", "File Types pdf", and "Available after Aug 16 at 4pm". A "Problem Description:" field is present. In the bottom right corner of the content area, there is a blue button labeled "Submit Assignment" with a red rectangular border around it.



Homework 1



Homework 1

Topics covered in this session:

- Hands on experience with agent platforms
- Programming and implementing software agents using JADE agent platform
- Programming agents in the context of a practical scenario
- Complementary material

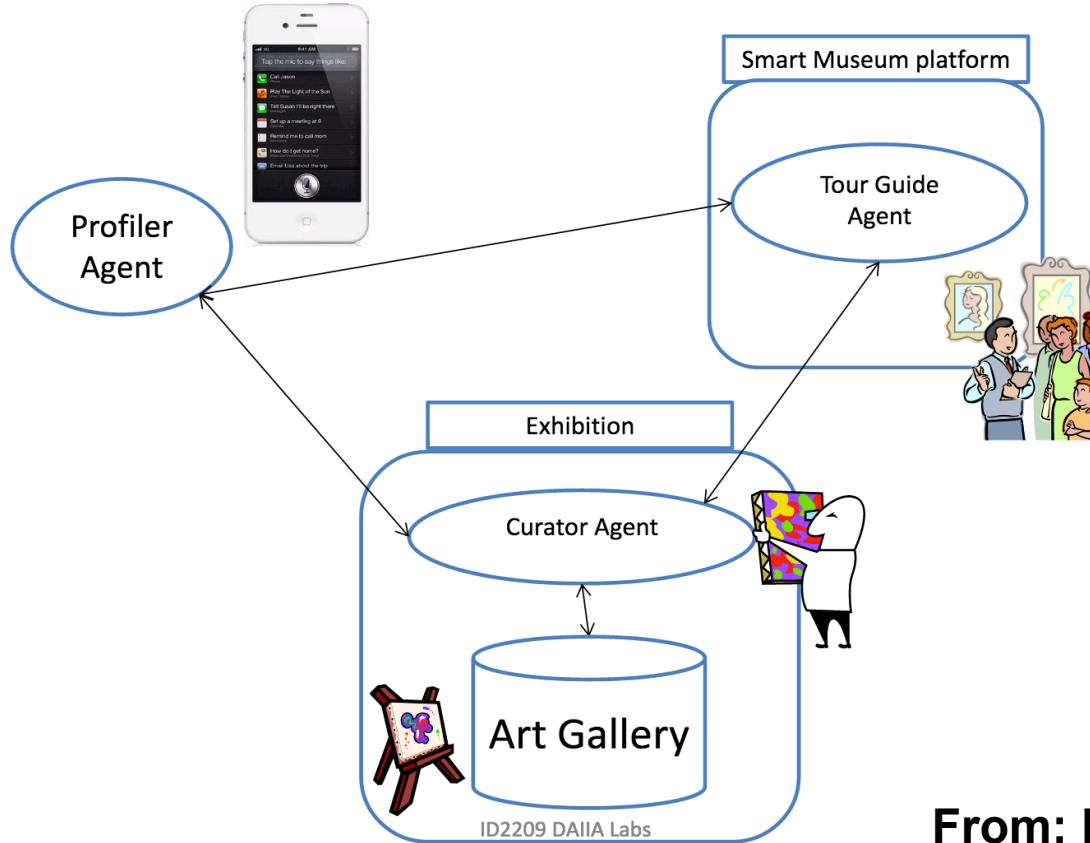


Labs Theme: Virtual Exhibitions



From: Nima Dokooohaki

SmartMuseum Agent Framework





Agent Details

Profiler Agents maintains the profile of the user.

- The profile contains basic user information (age, occupation, gender, interest, etc) and visited items (in our case museum artifacts).
- Profiler Agent travels around the network and looks for interesting information about art and culture from online museums or art galleries on the internet.



Agent Details

Tour Guide Agent retrieves the information about artifacts in the gallery/museum and builds a virtual tour (upon the request) for profiler agent.

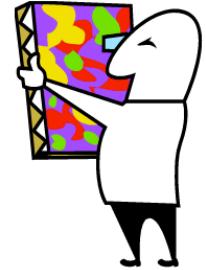
–The virtual tour contains list of related items (based on user's interest, age, etc..)





Agent Details

- Curator Agent monitors the gallery/museum.
- A gallery/museum contains detailed information of artifacts such as:
 - id, name, creator, date of creation, place of creation, genre etc.





Interaction among agents

- The Profiler Agent interacts directly with Tour Guide Agent to get a personalized virtual tour.
- The Profile Agent interacts with Curator Agent to obtain detailed information about each of the items stated in the virtual tour.
- Tour Guide agent interacts with Curator Agent in order to build the virtual tour.



Task #1

- Implementation of Agent Behaviors
- Implement agent behaviors in JADE Framework with respect to scenario proposed.
- Behaviors should correspond to each category below:
 - ❑ Simple Behavior (at least 5 different behaviors):
 - CyclicBehaviour, MsgReceiver, OneShotBehaviour, SimpleAchieveREInitiator, SimpleAchieveREResponder, TickerBehaviour, WakerBehaviour
 - ❑ Composite Behaviors (at least 2 different behaviors):
 - ParallelBehaviour, FSMBehaviour, SequentialBehaviour



Task #2

- Using DF (Directory Facilitator) agent.
- In the context of the scenario proposed define the role of the DF agent and implement the following activities for agents (Profiler, TourGuide, Curator) with respect to scenario proposed:
 - ❑ Implement an agent that provides some service and registers it at DF.
 - ❑ Implement an agent that can discover all registered services at DF, asks user for its choice and then displays the parameters expected to use that service.
 - ❑ Implement an agent that subscribes to DF and gets notified each time the desired service is published at DF.



Deliverables

- A report document explaining what you did in this homework.
- Documented source code (with instructions for execution)
- Submit your homework online in Canvas.



Important Information

- Send us the group member names to form groups in Canvas
- You can find links of JADE tutorials in Canvas under modules



Materials taken from web

“AppsExpand Museum Horizons, iphone lifemagazine”, 2011 March issue

[http://www.iphonelife.com/issues/2011March-April/
AppsExpandMuseum](http://www.iphonelife.com/issues/2011March-April/AppsExpandMuseum)

”Will mobile phoneappsrevolutionzemuseums”,
June 2010:

[http://www.museumsassociation.org/news/
15062010-apps-news](http://www.museumsassociation.org/news/15062010-apps-news)