

The seminar 1a: Introduction into the subject **Autonomous Systems**

Objectives of the seminar:

- to introduce the subject
- to introduce the requirements of the subject
- to introduce the protocol for final project

update: 18. 9. 2018

For receiving credits, it is necessary to complete the project:

PROJECT: A student will prepare the analysis and the design of the multi-agent system (MAS) that will solve particular problem. A student can work individually or in a group with one colleague (max. 1). Topics for projects are offered by a teacher. A student can suggest own topic that has to be consulted with a teacher.

MORE DETAILED LOOK: Analysis and the design of the multi-agent system (MAS)

- **Part 01 - Analysis of the MAS will consists of:**
 - *Selection of the topic* is the first step of the project. It has to be clear which kind of problem the MAS will solve, i. e. for which purposes the MAS will be used. The student should choose the topic from the list of possible projects that will be proposed by a teacher or on the basis of the own experience, hobbies, interests. In the second case, the topic has to be consulted with the teacher in the view of the complexity, reasonability and content.
 - *Review of the literature* (information sources) has to be done as the second step of the analysis of the MAS. Review of the literature should offer the aggregate overview of the actual state (state-of-the-art) of the application domain. In case of the project, the overview of the literature should include: “what was done in the application domain and what is the actual view on this domain”. As the example: If I want to develop the new bioinformatics-based algorithms for biomedical data analysis, I have to know which algorithms have been already developed. What is their structure? For which purposes are used? Where are they used? ... etc. Five citations (information sources) should be mentioned at least. For more information about the review of the literature, please see the following sources: <http://library.bcu.ac.uk/learner/writingguides/1.04.htm>, <http://writing.wisc.edu/Handbook/ReviewofLiterature.html>. Use the Harvard style of citations formatting in the end of the review of the literature (for more details about this style, please see the following link as the example: https://www.staffs.ac.uk/assets/harvard_quick_guide_tcm44-47797.pdf). The citations are not part of the review of the literature, i. e. the length of the review have to be A4. Only English sources are accepted for the aZT1 project. It is not necessary to send the sources with the email, but the teacher should have the link to citation in the documentation (the protocol) of the project.

Use the following scientific libraries as the information sources for your projects (Only these ones are acceptable.):

- www.springerlink.com
- www.sciencedirect.com
- Any information source that can be received from the following databases on the university web page: <https://www.uhk.cz/cs-CZ/UHK/Centralni-pracoviste/Univerzitetni-knihovna/Databaze#UHK-Article>
- The sources have to be actual (2010 or later).
- Personal webpages, comments, discussions are not acceptable as the information sources for the projects.
- *Mind mapping*: Textual description of the state of the art will be graphically visualised with the mind mapping technique where the research papers and their contents (only main ideas) will be visualised in the tree/graph structure in the Cmap tool freely available software (<https://cmap.ihmc.us/>)
- *Completion of the ODD+D protocol* (Overview, Design concepts and Details + Decision making). ODD+D protocol describes the details of the analysis of the MAS that is going to be developed. The protocol documents properties, an architecture and implementation details of the intended MAS. Structure of this protocol will be given to students for filling.
- **Part 02 - Design of the MAS will consist of:**
 - *Conceptualisation* of the intelligent agents and the whole MAS with the usage of the AML language is going to be realised. AML diagrams will be the output of this part of the project. You will use the StarUML CASE tool (<https://sourceforge.net/projects/staruml/files/staruml/5.0/>) and the AML language for conceptualisation (<http://staruml.sourceforge.net/v1/modules.php>).
 - **Important note: The basic knowledge of the UML is necessary for the conceptualisation (at least the class diagram is inevitable to know!).**

Presentation of the project:

- The presentation of the project is compulsory part of the project. If you do not present results of your project in particular dates, you will not receive credits. The presentation is going to be during the final weeks of the winter semester. The particular datum is going to be specified before the credits week.
- The length of the presentation should take approx. 10 – 15 minutes. You should present the basic ideas of the project.
- Quality of the presentation is evaluated and points are part of the total evaluation of the whole project.

Documents for doing the project (available on the Ukazky\Husakova.Martina directory):

- aAUTS-2017-protocol-2018.docx

Final remarks:

- Topics covered by the project have to be different from the topics of your colleagues and topics that are used in the seminars or lectures.
- For credits, it is necessary to have as a minimum 60 points totally.
- The project is your individual own work.
- Presentation of the final project is the part of the evaluation.
- Presentation of the projects is compulsory.
- Project is not possible to revise. You can send the project only once.
- Use the following email address for sending the project: martina.husakova.2@uhk.cz
- Final date for sending your project is the following: **2. 12. 2018**

End of the seminar

Exercises

- Look and study the protocol of the project, see Seminar01 directory (Ukazky)
- **Think about topic for your project and select the topic for your project for the next seminar, see the list with topics in the TopicsForProject-2018.docx (Seminar01).**

The most important keywords

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