Guide for Negotiation Session November 14th

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Introduction

This document contains detailed instructions related to the negotiation session on November 14th which is a part of the practical assignment about negotiation. It also contains two forms for recording a preference profile and a negotiation agreement that you will need during this session. In addition during this session you will need: scratch paper, pen, pocket calculator. You may also want to consult the User Guide for the Negotiation Environment. All documents that you need are included in the zip file made available to you on Blackboard (See Assignments/Negotiation Experiment folder).

We assume that you have finished and read the assignment.pdf and userguide.pdf provided to you on Blackboard (See Negotiator4Nov*.zip file), and that you have practiced with the environment and laptop domain provided to you at the start of this quarter.

This document consists of four parts: (i) an introductory part in which you can practice and briefly familiarize yourself with a new negotiating software agent, (ii) a part where you create a utility space for the party domain (Section I), (iii) a part where you negotiate with another student in this domain (Section II), and (iv) a part where you negotiate in this domain against the software agent provided to you (Section III). Please make sure you carefully follow the steps as described in this Guide.

Short overview of session schedule

9:00.   Introduction
9:15.   Practice and familiarize yourself with a new negotiating software agent.
9:45.   Define and record your preferences regarding the party domain.
10:30. Negotiate an agreement with another student on the party domain.
11:15 Negotiate an agreement with a software agent on the party domain.
12:00 End of session

Location (From 9:15)

The Table below indicates the room you will need to be in during this session, and your negotiation partner for the human-human negotiation part (Section II below).

Name	Name	Room
Casper van Est (34)	Noureddine Ou-Aissa (35)	DW-150
Laura Bongaardt (30)	Nick C.R.Klomp (32)	DW-150
Laurent Magreault (28)	Tobi Vollebregt (33)	DW-150
Menno den Hollander (27)	Xiao fan Sun (29)	DW-150
Frits van Campen (25)	Yong Hua Chan (31)	DW-150
Roelof van den Berg (24)	Vasilios Stasinopoulos (40)	DW-150
Maarten van Zomeren (23)	Galateia Iatraki (37)	DW-150
Martijn Harmsen (20)	Thomas Karavides (38)	DW-160
Hannes Smit (17)	Iulia Chiriacescu (26)	DW-160
Brian Frijmersum (16)	Trung Long Ngo (19)	DW-160
Tom Wortel (15)	Bruno Scheele (21)	DW-160
Noortje Sturm (14)	Matthijs Neven (39)	DW-160
Michel Weststrate (13)	Kenji Sihan (18)	DW-160
Lidia van Halderen (12)	Chakib Boucharraba (36)	DW-160
Bart Luijten (11)	Niels ter Heijden (22)	DW-160

Table 1

Detailed Instructions

9:00	Overview of Negotiation Session and brief introductory remarks about negotiation.
915	• Go to a computer (one computer per person) in the room indicated on the previous page. • Log in and goto Blackboard (**BB**) • Fetch the Negotiator14Nov.zip file from BB (IN4010TU 2007-2008/Assignments/ Negotiation Session) • Install the file as described in the Negotiation User Guide contained in the zip file.

925	The coming 20 minutes you have some time to familiarize yourself with a new automatic negotiation agent, called the BayesianAgent. This agent is a more sophisticated negotiator than the simple agent provided to you earlier. You will play with the Bayesian Agent in the laptop domain that you have seen already at home.
	 We will first briefly repeat the steps related to creating the laptop buyer utility template.
	 You want to buy a new laptop and have saved € 1200. Your first task preparing the negotiations with the seller is to adjust your preferences.
	 • Start the editor (double-click the negoeditor.jar file).
	 • Set, as a buyer, your utilities for the laptop domain, as follows:
	    • Follow the steps in Section 3 ("Profile Creation", p.8) in the Negotiation User Guide; as in the User Guide, make sure that you use the **laptop_domain.xml** and **laptop_empty_utility.xml** file available in negotiator/ templates/laptopdomain.
	    • Adjust the utilities and set the evaluation values and weights according to your preferences and budget.
	    • Save your utility space as **laptop_buyer_utility.xml** in the same directory (negotiator/templates/laptopdomain)

	• Start the negotiator simulator as discussed in section 4 ("Running Negotiations",p.12) in the User Guide. • Use the top "Browse" button and select the negotiator/templates/laptopdomain/ laptop_domain.xml file. The other fields will be filled in appropriately (assuming you saved the laptop_buyer_utility.xml as described in the previous paragraph). • Press "Start" The UIAgent interface will pop up after a few seconds, or immediately if you have the first turn in the negotiation. Negotiate against the BayesianAgent to familiarize yourself to some extent with the negotiation style of this agent. If you still have time, you may also want to start a new negotiation session and setup a session with the 'agents.UIAgent' for both parties selected, so that you can get a look at the preferences of both parties. To make sure you understand what's going on, try to answer the following questions for yourself: (1) Why does the utility value go to 0 for some bid settings? (2) Why does the opponent see a different utility for your bid than you saw when you adjusted your bid?

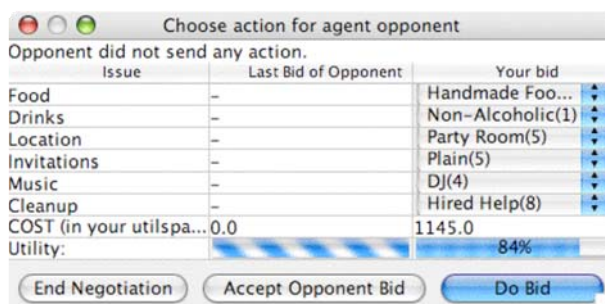|	
945	You are going to organize a party together with a friend. You have a budget of € 1200 and a list with options for the party has been compiled already. Additionally, an estimate of the cost associated with each of these options is available to you. Your friend and you are about to negotiate about it, in order to try and reach an agreement about how to organize the party. Read the information about the party domain, in the "Negotiation Profile Template" attached at the end of this document.

950
 	
section
 	
I
	• Start the editor
	• Use the "Load Domain" menu to open the negotiator/templates/partydomain /party_domain.xml file
	• Use the "Load Utility Space" menu to open the party_utility_ empty.xml file.
	• Edit the utility space as above, and set the evaluation values and weights according to your preferences and budget.
	• Save your utility space as **party_FL_utility.xml** in the same directory (negotiator/templates/partydomain), where FL is your first and last name (without spaces inbetween, all in lower case).
	• Copy the values with the weights on the attached Negotiation Profile Template. Keep your form as a copy, you will need it during negotiations later today. For each issue you must record and copy:
	  1. A number that indicates the utility value you associate with each option corresponding to that issue.
	  2. A single number that indicates the relative importance of that issue to you (its weight).
	• Mail the party_FL_utility.xml file that you created (where FL is your first+last name construct as above) to `ai@mmi.tudelft.nl`. Please make sure you include your name and student ID in this mail.

1015	Break
1030 section II	The coming 30 minutes you will negotiate with another student on the party domain, with both of your utility spaces as the basis for the negotiation. You may use the full 30 minutes but you may also finish sooner. • Find your negotiation partner listed in the table above. Find a spot to negotiate within the room not too close to any other pair of students. • Start negotiating. You may want to use a calculator to compute utilities if you like. Make sure you end the negotiation a little before 11:00, so that you still have time to record the final agreement to paper. • Fill in the form "Negotiation Agreement Template" attached at the end of this document, with the negotiation result that you agreed upon with your opponent. This form can be used to record the bid that is agreed upon by marking those issue values that are part of the agreement; please also record your names and student numbers. • If you have completed the negotiation, please indicate this by raising your hand. Someone will come and pick up your agreement form.
1100	Break

1115 section III	• Download the file utilities.zip from from Blackboard at IN4010TU ARTIFICIAL INTELLIGENCE (2007-2008 Q1) (6056-070801) > ASSIGNMENTS > NEGOTIATION SESSION. Extract the party_NN_utility.xml (where NN is the number associated with your name in Table 1) and save it in the negotiator/templates/partydomain directory. • Start the negotiator simulator as discussed in Section 4 ("Running Negotiations", p.12) of the User Guide. • Use the top "Browse" button and select the negotiator/templates/partydomain/party_domain.xml file. The other fields will be automatically filled in as in this picture: • Substitute the part labeled "FL" in the "Agent A utility space" field with your first and last name exactly the same as you entered it before (see Section I above). • Substitute the part labeled "NN" in the "Agent B utility space" field with the number associated with your name in Table 1. • DO NOT press "Start"; wait till you are instructed to do so.
1125	The coming 30 minutes you have time to negotiate against the computer. It is **not** allowed to restart the negotiation session. You may use the full 30 minutes (no more!) but may also finish earlier. If you do not finish within half an hour you will receive a score of 0. • Press "Start". The UIAgent interface will pop up after a few seconds, or immediately if you have the first turn in the negotiation. • Negotiate with the software agent and try to reach an agreement . Please note that the utility of the bid you agree on will partly determine your final grade. • When you are finished, please raise your hand. DO NOT close the negotiation environment! One of the assistents will copy your result from the screen and you're done.
1155	End of negotiation session.

Negotiation Profile Template

IN4010TU Artificial Intelligence Techniques

This document provides you with a template to create a preference profile for the party domain. The Table below exhibits the domain structure, i.e. the issues and the associated issue values. The issue values define the range of potential outcomes of a negotiated agreement in this domain. The Table also includes a description of each of these issue values and an associated cost.

An editor is available to facilitate you in the construction of your preference profile. You must use this editor since you are also required to save your profile digitally as an .xml file (See for instructions on using this editor the Negotiation User Guide). Among others, the editor will facilitate you by normalizing the weights automatically.

You are requested to complete the Table by performing two tasks:

    i.   Fill in real-numbered weights, one associated with each issue; *Make sure the weights sum up to one on the template*.

   ii.   Rank order the issue values *within each issue* in accordance with your own preferences by entering natural numbers > 0 – also called *evaluations* – associated with each issue value.

The natural numbers associated with issue values may be, for example, *1, 2, 3, 4*, but may also indicate strong preference for issue value 3, for example, by writing down *1, 1, 6, 2*; here 6 indicates strong preference for issue value 3 over the others. Please keep the following in mind.

• The preference profile that you create will be used to assess your perfor- mance during negotiation. It will be used in part to determine your grade. The better the outcome you achieve in a negotiation reflects your profile the higher your grade.

• Agreements reached in a negotiation about the party domain *may not exceed the budget of 1200*. Please take into consideration that this constraints means you should not assign the highest preference to a bid (i.e. evaluations to a set of issue values) that has a total cost that exceeds the available budget; such bids will end up having a utility of 0 since they violate the cost constraint. As a result, you will not be able to reach an agreement that yields maximum utility for you, even before you have be- gon to negotiate! The editor will not indicate this automatically, so you have to consider costs while entering your preferences yourself.

Good luck.

Category	Choice	Description	Cost	Weight	Utility
Food	Chips and Nuts	Buy bags of chips and party nuts for all guests.	100		
	Finger-food	Diced cheese, sliced sausage, deep fried stuff. More tasty than chips and nuts, but more expensive.	170		
	Handmade Food	Custom snacks, hours d'oeuvres etc. Less expansive than finger-food, but more work.	120		
	Catering	Outsource the food, if you will. The least work, the highest cost.	250		
Drinks	Non-Alcoholic	Soda's, ice water, etc.	75		
	Beer Only	More than enough beers for everybody. It has alcohol, but is more expensive.	300		
	Handmade Cocktails	Mix your own drinks. More work, but less expensive than a trainload of beer.	200		
	Catering	Let some company do the drinks. Least work, highest cost.	450		
Location	Party Tent	A tent on some field somewhere. Roomy, but outdoors.	200		
	Your Dorm	Give the party in your dormitory. It's home, but there is less room.	100		
	Party Room	Hire a standard party room. Enough room, no outdoor problems. It costs more, though.	400		
	Ballroom	The fanciest option. A beautifully decorated ballroom with everything you need.	600		
Invitations	Plain	Write the address on pieces of paper and hand those out.	25		
	Photo	Take a nice picture of something, or buy one in the store, and write on the back of that. More expensive, but prettier.	75		
	Custom, Handmade	Custom shape card. More work, a tad less expensive than the photo option.	50		
	Custom, Printed	Design the card, then let somebody else print it. You pay a lot, but do the least.	150		
Music	MP3	Plug some boxes into your computer and run off your MP3 collection. More work, the wiring costs money.	100		
	DJ	Hire a DJ to play off his MP3 collection. No work for you during the party, but more expensive.	250		
	Band	Hire a party band for live music. The most expensive, but it is live music.	350		
Cleanup	Water and Soap	This will take a lot of scrubbing. It is cheap, but by far the most work.	20		
	Specialized Materials	Specialized materials will help cleaning a lot, but it is more expensive.	60		
	Special Equipment	Rent a CleanMaster 3000 and see those stains disappear in no time. Yet less work, yet more money.	150		
	Hired Help	Hire somebody else to do your dirty work. No work, but pricey.	200		

Table 1: Choices for each category

Negotiation Agreement Template

The template below is provided to you to record the agreement you reach in the Human-Human negotiation round, if any. Please fill in the name of you and your fellow negotiator as well as your student numbers. At the end of the negotiation round this template needs to be handed in. Please indicate the agreement you reached by writing down a cross × next to each issue value you agreed on for each issue. Note that the agreement reached will partly determine your grade.

Good luck.

Name Negotiator 1:	Sign below for agreement
Student number:	

Name Negotiator 2:	Sign below for agreement
Student Number:	

Category	Choice	Description	Cost	Agreement
Food	Chips and Nuts	Buy bags of chips and party nuts for all guests.	100	
	Finger-food	Diced cheese, sliced sausage, deep fried stuff. More tasty than chips and nuts, but more expensive.	170	
	Handmade Food	Custom snacks, hours d'oeuvres etc. Less expensive than finger-food, but more work.	120	
	Catering	Outsource the food, if you will. The least work, the highest cost.	250	
Drinks	Non-Alcoholic	Soda's, ice water, etc.	75	
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	Your Dorm	Give the party in your dormitory. It's home, but there is less room.	100	
	Party Room	Hire a standard party room. Enough room, no outdoor problems. It costs more, though.	400	
	Ballroom	The fanciest option. A beautifully decorated ballroom with everything you need.	600	
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	Custom, Handmade	Custom shape card. More work, a tad less expensive than the photo option.	50	
	Custom, Printed	Design the card, then let somebody else print it. You pay a lot, but do the least.	150	
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	Specialized Materials	Specialized materials will help cleaning a lot, but it is more expensive.	60	
	Special Equipment	Rent a CleanMaster 3000 and see those stains disappear in no time. Yet less work, yet more money.	150	
	Hired Help	Hire somebody else to do your dirty work. No work, but pricey.	200	