CSIT 441 Artificial Intelligence
Semester Project (38% of your grade)
Project presentation (5%)

Objectives

1. Understand how to set up an AI solution to a problem.
2. Implement AI strategies to solve a simple problem.
3. Experiment and analyze the solution in terms of its success on several example inputs.
4. **FAILURE to TRY is FAILURE on this project. Failing to solve the AI problem you work on is NOT FAILURE for this project. Try something unusual and interesting to you – even if you only get part way done!**

Check Blackboard for all due dates for the semester project. These include the project proposal, the background presentation, the source code, the blog page, the project walkthrough, and the final presentation.

The instructor must approve the topic of your research project before starting extensive research. This topic is also used for the background presentation. Submitting this proposal is worth 1% of your grade.

The purpose of this assignment is to implement AI algorithms, and investigate their use. These projects may be used as demonstrations for departmental and campus recruiting events. Sample projects include (but are not limited to):

- Set up and program a robot to perform tasks. See me for a variety of sample tasks, including the vacuum-world problem.
- Work with the multi-touch table, using AI vision and/or machine learning algorithms to recognize objects placed on the table.
- Implement various AI search strategies to solve a game and analyze the strengths and weaknesses of the strategies for the chosen problem,
- Use adversarial search strategies to develop and implement a two-player game (where the computer may be one of the players),
- Implement and test machine learning strategies, such as the C4.5 Decision Tree Algorithm, the Apriori Association Rule-Mining algorithm, or the WEKA algorithms,

This project must be completed independently. Bonus points may be earned, depending on the documented complexity of the problem attempted. Each project will need to involve some programming, but you may choose the language.

Project Implementation (150 points. 22% of your final grade):
Submit via blackboard:

- your source code, with proper documentation
- installation and execution instructions (in a readme.txt file format)

Walthrough
Make an appointment to meet with the instructor to explain the project details, and be prepared to demonstrate as well as explain your code. Plan for a ½ hour appointment during dead week or the first three days of finals week. Walk Through (5%)

Final Project Presentation (35 points) 6%:

Class project presentations will take place during the scheduled final exam period. Your presentations are formal presentations with a demonstration of the project. Please allow 3-5 minutes for questions out of your 15 minute time slot.

Project professional blog (100 points, 10%) (with pictures and/or video):

I expect ***at least one entry a week for the last five weeks of the semester (up to and including dead week). I expect a final blog post during finals week***. These should be well written and explain the project and your progress. It should provide the background for your project and links or references for websites, articles, etc that were used. Screen shots or pictures would enhance the blog postings. Over the course of your posts, you should explain the algorithms you tried, the data structures used, the test data (and why it was chosen), and the experiments you conducted. Explain the results of your experiments (graphs and/or tables may be helpful here) and compare the efficiency and quality of the various algorithms that you implemented. Explain lessons learned and discuss future enhancements that should be made and future testing that should be performed. Then, provide an executable download, a link to a video demonstrating your project, or some way for the viewer to see your project in action.

See Tyler Adelung's project blog http://cs.unk.edu/~adelungtj/ or Daniel Russell's project blog http://cs.unk.edu/~russelldc/ as examples. If you need to have your web blog site set up, please let me know.

(As an alternative to the blog, you could write a 10-15 page analysis paper with scholarly references.)

University of Nebraska – Kearney

CSIT 441: Artificial Intelligence

Student Project Implementation Grading Form

Student Name: _____ Project Name: _____

Category		**Possible Points**	**Your Score**
"Completed program" that compiles and runs with no errors		15	
Complexity of the project		25	
Correct result and output		30	
Meet with instructor & demonstrated the project and explained the code		50	
Formatting and documentation (Each module needs purpose/description, variable identification, variables coming in, variables returning, preconditions, post conditions, and other information pertinent to the module's use.) The overall program needs header information, including the purpose of the program, author information, and the pseudocode.		10	
Proper implementation of **all** features specified in the program		20	
Totals		150	

Other comments:

CSIT 441 Final Project Presentation Evaluation

Presenter _____ Date _____

Topic _____ Time _____

Key: _____ = very good _____ = acceptable _____ = needs improvement

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CONTENT - ORGANIZATION

1. Introduction (1 points)

_____ a. attention arousal

_____ b. orientation & partition statement

2. Structure (2 points)

_____ a. soundly planned

_____b. clear transitions & internal summaries

_____c. effective development of the argument

3. Conclusions (1.5 points)

_____ a. adequate summary of discussion

_____ b. placement of discussion into a larger perspective

_____ c. appropriate sense of finality

4. Content (32 points)

_____ a. Explained project objectives (3)

_____ b. Explained methods (5)

_____ c. System Demonstration (15)

_____ d. Explained Results (5)

_____ e. Explained Future Enhancements (2)

_____ f. Explained Lessons Learned (2)

OVERALL EFFECT

_____ 1. Creative, Interesting, Informative (5 points)

_____ 2. Audience participation/interest (3 points)

DELIVERY

1. Style (2 points)

_____ a. poise & confidence

_____ b. awareness of audience, establishment of rapport

_____ c. eye contact

_____ d. enthusiasm

_____ 2. Voice (1 point)

3. Body (1 point)

_____ a. movement & gestures

_____ b. grooming

4. Language (1 point)

_____ a. Clear expression of ideas

_____ b. Correct grammar

_____ TOTAL POINTS out of 50

Comments:

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Project Blog Grading Criteria

Student Name: _____ Project Name: _____

	Possible Points	Your Score
1. Introduction & basic explanation of project goal	8	_____
2. Methods		
a. Description of algorithms & data structures	15	_____
b. Description of experiments & test data	15	_____
3. Explanation of the project's results & performance in the experiments.	15	_____
4. Suggested future enhancements	5	_____
5. Lessons learned & conclusions	5	_____
6. Blog Supplements		
a. References provided with an explanation of how the reference (website, paper, youtube video, book, etc) was used for the project	6	_____
7. Blog Characteristics		
a. Effective writing style	2	_____
b. Appropriate organization	2	_____
c. Number of posts	10	_____
d. Correct syntax and grammar	10	_____
e. Download/Visual demo of project	5	_____
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Total Points	100	_____