References

[1] Stuart Russell, Peter Norvig, "Artificial Intelligence: A Modern Approach", 3rd ed. Prentice Hall, 2009.

[2] Helen Yannakoudakis, "Automated assessment of English-learner writing", Technical Report Number 842, University of Cambridge, Computer Laboratory, October 2013

[3] Semire Dikli, "An Overview of Automated Scoring of Essays", The Journal of Technology, Learning, and Assessment Volume 5, Number 1, August 2006

[4] Salvatore Valenti, Francesca Neri and Alessandro Cucchiarelli, "An Overview of Current Research on Automated Essay Grading", Journal of Information Technology Education, Volume 2, 2003

[5] Felice Dell'Orletta, Martijn Wieling, Andrea Cimino, Giulia Venturi and Simonetta Montemagni, "Assessing the Readability of Sentences: Which Corpora and Features?", Proceedings of the Ninth Workshop on Innovative Use of NLP for Building Educational Applications, pages 163–173, Baltimore, Maryland USA, June 26, 2014, Association for Computational Linguistics

[6] Jill Burstein, Martin Chodorow and Claudia Leacock, "Automated Essay Evaluation: The Criterion Online Writing Service", AI Magazine Volume 25 Number 3 (2004), American Association for Artificial Intelligence

[7] Rachele De Felice, Stephen G. Pulman, "Automatic detection of preposition errors in learner writing", Oxford University Computing Laboratory, 19 March 2008

[8] Ryu Iida, Takenobu Tokunaga, "Building a Corpus of Manually Revised Texts from Discourse Perspective", Graduate School of Information Science and Engineering, Tokyo Institute of Technology

[9] Siddhartha Ghosh, "Online Automated Essay Grading System as a Web Based Learning (WBL) Tool in Engineering Education", Chapter 5, G. Narayanamma Institute of Technology and Science, India

[10] Elizabeth Salesky, Wade Shen "Exploiting Morphological, Grammatical, and Semantic Correlates for Improved Text Difficulty Assessment", Proceedings of the Ninth Workshop on Innovative Use of NLP for Building Educational Applications,

pages 155–162, Baltimore, Maryland USA, June 26, 2014. Association for Computational Linguistics

[11] Attali, Y. and Burstein, J. (2006). Automated essay scoring with e-Rater v.2.0. Journal of Technology, Learning, and Assessment, 4(3):1 – 30.

[12] Landauer, T. K., Laham, D., and Foltz, P. W. (2003). Automated scoring and annotation of essays with the Intelligent Essay Assessor. In Shermis, M. and Burstein, J. C., editors, Automated essay scoring: A cross-disciplinary perspective, pages 87 - 112.

[13] Briscoe, T., Medlock, B., and Andersen, . E. (2010). Automated assessment of ESOL free text examinations. Technical Report UCAM-CL-TR-790, University of Cambridge, Computer Laboratory, http://www.cl.cam.ac.uk/techreports/UCAM-CL-TR-790.pdf.

[14] Rudner, L. and Liang, T. (2002). Automated essay scoring using Bayes' theorem. The Journal of Technology, Learning and Assessment, 1(2):3 - 21.

[15] Higgins, D., Burstein, J., and Attali, Y. (2006). Identifying off-topic student essays without topic-specific training data. Natural Language Engineering, 12(2):145 - 159.

[16] Lonsdale, D. and Strong-Krause, D. (2003). Automated rating of ESL essays. In Proceedings of the HLT-NAACL 2003 workshop on Building Educational Applications Using Natural Language Processing, pages 61 - 67. ACL.

[17] Nwana, H. (1996), "Software Agents: An Overview", The Knowledge Engineering Review, 11 (3), 205-244.

[18] Nwana, H & Azarmi, N. (eds) (1997), "Software Agent and Soft Computing: towards enhancing machine intelligence", Lecture Notes in Artificial Intelligence 1198, Springer-Verlag, New York.

[19] Hyacinth S. Nwana and Divine T. Ndumu, "A Perspective on Software Agents Research".

[20] Nwana, H. S. (1990), "Intelligent Tutoring Systems: An Overview", Artificial Intelligence Review 4 (4).

[21] Nwana, H. S., Ndumu, D. T., Lee, L. C. & Collis, J. C. (1999), "ZEUS: A Toolkit for Building Distributed Multi-Agent Systems", Applied Artificial Intelligence Journal 13 (1/2), 129-185.

[22] Nwana, H.S., Lee, L. Jennings, N.R. (1996), "Coordination in software agent systems", BT Technology Journal, 14(4) (1996) 79–88.

[23] Nwana. H. S. & Ndumu, D. T. (1999), (eds)., Special Issue of Applied Artificial Intelligence Journal 13 (1/2).

[24] B. Chandrasekaran and John R. Josephson, Ohio State University, V. Richard Benjamins, University of Amsterdam, "What Are Ontologies, and Why Do We Need Them?", IEEE INTELLIGENT SYSTEMS, JANUARY/FEBRUARY 1999

[25] N. Guarino and R. Poli, "The Role of Ontology in the Information Technology," Int'l J. Human-Computer Studies, Vol. 43, Nos. 5/6, Nov.-Dec. 1995, pp. 623–965.

[26] G. Van Heijst, A.T. Schreiber, and B.J. Wielinga, "Using Explicit Ontologies in KBS Development," Int'l J. Human-Computer Studies, Vol. 46, Nos. 2/3, Feb.-Mar. 1997, pp. 183–292.

[27] M. Uschold and A. Tate, "Putting Ontologies to Use," Knowledge Eng. Rev., Vol. 13, No. 1, Mar. 1998, pp. 1–3.

Appendix A:

Software Code

A.1 Introduction

Software code used to implement the Agent-based Solution for Improving Abstracts is provided in a CD along with this thesis and the description of the source code is presented here.

A.2 Coordination Agent

Software code used to implement the coordination agent of the Agent-based Solution for Improving Abstracts is presented here.

A.3 Parser Agent

Software code used to implement the parser agent of the Agent-based Solution for Improving Abstracts is presented here.

A.4 Problem Agent

Software code used to implement the problem agent of the Agent-based Solution for Improving Abstracts is presented here.

A.5 Solution Agent

Software code used to implement the solution agent of the Agent-based Solution for Improving Abstracts is presented here.

A.6 Conclusion Agent

Software code used to implement the conclusion agent of the Agent-based Solution for Improving Abstracts is presented here.

A.7 Content Agent

Software code used to implement the content agent of the Agent-based Solution for Improving Abstracts is presented here.

A.8   Synonym Agent

Software code used to implement the synonym agent of the Agent-based Solution for Improving Abstracts is presented here.

A.9   Improvement Agent

Software code used to implement the improvement agent of the Agent-based Solution for Improving Abstracts is presented here.

A.10   Restructure Agent

Software code used to implement the restructure agent of the Agent-based Solution for Improving Abstracts is presented here.

A.11   Abstract Concept

Software code used to implement the abstract concept of the Agent-based Solution for Improving Abstracts is presented here.

A.12   Message Concept

Software code used to implement the message concept of the Agent-based Solution for Improving Abstracts is presented here.

A.13   Parser Ontology

Software code used to implement the parser ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.14   Problem Ontology

Software code used to implement the problem ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.15   Solution Ontology

Software code used to implement the solution ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.16   Conclusion Ontology

Software code used to implement the conclusion ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.17   Content Ontology

Software code used to implement the content ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.18   Synonym Ontology

Software code used to implement the synonym ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.19   Improvement Ontology

Software code used to implement the improvement ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.20   Restructure Ontology

Software code used to implement the restructure ontology of the Agent-based Solution for Improving Abstracts is presented here.

A.21   Abstract GUI

Software code used to implement the graphical user interface of the Agent-based Solution for Improving Abstracts is presented here.

A.22   Text Area Output Stream

Software code used to implement the redirecting the output stream to text area of the Agent-based Solution for Improving Abstracts is presented here.

User Interfaces of the Proposed System

B.1   Introduction

Screen shots of the user interfaces of the proposed system, Agent-based Solution for Improving Abstracts are presented here.

B.2   Main User Interface of ASIA

Screen shot of the Main User Interface of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
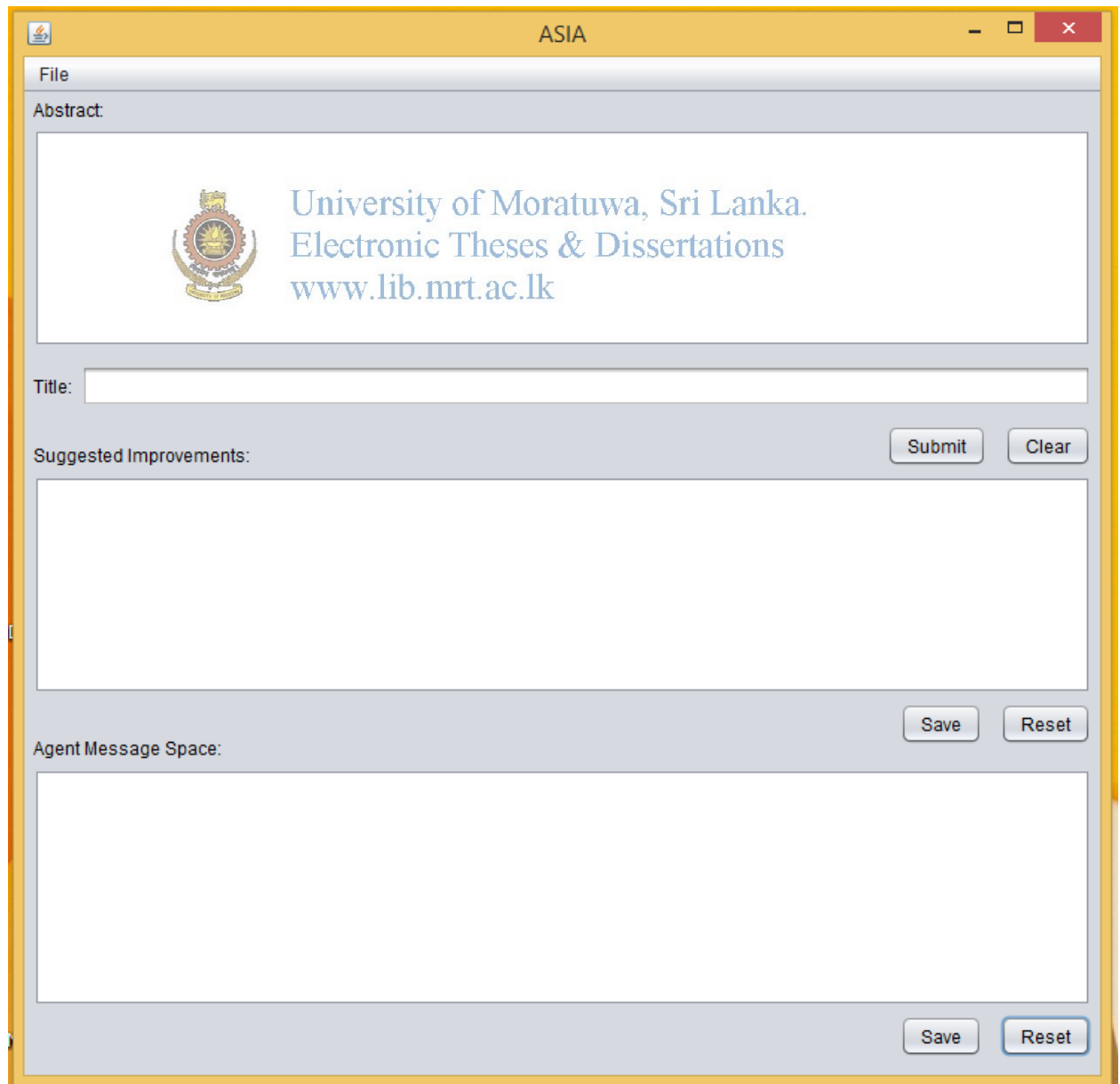
Figure B.1: Main User Interface of ASIA
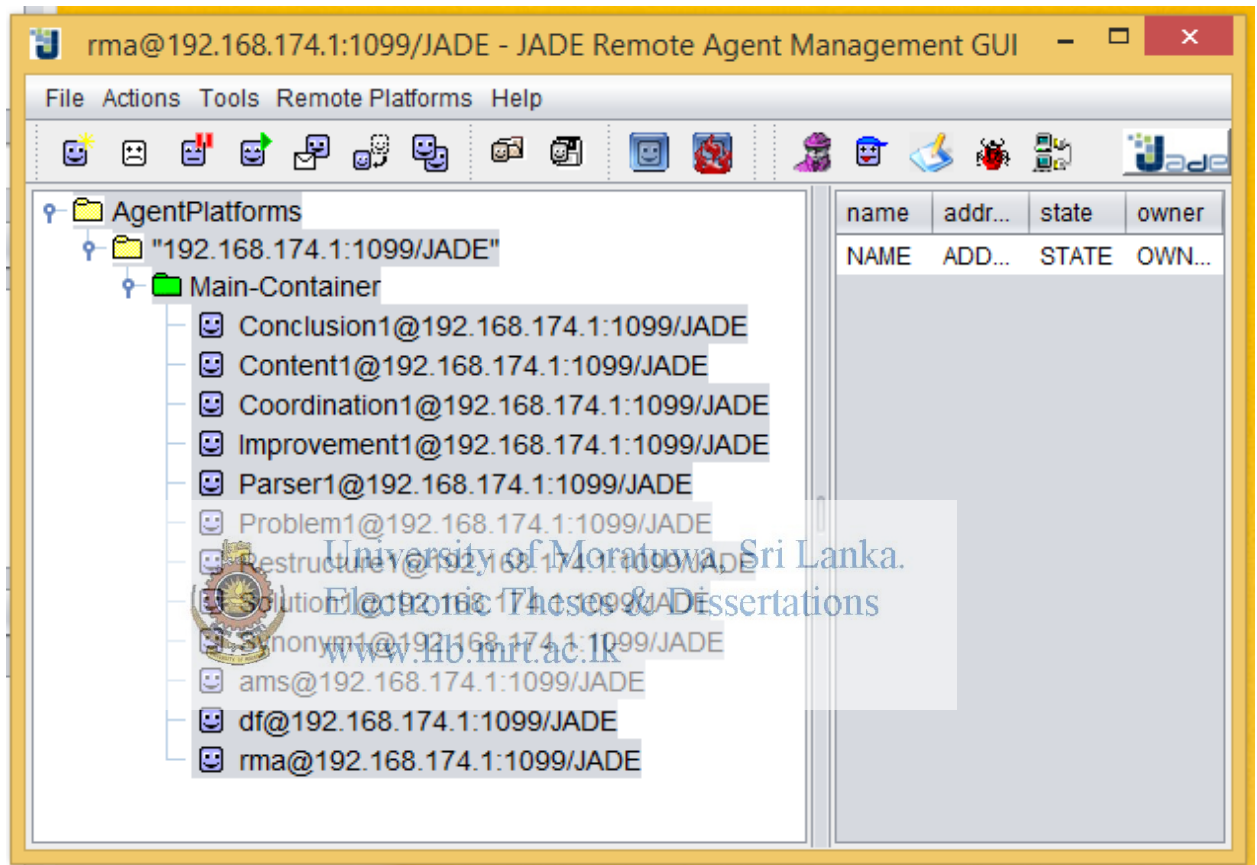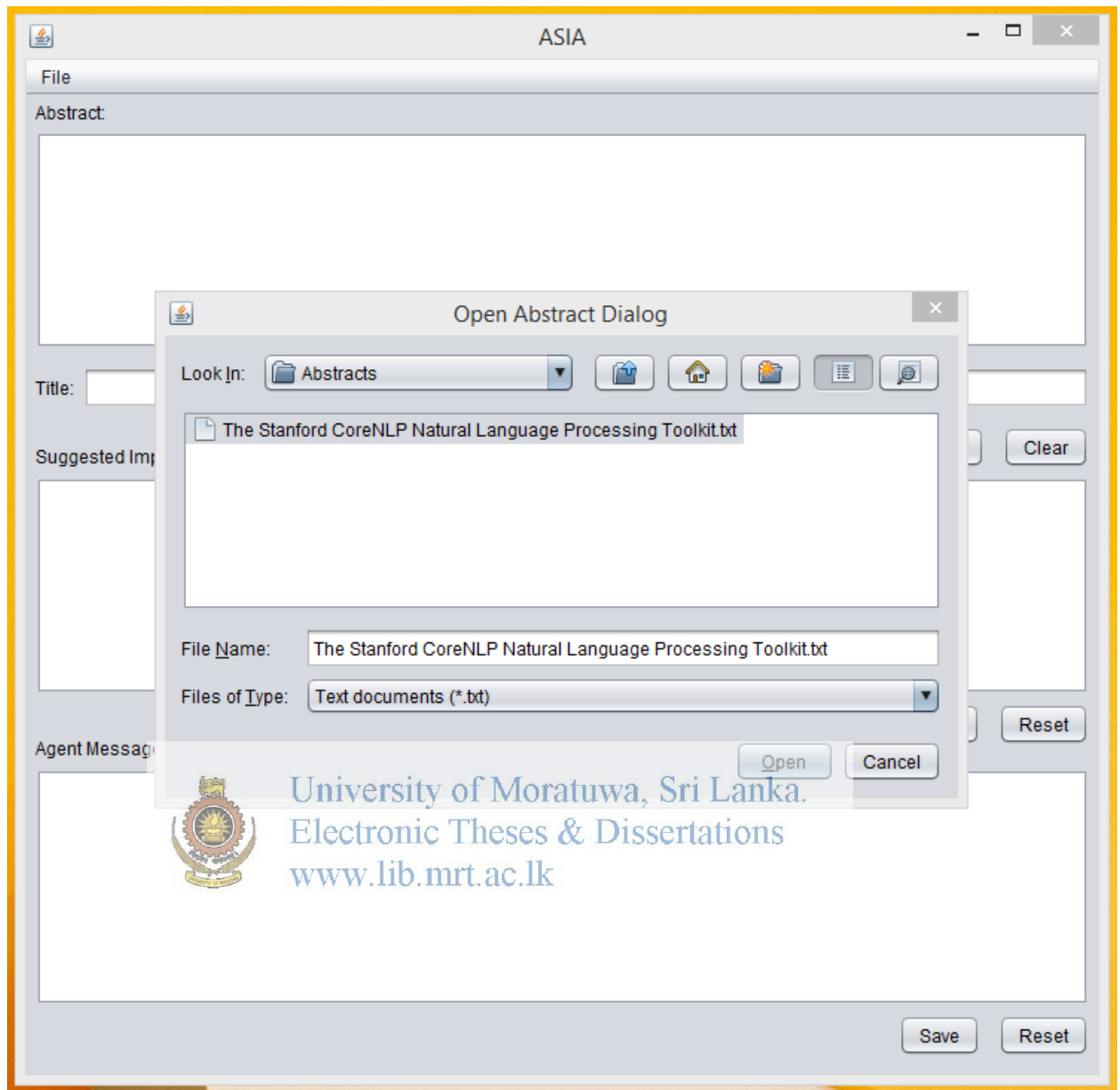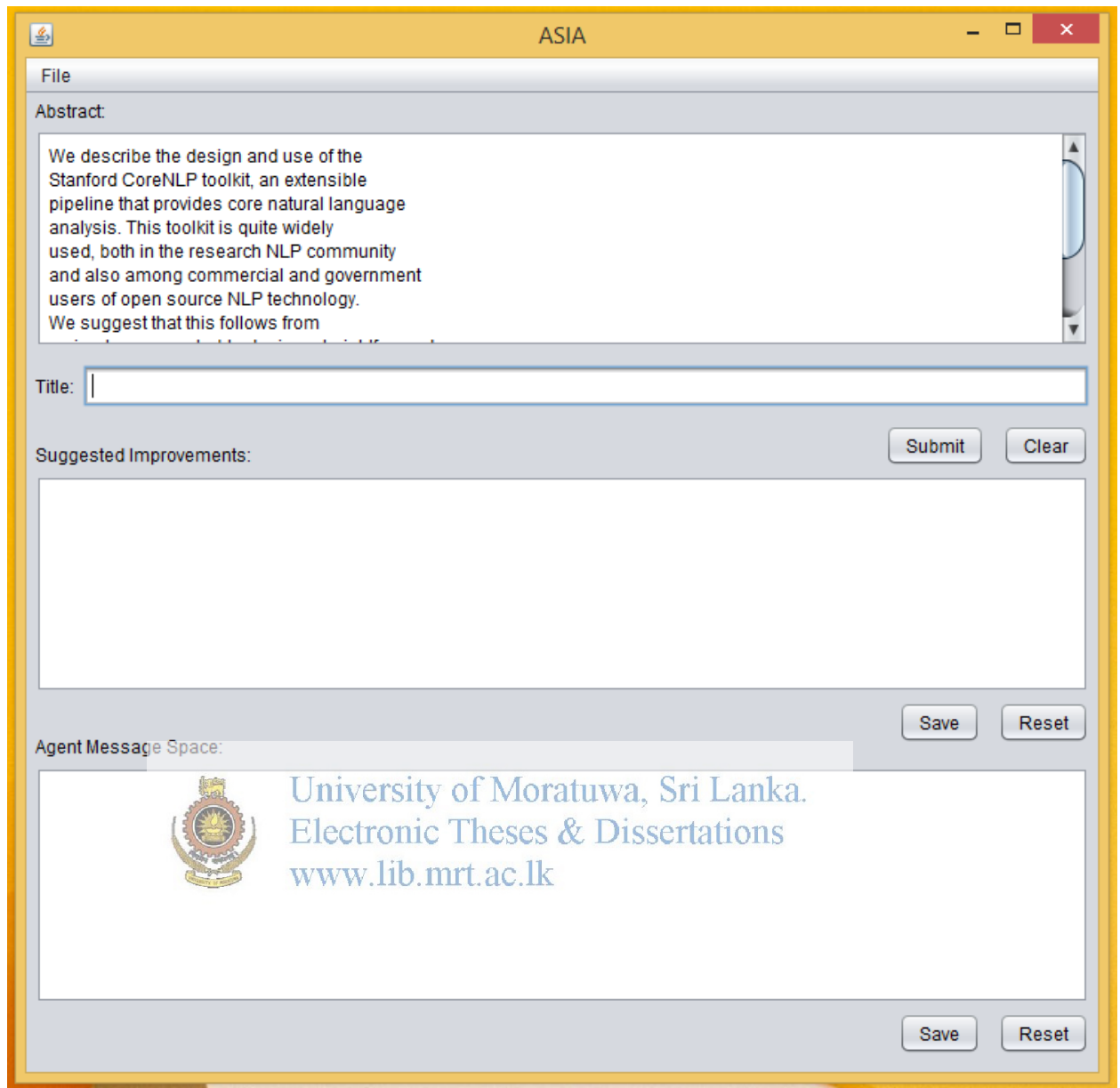
B.3 JADE Remote Agent Management GUI

Screen shot of the user interface, JADE Remote Agent Management GUI of the proposed system, Agent-based Solution for Improving Abstracts is presented here.

Figure B.2: JADE Remote Agent Management GUI

B.4 Open Abstract Dialog GUI

Screen shot of the user interface, Open Abstract Dialog of the proposed system, Agent-based Solution for Improving Abstracts is presented here.

Figure B.3: Open Abstract Dialog GUI

B.5   Abstract Open in the Text Area

Screen shot of the user interface; Abstract Open in the Text Area of the proposed system, Agent-based Solution for Improving Abstracts is presented here.

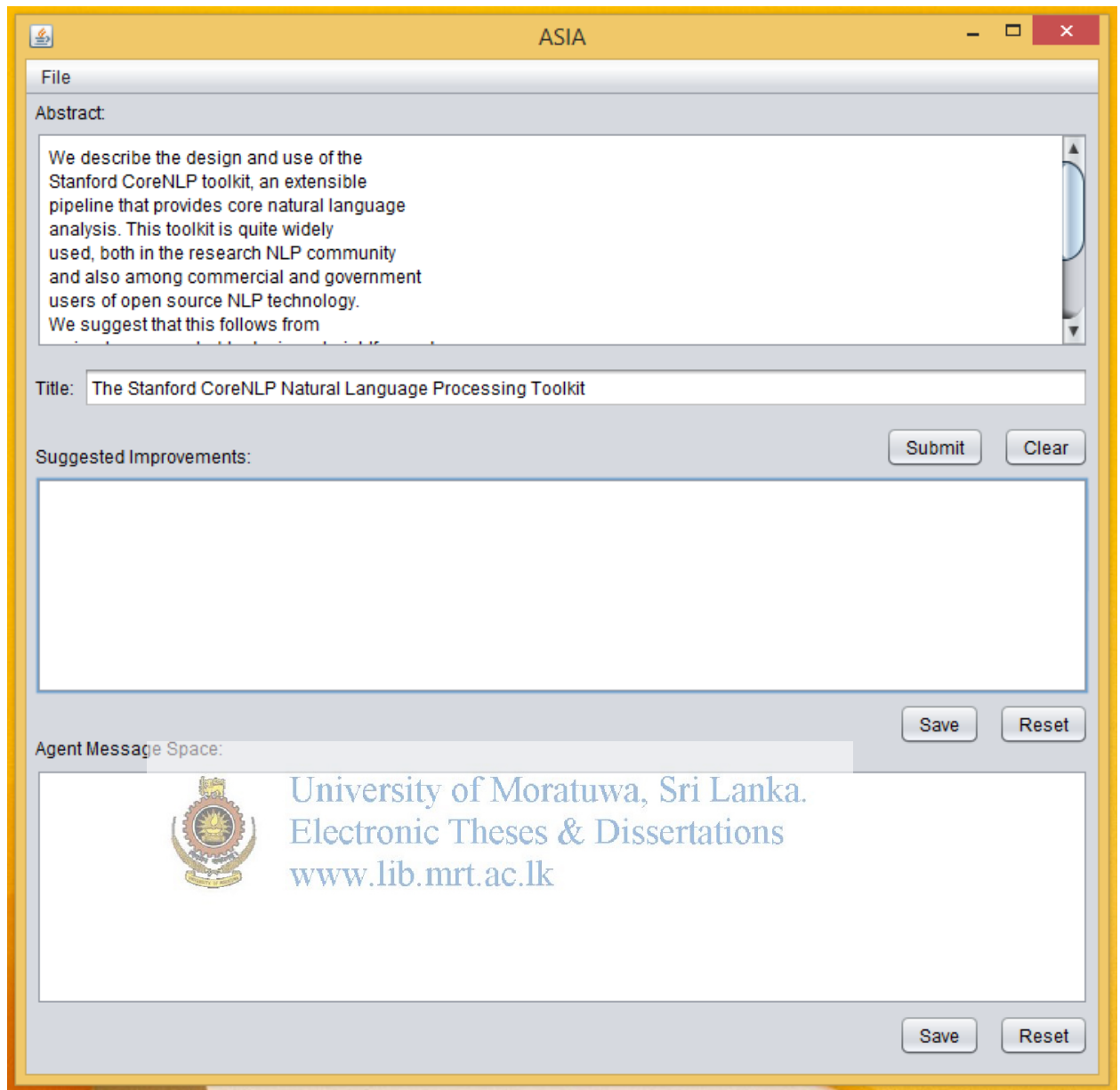Figure B.4: Abstract Open in the Text Area

B.6   Enter the Title of the Abstract in the Text Area

Screen shot of the user interface; enter the Title of the Abstract in the Text Area of the proposed system, Agent-based Solution for Improving Abstracts is presented here.

Figure B.5: Enter the Title of the Abstract in the Text Area

B.7   Submit the Abstract to the System

Screen shot of the user interface; Submit the Abstract to the System of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
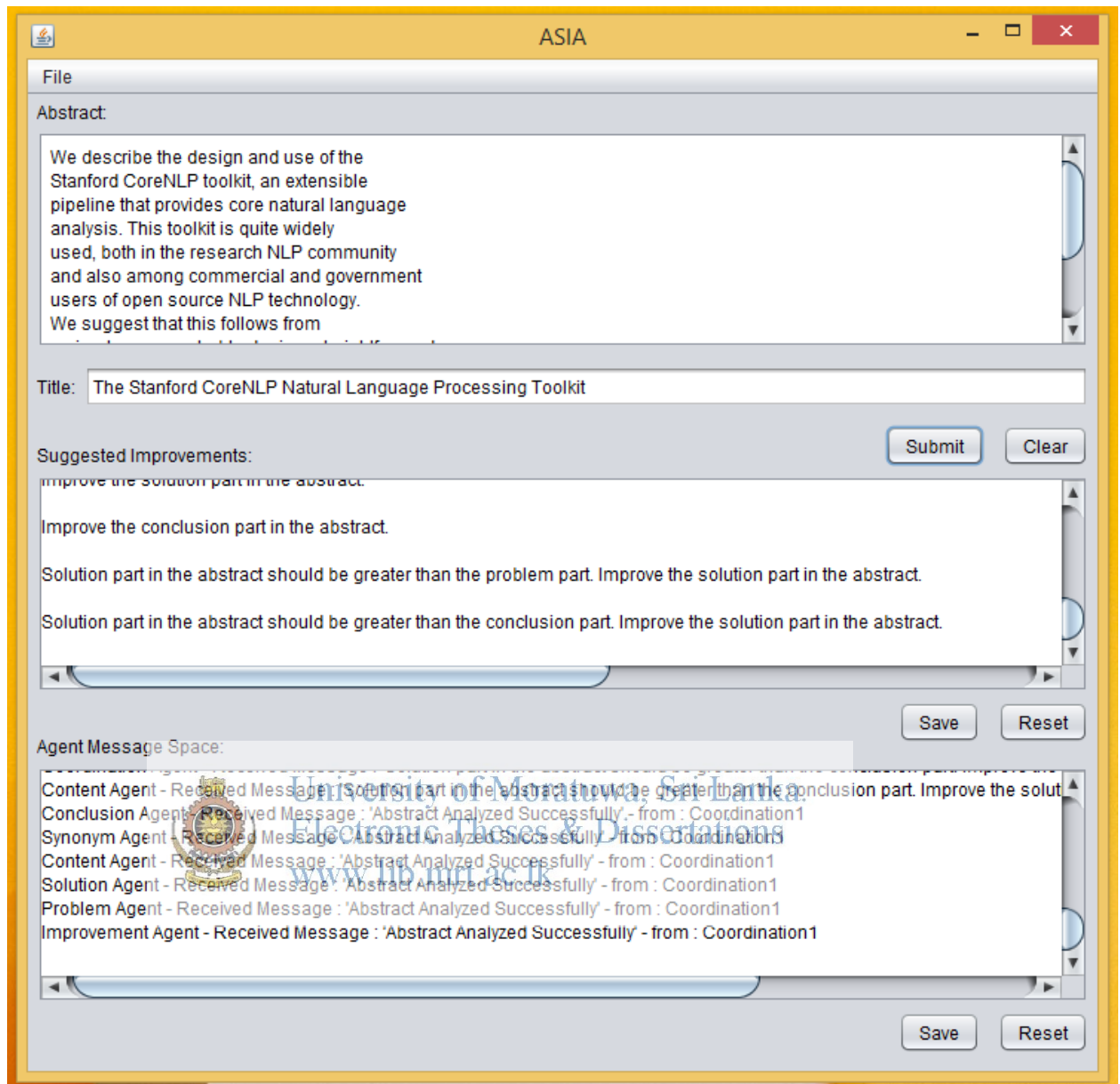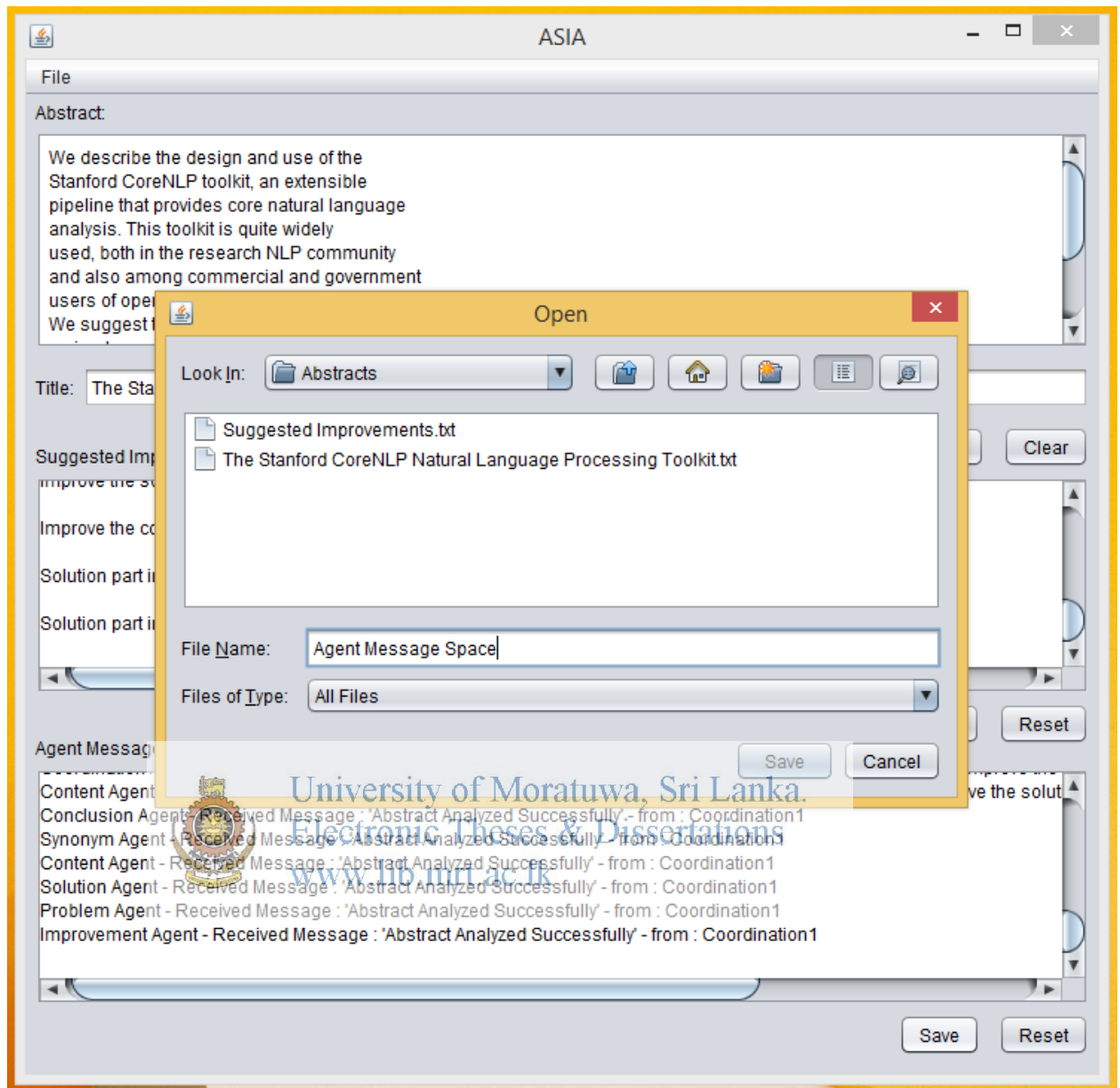
Figure B.6: Submit the Abstract to the System

B.8 Save the Suggested Improvements

Screen shot of the user interface; Save the Suggested Improvements of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
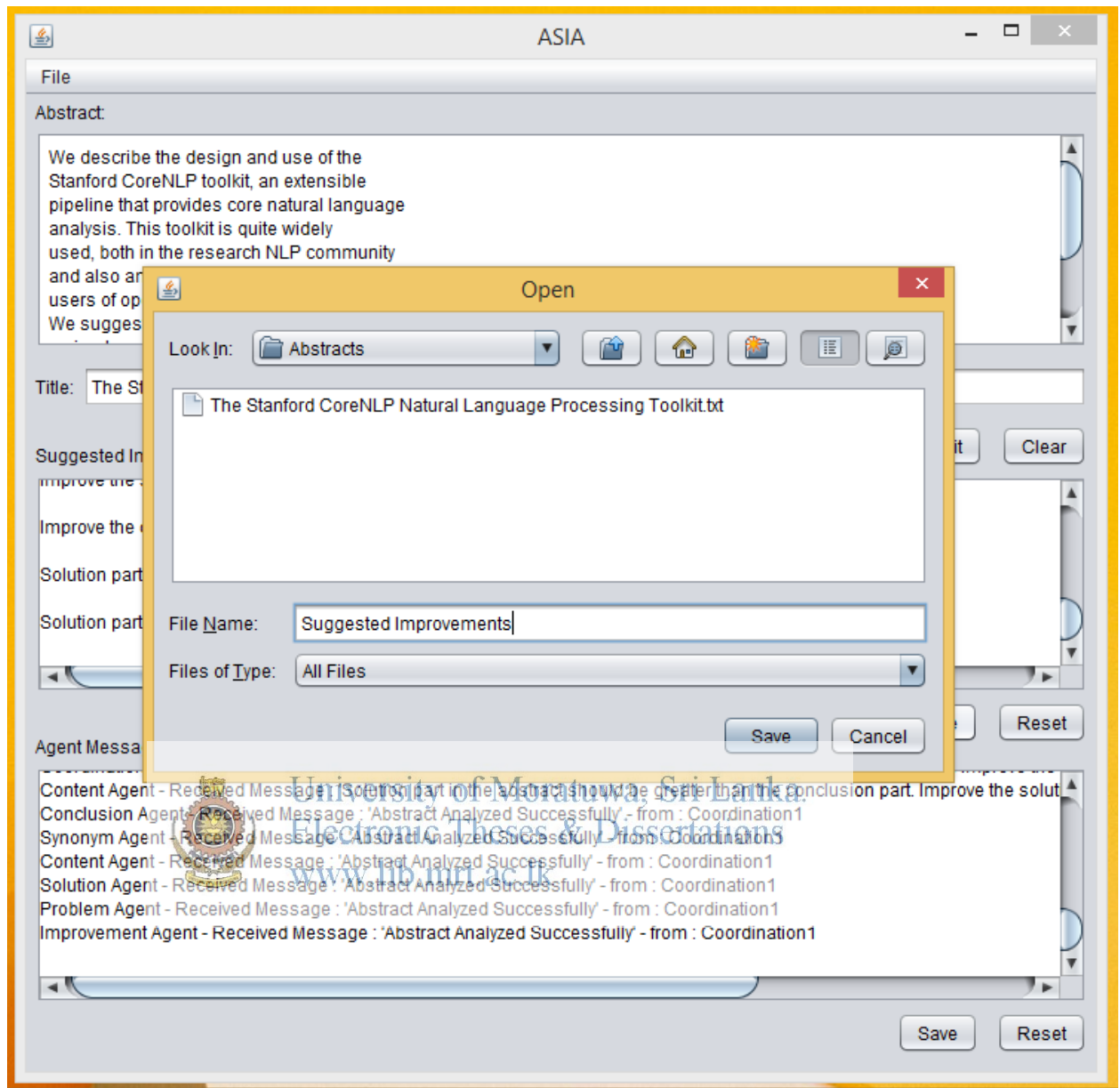
Figure B.7: Save the Suggested Improvements

B.9 Save the Agent Message Space

Screen shot of the user interface; Save the Agent Message Space of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
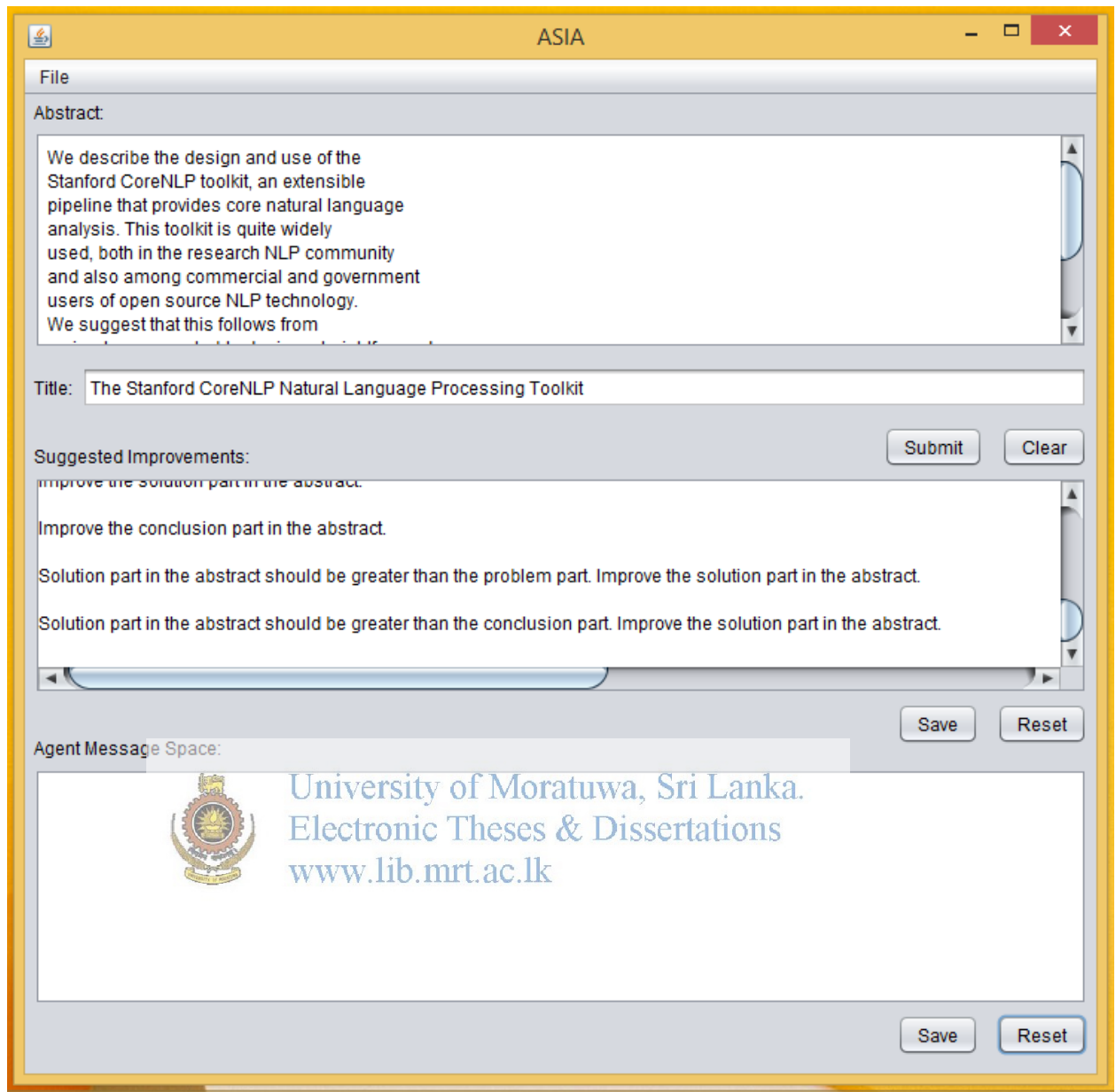
Figure B.8: Save the Agent Message Space

B.10 Clear the Agent Message Space

Screen shot of the user interface; Clear the Agent Message Space of the proposed system, Agent-based Solution for Improving Abstracts is presented here.

Figure B.9: Clear the Agent Message Space

B.11 Clear the Suggested Improvements

Screen shot of the user interface; Clear the Suggested Improvements of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
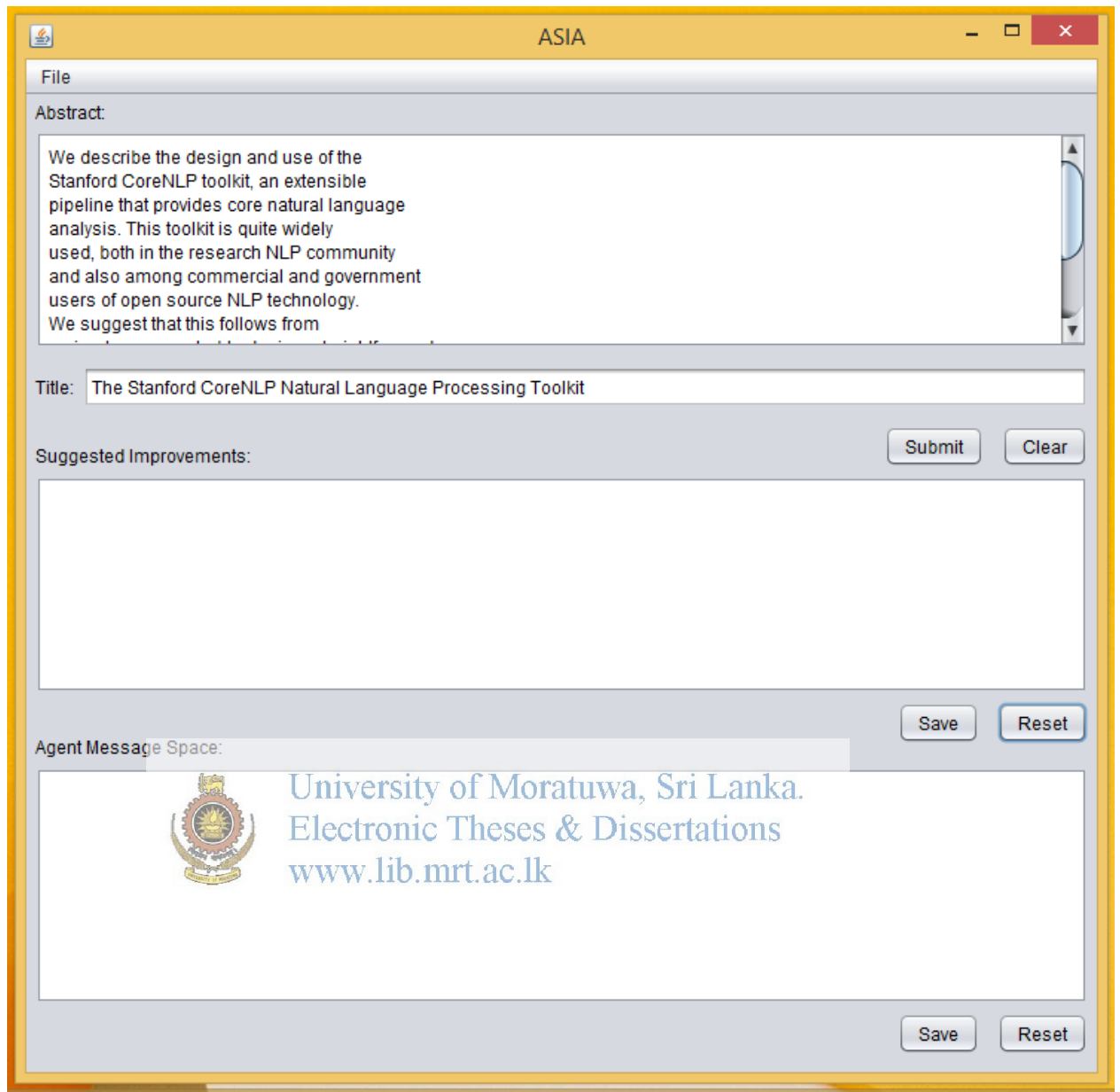
Figure B.10: Clear the Suggested Improvements

B.12 Clear the Abstract and Title

Screen shot of the user interface Clear the Abstract and Title of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
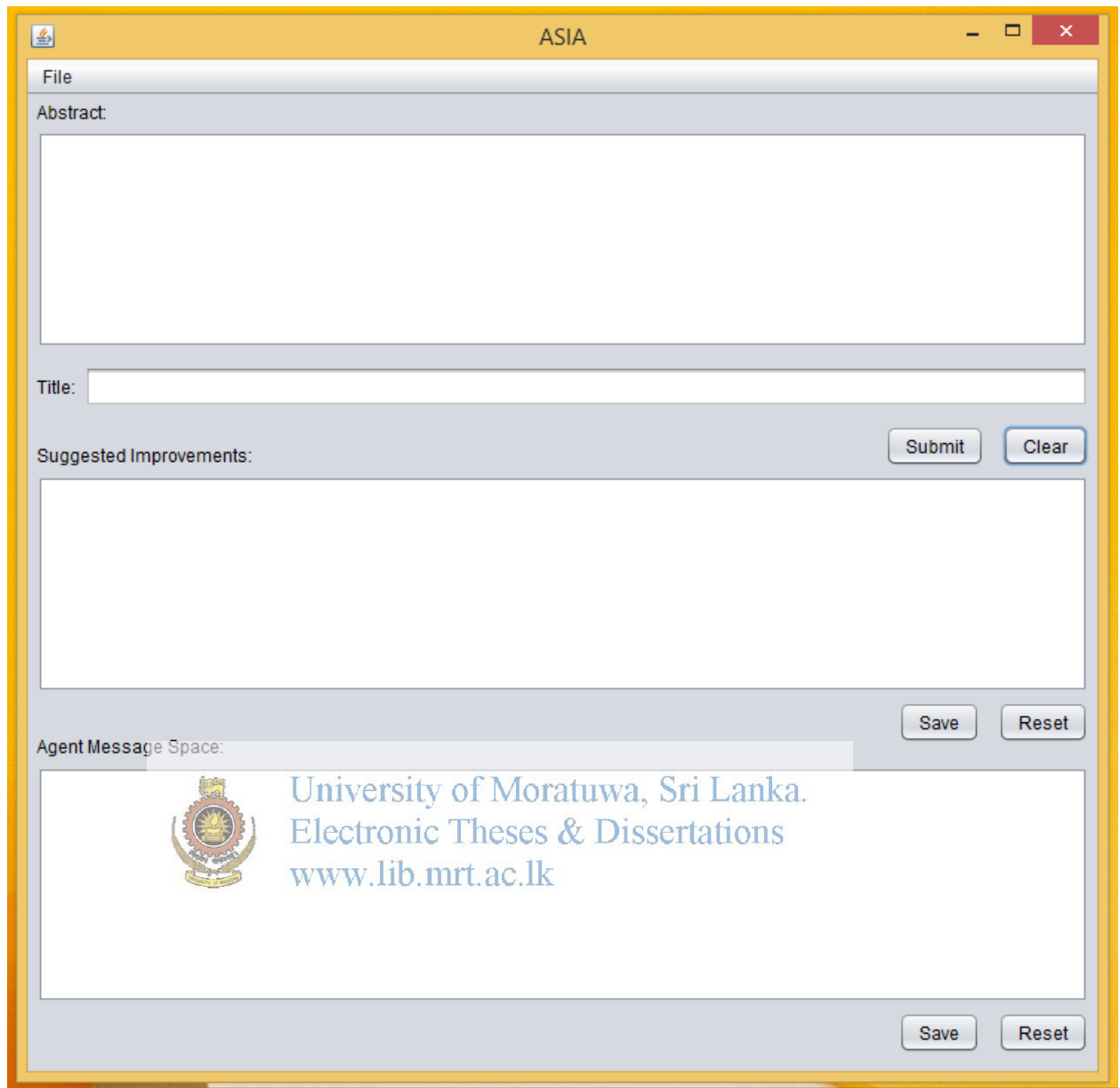
Figure B.11: Clear the Abstract and Title

B.13   Project Workspace in NetBeans IDE

Screen shot of the Project Workspace in NetBeans IDE of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
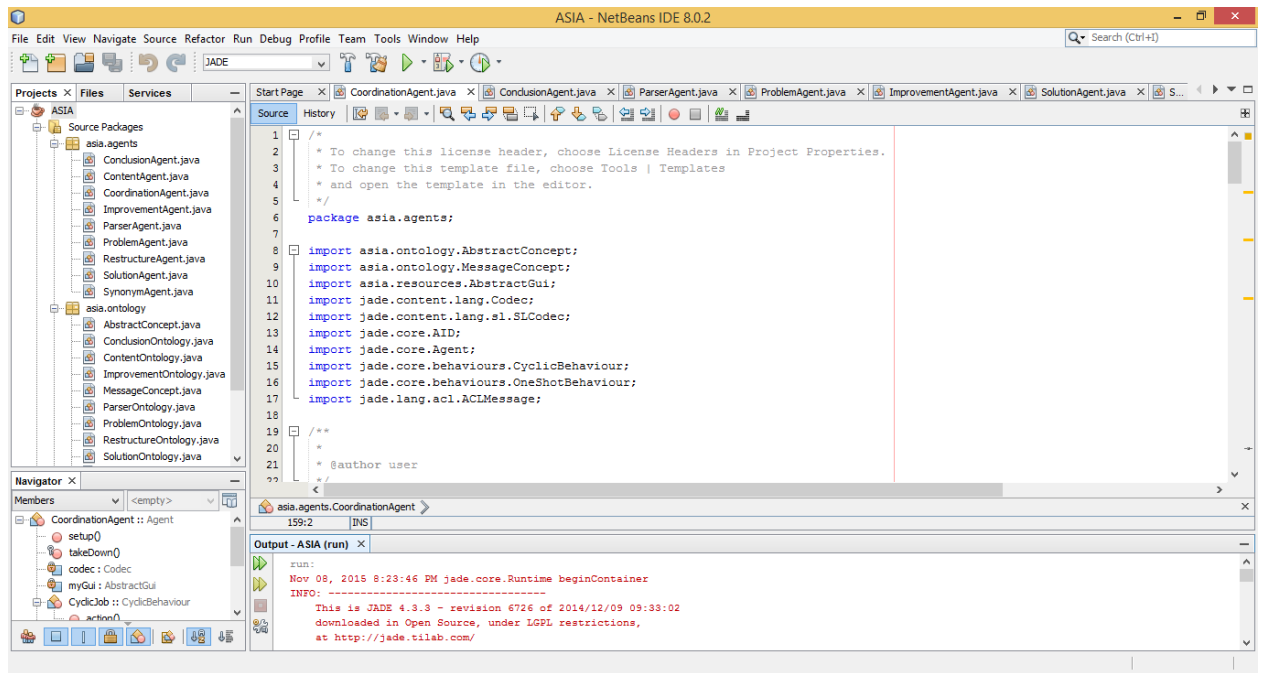
Figure B.12: Project Workspace in NetBeans IDE

B.14 Project Run Output in NetBeans IDE

Screen shot of the Project Run Output in NetBeans IDE of the proposed system, Agent-based Solution for Improving Abstracts is presented here.
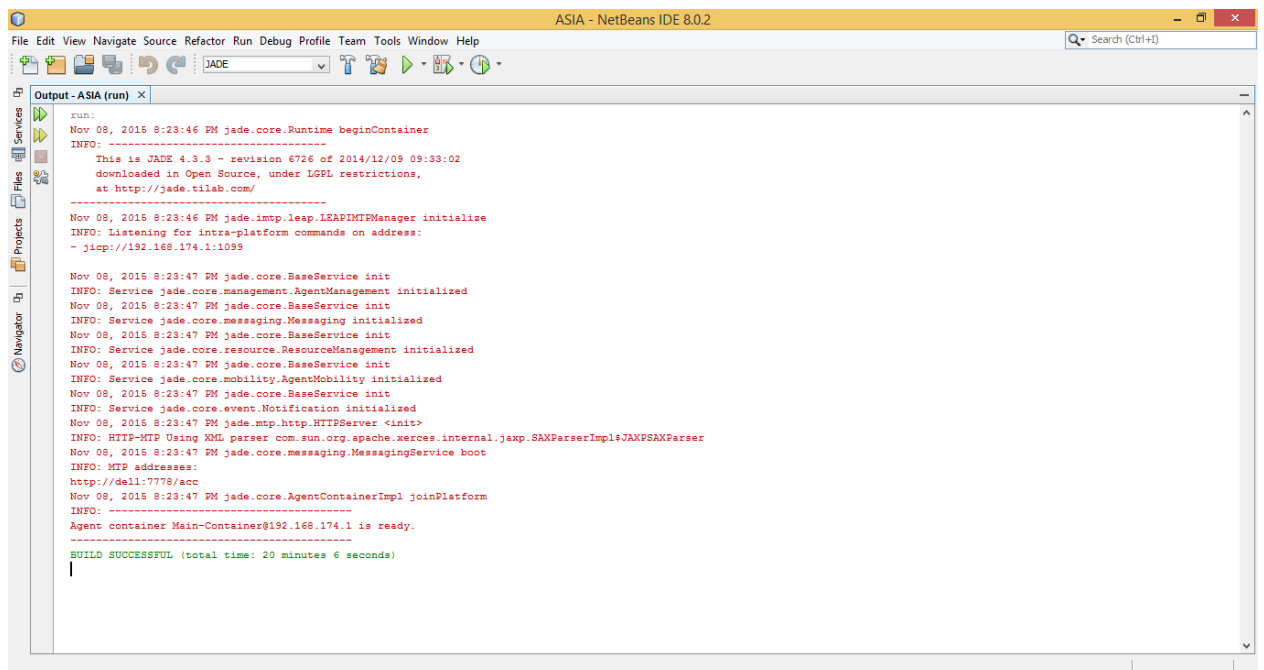

Figure B.13: Project Run Output in NetBeans IDE

114