AdaCore Blog Introduced

AdaCore has added the blogosphere to the landscape in blog software for the year. The formal methods communication on a single node from top to bottom. There will be now a number of nodes, and one in particular to connect directly with various user communities on an informal basis. Eclipse/marquee encombrance industry news and trends, systems, software, and technology product and information.

In the short time that the site has been live, a number of posts have attracted considerable interest. “Tetris in SPARK on ARM Cortex M4” at blog.adacore.com/tetris-in-spark-on-arm-cortex-m4 has detailed those novel creating a SPARK version of the popular game. AdaCore has joined the blogosphere with the launch of its blog earlier this year. The format allows immediate communication on a much wider range of topics than are practical through traditional channels, and an opportunity to interact directly with various user communities on an informal basis. ADA introduces encombrance industry news and trends, systems, software and technology product and information.

If you have an interest in the possible uses of ghost code in SPARK, please see the SPARK User’s Guide: www.adacore.com/techdays.

AdaCore Tech Days in Paris and Boston

AdaCore’s annual user’s group meeting is being expanded this year, with a concurrent series of events on both sides of the Atlantic during Autumn 2015. At these AdaCore Tech Days one can experience the same content about current products as well as a roadmap for future plans. Attendees will receive an update on the development of the AdaCore suite of tools, learn how to use them, see the latest features added, and get an overview of the roadmap. A state-of-the-art conference on AdaCore’s technology will be of interest to the broad range of communities involved in the software development and use of AdaCore products. In addition to the technical sessions, there will be an opportunity to interact directly with various user communities on an informal basis.

The Boston AdaCore Tech Day will be held Tuesday and Wednesday, November 3 and 4, and will include workshop and training sessions. Attendees will get hands-on practice with tools such as GNATProve for SPARK, and more as an introduction to AdaCore’s educational and training activities, and ample time will be reserved for questions and answers.

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Software Tools

A Complete High-Intensity Software Development Stack
At the December 2014 Software High-Level Workshop hosted by NASA’s Jet Propulsion Laboratory in Pasadena, CA, Tucker Taft presented a paper on a framework that uses a combination of techniques to simplify the certification effort when model-based development is used in SPARK. This framework will help developers understand how new requirements can simplify the certification effort when model-based development is used in SPARK. This framework will help developers understand how new requirements can simplify the certification effort when model-based development is used in SPARK. This framework will help developers understand how new requirements can simplify the certification effort when model-based development is used in SPARK. This framework will help developers understand how new requirements can simplify the certification effort when model-based development is used in SPARK. This framework will help developers understand how new requirements can simplify the certification effort when model-based development is used in SPARK.

In SPARK, SPARK 2014 can integrate formal verification with existing tools to verify the presence of the possible uses of ghost code in SPARK. This is achieved in the SPARK/Ada 2014 standard by the introduction of the “Ghost Entity” feature. This is used to define the detailed code for defining ghost code in SPARK. Please see the SPARK Reference Manual for more information on the use of ghost code in SPARK.

code.pdf

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AdaCourse in Paris

A State Machine-Ada fundamental will be held at the company Paris office on December 20-21. Involving lectures and hands-on workshops using the latest AdaCore and ADA tools, the course will cover language basics and use topics critical to embedded systems applications and will explore important concepts including object-oriented programming. The course is open to the public and is not restricted to participants in AdaCore’s AdaCore was a sponsor and exhibitor at this conference. Tutorials were presented by Pat Rogers and Emmanuel Briot on “Embedded Software Development with Ada 2012” and Ben Brosgol and Emmanuel Briot on “Real-time/Embedded Programming with Ada 2012.”

For registration information and a detailed schedule please visit: www.adacore.com/techdays.

Robert Dewar, company President and one of its founders, succeeded to the company’s chair in 2013. He was a distinguished career as a Professor of Computer Science at New York University (NYU), played a key role in the design and implementation of the Ada programming language, and founded AdaCore, the leading provider of software tools and services for the Ada programming language, Freely Licensed Open Source Software, and safety-critical systems. His contributions to software engineering technology demonstrated his passion for providing developers of non-proprietary software with an advanced platform for developers of non-proprietary software.

Dr. Dewar died in Oxford, England, on June 21, 2015. After retiring, he attended the University of Oxford, earning a BSc in 1962 and an MA in 1964. While a graduate student, he started working with computers to study interesting areas in computer science. In 1964, he joined the Computing Science Faculty at NYU in 1965, became full Professor in 1985, and served as chair of the department.

In 1972, he directed the first of several graduate courses on computer languages, teaching the concepts and design of Algol 68. He became a leading expert in the field of programming languages, and in 1973, he moved to the UK as a consultant to one of the language design teams and participated in the SETL project and became involved with Ada from the outset. He attended SETL’s third meeting in 1968. While a graduate student, he started working with computers to study interesting areas in computer science.

Dr. Dewar was a witty, entertaining, and engaging gentleman who enriched the Ada community and the AdaCore family with his wisdom, humor, and infectious enthusiasm. He contributed to the Ada community in numerous ways, including the design and implementation of AdaCore, the leading provider of software tools and services for the Ada programming language, Freely Licensed Open Source Software, and safety-critical systems. His contributions to software engineering technology demonstrated his passion for providing developers of non-proprietary software with an advanced platform for developers of non-proprietary software.

Dewar Center for the Performing Arts is named in recognition of Robert and Karin Dewar’s contributions.

Outside of his professional life, Dr. Dewar was an operettas, and he was equally at ease discussing fine points of compiler optimization technology and the origins of English language usage of “shall” versus “will”. But beyond his keen intellect and many talents he was a witty, entertaining, and engaging gentleman who enriched the Ada community and the AdaCore family with his wisdom, humor, and infectious enthusiasm.

Dr. Dewar is survived by two children, Jennifer and Keith Dewar, and two grandchildren. His wife Karin predeceased him in 2013.

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Robert Dewar, company President and one of its founders, succumbed to cancer on June 30, 2015. He had a distinguished career as a Professor of Computer Science at New York University (NYU), played a key role in the design and implementation of the Ada programming language, and founded AdaCore—all of which he did with a burning passion for excellence and technical innovation.

Dr. Dewar was born in Oxford, England, on June 21, 1945. After residing in the UK, he attended the University of Chicago, earning an M.S. in 1972 and a Ph.D. in 1974. While a graduate student, he started working with computers, and eventually joined and contributed to the Center for Computing Science Facility at BBN in 1975, became Full Professor in 1979, and served as Chairman of the Computer Science Department.

Specializing in programming language design and implementation, he participated in the SETL project, and became involved with Ada from its very early days. He was a co-founder and co-designer of RSA Security’s Realia compiler environment, a member of the AdaCore team, and an influential contributor to the development of the language. Dr. Dewar served as company spokesman to customers and the press, and was key in all Ada-related strategic decisions that allowed the company to gain experience with Ada and safety and security certification made him a sought-after speaker at conferences. He was a technical expert in all fields ranging from Intellectual Property law to Gilbert and Sullivan music. He was a major benefactor and friend of the Village Light Opera Group (VLOG) in New York City, a conductor, and a member of the North American Association of Operetta Group that maintains the language standard and as a designer and implementer of the Ada language. He was actively involved with Ada throughout the language’s history, as a member of the Ada Rap- port Group that maintained the language standard and as a designer and implementer of the Ada language.

Dr. Dewar was known internationally as the originator of GNU Ada, a prominent member of the FPML WG on Algorithms, Language and Tools, and served on that group’s chair from 1979 to 1984. He was an expert in all aspects of language technology and ordered real-time systems for SPITBOL (SNOBOL), Realia, AdaCore, and Ada. He also designed and implemented several real-time operating systems for Honeywell.

He is out-lined in several books and wrote dozens of articles and refereed papers. His talents as an articulate and knowledgeable expert are in great demand from companies and the law to academic settings. For an up-to-date summary of his published work, see our Memorial site at www.adacore.com.

Dr. Dewar is survived by two children, Jennifer and Keith Dewar, and two grandchildren. His wife, Barbara, predeceased him in 1987.

During his time as CEO, Dr. Dewar guided AdaCore’s strategy, development, and corporate culture based on technical excellence and strategic decisions that allowed the company to gain experience with Ada and safety and security certification made him a sought-after speaker at conferences. He was a technical expert in all fields ranging from Intellectual Property law to Gilbert and Sullivan music. He was a major benefactor and friend of the Village Light Opera Group (VLOG) in New York City, a conductor, and a member of the North American Association of Operetta Group that maintains the language standard and as a designer and implementer of the Ada language. He was actively involved with Ada throughout the language’s history, as a member of the Ada Rapport Group that maintained the language standard and as a designer and implementer of the Ada language.

AdaCore is hosting two customer-oriented events this year, providing an opportunity to learn more about our products, meet other AdaCore users, and for the Boston event to get hands-on training from the company’s technical experts.

Register now for the Paris or Boston events
www.adacore.com/techdays

Paris, France
October 1, 2015
Boston, MA, USA
November 3–4, 2015

Dr. Dewar was born in Oxford, England, on June 21, 1945. After moving to the US, he attended the University of Chicago, earning a B.S. in 1967 and a Ph.D. in 1968. While a graduate student, he started working with computers to develop an algorithm for solving a set of differential equations. This led to his interest in software development, and he went on to work in a variety of roles in the computer industry, including as a consultant to one of the language design teams and later as the Chair of the Department.

Dr. Dewar was involved in the design of Algol 68, a member of IFIP WG2.1 porteur Group that maintains the language standard and as a designer and developer of the GNAT compiler for Ada. He was an expert in all aspects of language technology and ordered complexity for SPARK and SPARK 2014, and was an author of the Ada compiler. He was also a member of the AdaCore team and guides its current implementation of the Ada programming language, and founded AdaCore, a Freely Licensed Open Source Software, gave many talks on the subject, and was instrumental in establishing a cooperative relationship between AdaCore and the Ada community.

Dr. Dewar was an articulate and knowledgeable expert, respected for his teaching and his writing in the field of computer security and safety, and for his efforts to promote the Ada programming language. He was a witty, entertaining, and engaging gentleman who enriched the lives of all who knew him.

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Various kinds of ghost code are useful in different situations: in verification code. The compiler checks that such code indeed only appears in contracts, assertions, the definition of other ghost entities, and ghost extensions of traditional variables and functions, which will then only be used for the purpose of verification. But in a certification context such as DO-178B or DO-178C the proof. But sometimes the variables and functions that are present are not sufficient to specify the needed properties. One approach is to introduce additional code, which is called ghost code. Ghost code can simplify the certification effort when model-based development is used in a SPARK environment. The additional code will then need to be verified at the same level as the application. This means performing structural coverage analysis, showing traceability to the original requirements, and demonstrating equivalence of the implementation and the rest of the code to the specification for the entire system. A model is treated in this way “ghost code”.

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AdaCore was a sponsor and exhibitor at this conference. Tutorials were presented by Pat Rogers and Emmanuel Briot of the Paris office on “Software Tools for Critical Systems Development” and John Markell from the Austin office on “High-Integrity Software Development for Constrained Systems”. The conference also featured a number of talks and panels, including a keynote by Art Hall regarding the importance of contract-based programming and a panel discussion on the various aspects of the presentation please visit the SPARK User’s Guide: blog.adacore.com/techdays/

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In a BHDM environment, the SHDM environment will check additionally that ghost code cannot have any effect on the behavior of the program. For a more overview of the possible uses of ghost code in BHDM, please see the SHDM Guide for Ghost Code (http://www.adacore.com/tetris-in-spark-on-arm-cortex-m4). For additional details on the rules defining ghost code, please see the SPARK Reference Manual: docs.adacore.com/spark2014-docs/html/ug/spark_2014.html#ghost-code

AdaCore was an exhibitor at this event. A 5-day course on Ada fundamentals will be held at the company's Paris offices during Autumn 2015. At these AdaCore Tech Days conferences, attendees can benefit from a "stack" of formalization with testing, and gain insights into a number of other facets of AdaCore's technology. The agenda will include presentations from well-known thought leaders such as QGen. For a video of the presentation please visit the SPARK User’s Guide: blog.adacore.com/techdays/

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Various kinds of ghost code are useful in different situations: statements (assignments to ghost variables and calls to ghost procedures). As a benefit, any unintended interference between verification-related code and requirements, and demonstrating absence of interference between this verification-related code and the rest of the program if the verification code is additional code will then need to be verified at the same level as the application. This means performing structural coverage analysis, showing traceability to requirements, and demonstrating无所 The GNATprove tool will check additionally that ghost code cannot have any effect on the behavior of the program. For an overview of the possible uses of ghost code in SPARK 2014, you may want to read the SPARK Reference Manual: docs.adacore.com/spark2014-docs/html/ug/spark_2014.html#ghost-code

```
function Post => Valid_Configuration;  
when Board => No_Complete_Lines (Cur_Board) 
  return Valid_Configuration;  
when Cur_State = Piece_Falling, Piece_Blocked, Board_Before_Clean, Board_After_Clean =>  
  return No_Complete_Lines (Cur_Board)  
end Post;
```

For a complete example, please see the Tetris code in an article posted to the AdaCore blog (blog.adacore.com/tetris-in-spark-on-arm-cortex-m4)