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Contents

Quarterly News Digest

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Contents

[Messages without Subject:/Newsgroups: are replies from the same thread. Messages may have been edited for minor proofreading fixes. Quotations are trimmed where deemed too broad. Sender's signatures are omitted as a general rule. —arm]

Preface by the News Editor

Dear Reader,

This number is packed full with works from the last Ada-Europe conference and so the News section is slim and focused on announcements. Our regular contents will pick up where they left in the next number.

Even so, there are a few news items of note: There is a new kid on the block of Ada websites, fully community-driven and intended to ease the onboarding of Ada newcomers [1]. Will it stand the test of time? Let us hope so.

And, on the front of the final arrival of Ada 2022, an exhaustive overview of its new features has been posted at the Ada Auth website [2]; great stuff for those of us eager for the next iteration of the language.

[1] "Yet another Ada website", in Ada-related Resources.

[2] "Ada 2022 Overview", in Ada-related Resources.

Sincerely,
Alejandro R. Mosteo.

Ada-related Events

SIGAda Awards Nominations

*From: Tucker Taft
    <tucker.taft@gmail.com>
Subject: SIGAda Awards Nominations --
    Due Sept. 20, 2022*
*Date: Tue, 13 Sep 2022 123800 -0700
Newsgroups:comp.lang.ada*

[Past call, for the record. Stay tuned for the winner! —arm]

Dear Members of the Ada Community:

We welcome your nominations for the 2022 Robert Dewar Award for Outstanding Ada Community Contributions and the 2022 ACM SIGAda Distinguished Service Award.

We hope this message finds you and your family safe and healthy. The SIGAda meeting in 2022 will be a HILT workshop of the 37th IEEEACM International Conference on Automated Software Engineering, ASE'2022. The workshop will be held on October 14th 2022. See ASE'2022 for details on the venue and registration.

This year's award winners will be announced as part of the SIGAda Workshop.

Award nominations are due on September 20th.

The ACM SIGAda Awards recognize individuals, teams, and organizations that have made outstanding contributions to the Ada community and to SIGAda. The two categories of awards are

(1) Robert Dewar Award for Outstanding Ada Community Contributions
    -- For broad, lasting contributions to Ada technology & usage.

(2) ACM SIGAda Distinguished Service Award
    -- For exceptional contributions to SIGAda activities & products.

If there are individuals or teams who you feel have made contributions that satisfy these criteria, please consider nominating them. You may nominate a person or a team of people for either or both awards, and as many people as you think worthy.

Please visit the SIGAda Awards page http://www.sigada.org/exec/awards/awards.html
and peruse the names of past winners. This may help you think about the measure of accomplishment that is appropriate. You may be aware of people who have made substantial contributions that have not yet been acknowledged. Nominate them. Consider what you believe to be the best developments in the Ada community or SIGAda in the last year; the last 5 years; since Ada's inception. Who was responsible? Nominate them.

Please note that anyone who has received either of the two awards remains eligible for the other. Perhaps there is an outstanding SIGAda volunteer who has won our Distinguished Service Award and who has also made important contributions to the advance of Ada technology, or vice versa. Nominate him or her!

The nomination form is available on the SIGAda Awards page: http://www.sigada.org/exec/awards/awards.html

Submit your nomination as an e-mail or e-mail attachment to
sigada-awards-comm@acm.org
From your nominations, the recipients of the awards are determined by a poll of previous award winners.

Call our attention to the people who are most deserving, by nominating them. And please nominate by September 20th!

Your participation in the nominations process will help maintain the prestige and honor of these awards.

Thank you,

Drew Hamilton
Chair ACM SIGAda Awards Committee
ACM SIGAda Past Chair

Drew Hamilton, Ph.D. '96
Professor of Computer Science & Engineering
Director, Texas A&M Center for Cybersecurity

ACM SIGAda HILT'22

*From: Tucker Taft
    <tucker.taft@gmail.com>
Subject: ACM SIGAda HILT'22 Workshop
    on Supporting Rigorous SW
    Development -- Oct 14, 2022
Date: Fri, 16 Sep 2022 122628 -0700
Newsgroups: comp.lang.ada*

The seventh ACM workshop on High Integrity Language Technology (ACM HILT 2022) is being held on October 14, 2022 in Detroit, MI in conjunction with the 2022 Automated Software Engineering conference (ASE'22), sponsored by SIGAda. This year's HILT theme is Language and Tool Support for

Rigorous Software Development. We have 9 presentations plus two keynotes related to this theme. Our keynote speakers are K. Rustan M. Leino, the creator of the Dafny verifiable language and the Boogie system supporting major industrial uses of formal methods, and Niko Matsakis, one of the original members of the Rust design team, talking about a-mir-formality, a more formal model of Rust. For more information see

https://conf.researchr.org/track/ase-2022/ase-2022-workshop-hilt-22

#formalmethods #softwareengineering #ada #rust #spark #dafny #ACM #ASE

Ada-related Resources

[Delta counts are from July 18th to November 13th. —arm]

Ada on Social Media

From: Alejandro R. Mosteo
*   <amosteo@unizar.es>*
Subject: Ada on Social Media
Date: 13 Nov 2022 1127 CET
To: Ada User Journal readership

Ada groups on various social media

- Reddit: 8_200 (+122) members   [2]
- LinkedIn: 3_400 (+72) members   [1]
- Stack Overflow: 2_273 (+35)
  questions   [3]
- Telegram: 153 (+10) users   [6]
- Gitter: 140 (+17) people   [5]
- Libera.Chat: 77 (+2) concurrent
  users   [4]
- Ada-lang.io: 50 (new) users   [8]
- Twitter: 37 (+7) tweeters   [7]
          85 (+10) unique tweets   [7]

[1] https://www.linkedin.com/groups/114211

[2] http://www.reddit.comrada

[3] http://stackoverflow.com/questions/tagged/ada

[4] https://netsplit.de/channels/details.php?room=%23ada&net=Libera.Chat

[5] https://gitter.im/ada-lang

[6] https://t.me/ada_lang

[7] http://bit.ly/adalang-twitter

[8] https://forum.ada-lang.io/u

Repositories of Open Source Software

From: Alejandro R. Mosteo
*   <amosteo@unizar.es>*
Subject: Repositories of Open Source
*   software*
Date: 13 Nov 2022 1128 CET
To: Ada User Journal readership

Rosetta Code: 919 (+4) examples   [1]

           39 (=) developers   [2]

GitHub: 763* (=) developers
       [3]

Alire: 309 (+49) crates   [6]

Sourceforge: 238 (-6) projects   [4]

Open Hub: 214 (=) projects   [5]

Codelabs: 53 (=) repositories   [8]

Bitbucket: 31 (-56**) repositories   [7]

AdaForge: 8 (=) repositories   [9]

*This number is unreliable due to GitHub search limitations.

**This large drop may be related to the extinction of Mercurial repositories, see https://bitbucket.org/blog/sunsetting-mercurial-support-in-bitbucket.

[1] http://rosettacode.org/wiki/Category:Ada

[2] http://rosettacode.org/wiki/Category:Ada_User

[3] https://github.com/search?q=language%3AAda&type=Users

[4] https://sourceforge.net/directory/language:ada/

[5] https://www.openhub.net/tagsnames=ada

[6] https://alire.ada.dev/crates.html

[7] https://bitbucket.org/repo/all?name=ada&language=ada

[8] https://git.codelabs.ch/a=project_index

[9] http://forge.ada-ru.org/adaforge

Language Popularity Rankings

From: Alejandro R. Mosteo
*   <amosteo@unizar.es>*
Subject: Ada in language popularity
*   rankings*
Date: 13 Nov 2022 1128 +0100
To Ada User Journal readership

[Positive ranking changes mean to go up in the ranking. —arm]

- TIOBE Index: 27 (+3) 0.48%
  (+0.1%)   [1]
- PYPL Index: 17 (=) 0.81% (-0.05%)   [2]
- IEEE Spectrum (general): 35 (-4)
  Score 1.16   [3]
- IEEE Spectrum (jobs): 33 (new)
  Score 0.79   [3]
- IEEE Spectrum (trending): 32 (new)
  Score 3.95   [3]

The Spectrum ranking has been revamped, no longer using the same categories and rating methodology. Thus, historic trends are omitted for this issue except for the default category.

[1] https://www.tiobe.com/tiobe-index

[2] http://pypl.github.io/PYPL.html

[3] https://spectrum.ieee.org/top-programming-languages/

Yet Another Ada Website?

From: Maxim Reznik
*   <reznikmm@gmail.com>*
Subject: yet another Ada web site
Date: Thu, 25 Aug 2022 030129 -0700
Newsgroups: comp.lang.ada

I wonder if the Ada community needs yet another web site?

My idea is here:

https://www.reddit.com/r/ada/comments/wx9zp1/yet_another_ada_web_site/

From: Paul Rubin
*   <no.email@nospam.invalid>*
Date: Fri, 26 Aug 2022 115814 -0700

>I wonder if the Ada community needs yet another web site

Adahome.com is sort of like that, but it is run by some company and hasn't been updated in forever. Maybe what you want is a wiki (like forthfreak.net used to be), but you'd have to do a lot of work getting it initially populated, before it became interesting enough to attract more contributors. It's very easy to suggest work for other people to do, but they all have their own projects already.

I don't have much trouble finding any information that I want about Ada, e.g. with web searches. The challenge is in digesting and using the information, not in finding it. I don't see the proposed new web site as being much help. More helpful would be a systematic effort to reproduce or at least supply Ada bindings for the main toolsets that exist for other languages, to target popular microcontrollers, etc.

From: Rene <rehartmann@t-online.de>
Date: Sat, 27 Aug 2022 111209 +0200

Maybe a web forum would be a good idea, because many people nowadays see Usenet Newsgroups: as an outdated thing. So the fact that the community mostly relies on comp.lang.ada may turn them off. (I Don't want to discuss whether Usenet is actually outdated or not, but I guess many people feel this way)

From: Nasser M. Abbasi nma@12000.org
Date: Sat, 27 Aug 2022 045317 -0500

Some are starting to use discord for such things. For example, the main Julia forum is at discord

https://discourse.julialang.org/t/julialang-official-discord-server/45499

From: Simon Wright
*   <simon@pushface.org>*
Date: Sun, 28 Aug 2022 082148 +0100

Would be better than Telegram or Gitter - at any rate for actual discussions.

From: Dmitry A. Kazakov
*   <mailbox@dmitry-kazakov.de>*
Date: Sun, 28 Aug 2022 095047 +0200

> Some are starting to use discord for
  such things.

Indeed. It is quite uncomfortable I must say from my experience. (I participate there because I maintain Ada Julia bindings)

P.S. They just killed Firefox support keeping it listed as a supported browser...

P.P.S. Clearly, how anybody could implement a discussion board without making it dependent on petabytes of browser-specific scripts. Right (-))

From: Maxim Reznik
*   <reznikmm@gmail.com>*
Date: Fri, 16 Sep 2022 082540 -0700

I'm happy to announce a new Ada website

https://ada-lang.io

Thank people who make it real!

I'm asking the community to send their updates and make it even better.

Here is the Paul Jarrett's original message:

> Hi folks, @onox and me have been
  working on something for a few weeks,
  and we need your help. We've been
  building an open source, Ada
  community site to share with everyone.
  The intent is an open source community
  hub that will persist for a long time.
  There's a Github organization set up for
  people to contribute to and my intent is
  to hand off the domain to some existing
  Ada group.

> Right now, I've migrated some of my
  old programming with Ada content
  over, and I've built on Maxim's work to
  output a fancy version of the AARM
  for it. If you have content elsewhere
  you'd like to add, feel free to submit it.
  You can use plain Markdown (.md
  files) or Markdown with React (.mdx
  files). Some things which I haven't
  found time to write, which other people
  could help with, would be an Alire
  introduction, patterns for when binding
  to C, how to make a memory allocator,
  etc.

From: Luke A. Guest
*   <laguest@archeia.com>*
Date: Fri, 16 Sep 2022 180725 +0100

Looks decent, especially the non-yellow RM.

From: Stephen Leake
*   <stephen_leake@stephe-leake.org>*
Date: Fri, 16 Sep 2022 103403 -0700

> https:// ada-lang.io

It would be nice if comp.lang.ada was listed under community; this newsgroup

is far older than all those flash-in-the-pan wannabes).

From: Jere <jhb.chat@gmail.com>
Date: Fri, 16 Sep 2022 114556 -0700

If you do add it, I would recommend NOT using a link to the google groups interface given the porn spam problem. It would stink if someone at a work computer followed it and got hammered by their IT department (speaking from experience). Perhaps someone has a tutorial webpage on how to set up a mail reader for comp.lang.ada that could be linked to under the community section

From: Luke A. Guest
*   <laguest@archeia.com>*
Date: Sat, 17 Sep 2022 104547 +0100

The link would be news://comp.lang.ada

From: Emmanuel Briot
*   <briot.emmanuel@gmail.com>*
Date: Sun, 18 Sep 2022 233955 -0700

> https:// ada-lang.io

Well done Maxim and Paul, the new site looks nice.

One area that could be nice is a blog aggregator, which would monitor various Ada-related blogs on the Internet and help people find those resources.

I am sure you guys already have plenty of ideas on what to add, maybe not looking for more -)

Ada 2022 Overview

From: Randy Brukardt
*   <randy@rrsoftware.com>*
Subject: Ada 2022 Overview posted
Date: Fri, 23 Sep 2022 024828 -0500
Newsgroups: comp.lang.ada

The Ada 2022 Overview is now available on the Ada-Auth.org website at:

http://www.ada-auth.org/standards/overview22.html

It is available in HTML and PDF versions.

This is an extensive update of Jeff Cousins' Ada 2022 Overview that was published two years ago this month in the Ada User Journal. It expands upon many topics, adds a few missing topics, and corrects many errors found in the original article. An index also has been added, and the HTML version includes links to all of the mentioned AIs and RM subclauses.

The overview tries to cover all of the significant changes and enhancements found in Ada 2022. It includes many examples, and helps to illustrate how the new features could be used.

This version was built partially in response to some complaints here on comp.lang.ada about the lack of Ada 2022 material (outside of the new edition of

John Barnes' book, which many be too expensive for many purposes).

Randy Brukardt, ARG Editor.

Ada-related Tools

GNU Emacs Ada Mode 7.3.beta.

From: Stephen Leake
*   <stephen_leake@stephe-leake.org>*
Subject: Gnu Emacs Ada mode 7.3.beta
*   released.*
Date: Tue, 12 Jul 2022 073115 -0700
Newsgroups: comp.lang.ada

Gnu Emacs Ada mode 7.3.beta is now available in GNU ELPA devel for beta testing.

ada-mode and wisi are now compatible with recent GNAT versions. The grammar is updated to the proposed Ada 2022 version.

Incremental parse is provided. It still has some bugs, so it is not enabled by default. To try it:
(setq-default wisi-incremental-parse-enable t).

Incremental parse often gets confused; to recover, use M-x wisi-reset-parser. That does a full parse of the entire buffer, which can be noticeably slow in large buffers.

To access the beta version via Gnu ELPA, add the devel archive to package-archives:
(add-to-list 'package-archives (cons "gnu-devel" "https://elpa.gnu.org/devel"))

Then M-x list-packages; the beta release shows as ada-mode version 7.3beta1.0.20220711.185004, wisi version 4.0beta1.0.20220711.185552.

See the NEWS files in ~.emacs.delpaada-mode-7.3beta and wisi-4.0beta, or at https://elpa.gnu.org/packages/ada-mode.html, for more details.

Please report success and issues to the Emacs ada-mode mailing list https://lists.nongnu.org/mailman/listinfo/ada-mode-users.

The required Ada code requires a manual compile step, after the normal list-packages installation:

cd ~.emacs.delpaada-mode-7.3beta
.build.sh
.install.sh

There's a bug in install.sh; it looks for WISI_DIR with the old version. Copy the equivalent code from build.sh to fix it.

This requires AdaCore gnatcoll packages which you may not have installed; see ada-mode.info Installation for help in installing them.

build.sh will take longer than in previous releases, up to several minutes; the ada-mode LR1 parse table is now too big to store in ELPA, so build.sh generates it.

Strings Edit v3.8

From: Dmitry A. Kazakov
<mailbox@dmitry-kazakov.de>
Subject: ANN Strings Edit v3.8
Date: Fri, 5 Aug 2022 143618 +0200
Newsgroups: comp.lang.ada

The library provides text editing and I/O:

- Generic axis scales support;

- Integer numbers (generic, package Integer_Edit);

- Integer sub- and superscript numbers;

- ISO 8601 representations of time and duration;

- Floating-point numbers (generic, package Float_Edit);

- Roman numbers (the type Roman);

- Strings;

- Ada-style quoted strings;

- Base64 encoding;

- Object identifiers and distinguished names;

- RFC 8439 (ChaCha20 cipher, Poly1305 digest, AEAD);

- UTF-8 encoded strings and conversions to older encoding standards;

- Unicode maps and sets;

- Wildcard pattern matching.

http://www.dmitry-kazakov.de/
adastrings_edit.htm

Changes to the version previous 3.7:

- Minor bug fixes in Strings_Edit-ISO_8601.

Simple Components v4.63

From: Dmitry A. Kazakov
<mailbox@dmitry-kazakov.de>
Subject: ANN Simple Components v4.63
Date: Fri, 5 Aug 2022 143807 +0200
Newsgroups: comp.lang.ada

The current version provides implementations of smart pointers, directed graphs, sets, maps, B-trees, stacks, tables, string editing, unbounded arrays, expression analyzers, lock-free data structures, synchronization primitives (events, race condition free pulse events, arrays of events, reentrant mutexes, deadlock-free arrays of mutexes), pseudo-random non-repeating numbers, symmetric encoding and decoding, IEEE 754 representations support, streams, multiple connections server/client designing tools and protocols implementations.

http://www.dmitry-kazakov.de/
adacomponents.htm

Changes to the previous version:

- Code cleanup;

- SQL_Show and Close added to the package SQLite;

- Python dynamic bindings added.

Simple Components v4.64

From: Dmitry A. Kazakov
<mailbox@dmitry-kazakov.de>
Subject: ANN Simple Components v4.64
Date: Fri, 19 Aug 2022 114416 +0200
Newsgroups: comp.lang.ada

The release is focused on B-trees. The B-tree represents a more performant and easy to use alternative to SQLite in Ada applications.

The release fixes bugs and adds tagging B-tree buckets with user data. Tags can be used for effective (e.g. logarithmic) search for values rather than for keys only, e.g. for points of entering or leaving an interval of values etc.

A B-tree based implementation of waveforms (x,y) provides means to store render and analyze large sets of measurement data.

http://www.dmitry-kazakov.de/
adacomponents.htm

Changes to the previous version:

- Persistent.Memory_Pools.Streams. Generic_Float_Waveform was added to provide waveform implementation;

- The implementation of B-trees was modified to support tagging buckets of the three. For this the packages Generic_B_Tree, Generic_Indefinite_B_Tree, Persistent.Memory_Pools.Streams. Generic_External_B_Tree, Persistent.Memory_Pools.Streams. Generic_External_Ptr_B_Tree provide subprograms Get_Tag and Set_Tag;

- The package Generic_B_Tree now has additional generic formal parameters Tag_Type and Initial_Tag;

- Subprograms to navigate tree buckets Get_Item, Get_Left_Child, Get_Left_Parent, Get_Right_Child, Get_Right_Parent, Get_Root were added to the implementations of B-Trees in the listed above packages;

- Functions Get_First and Get_Last were added to the implementations of B-Trees in the listed above packages;

- Procedures Store and Restore were added to the implementations of B-Trees in the listed above packages;

- The generic procedure Generic_Traverse and non-generic Travers were added to the implementations of B-Trees in the listed above packages to shallow and deep traversal of the tree items and buckets;

- Persistent.Memory_Pools lock is made reentrant;

- Image function was added to Persistent.Blocking_Files;

- Bug fix in encodings in Persistent.Blocking_Files.Transactional and Persistent.Memory_Pools;

- Bug fix in persistent B-tree implementations;

- Documentation extended.

Zip-Ada V.58

From: Gautier Write-Only Address
<gautier_niouzes@hotmail.com>
Subject: Ann Zip-Ada v.58
Date: Sat, 27 Aug 2022 005822 -0700
Newsgroups: comp.lang.ada

* New in '58', 20-Aug-2022 [rev. 922]

- Support for Zip_64 archives. The Zip_64 format extension is needed when there are more than more than 65535 entries or more than 4 GiB data for a single entry's compressed or uncompressed size, or for a whole archive.

***

Zip-Ada is a pure Ada library for dealing with the Zip compressed archive file format. It supplies:

- compression with the following sub-formats (methods) Store, Reduce, Shrink (LZW), Deflate and LZMA

- decompression for the following sub-formats (methods) Store, Reduce, Shrink (LZW), Implode, Deflate, Deflate64, BZip2 and LZMA

- encryption and decryption (portable Zip 2.0 encryption scheme)

- unconditional portability - within limits of compiler's provided integer types and target architecture capacity

- input archive to decompress can be any kind of indexed data stream

- output archive to build can be any kind of indexed data stream

- input data to compress can be any kind of data stream

- output data to extract can be any kind of data stream

- cross format compatibility with the most various tools and file formats based on the Zip format 7-zip, Info-Zip's Zip, WinZip, PKZip, Java's JARs, OpenDocument files, MS Office 2007+, Google Chrome extensions, Mozilla extensions, E-Pub documents and many others

- task safety this library can be used ad libitum in parallel processing

- endian-neutral IO

Main site & contact info:
http://unzip-ada.sf.net

Project site & subversion repository:
https://sf.net/projects/unzip-ada/

GitHub clone with git repository:
https://github.com/zertovitch/zip-ada

Azip V.2.50

From: Gautier Write-Only Address
* <gautier_niouzes@hotmail.com>*
Subject: Ann AZip v.2.50
Date: Sun, 28 Aug 2022 003334 -0700
Newsgroups: comp.lang.ada

The version 2.5 of AZip is out!

URL: http://azip.sf.net/

AZip is a Zip archive manager.

Some features:

 - Multi-document

 - Flat view / Tree view toggle

 - Simple to use (at least I hope so ;-))

- Useful built-in tools

  - Text & name search function
    through an archive, without having
    to extract files

  - Archive updater

  - Integrity check

  - Archive recompression, using an
    algorithm-picking approach for
    improving a Zip archive's
    compression.

- Encryption

- Zip compression formats supported
Reduce, Shrink, Implode, Deflate,
Deflate64, BZip2, LZMA

- Free, open-source

- Portable (in the sense no installation
needed, no DLL, no configuration file)

Summary of latest changes since 2.15:

 2.50: Support for Zip_64 archives.

 2.40: Optional Windows Explorer
context menu integration.

 2.38: AZip is its own installer (if
desired).

 2.20: Drag & Drop for extracting Zip
archive data. Stealth mode.

 Full list: https://sourceforge.net/p/azip/
news

Under the hood features

 - AZip is from A to Z in Ada -)

 - Uses the highly portable Zip-Ada
library - all in Ada.

 - (regarding Windows skin) Uses the
GWindows library - all in Ada.