



GAP NEWSLETTER; APRIL 2020

Dear GAP Members,

I hope this newsletter finds you and your families healthy and coping well during these unprecedented times. In case you are looking for a distraction from the daily news feeds, following is the current edition of our bi-annual newsletter with highlights from the past six months. Enjoy!

- **Welcome to the 9 new university members that have joined GAP** since October 2019. New members include:
 - University of Twente, Enschede, Netherlands
 - University of Melbourne, Parkville, Victoria, Australia
 - North Phoenix Preparatory Academy, Phoenix, AZ, United States
 - Embry-Riddle Aeronautical University, Prescott, AZ, United States
 - University of Southampton, Southampton, United Kingdom
 - Air Force Institute of Technology, Wright-Patterson AFB, OH, United States
 - Western Mindanao State University, Zamboanga City, Philippines
 - Technische Universität Berlin, Berlin, Germany
 - Swansea University, Swansea, United Kingdom
- **Winners of the 4th Annual Make with Ada competition announced!** On March 3, we announced the results of our fourth annual competition, designed to show how the Ada and SPARK language technologies can significantly improve code quality for modern embedded systems without requiring a steep learning curve for developers unfamiliar with these languages. The MWAC, which ran from September 10, 2019, through January 31, 2020, attracted a total of [26 submissions](#) from all over the world.

The 1st place prize of \$2,000 was awarded to [John Singleton](#) for his [SmartBase IoT Adjustable Bed](#). Ten Finalists also received \$600 each. Notable submissions include:

- [High Integrity Sumobot](#)
- [LoRaDa := Ada + LoRa;](#)
- [Disaster Management with Smart Circuit Breaker](#)
- [CHIP-8 Interpreter](#)

Finally, the Student Prize, an Analog Discovery 2 Pro Bundle worth \$299.99, was awarded to Team ADArose - four students who developed an [automated plant sprinkler](#) based on an STM32F429 board.

Information about this year's *Make with Ada* competition will be available during Q3 2020 at www.makewithada.org. We hope you will encourage your students to participate!

- As part of our **annual GAP renewal process in May**, we will be sending you a survey to help us confirm which members will be actively teaching Ada and/or SPARK this academic year. This information is important for your students and your school, as our customers continually ask where they can find skilled programmers with knowledge of Ada and SPARK.
- **AdaCore is constantly improving its interactive learning site learn.adacore.com**, and we encourage you to visit often. The site currently includes the following courses:
 - Introduction to Ada
 - Introduction to SPARK
 - Ada for the C++ or Java Developer
 - SPARK Ada for the MISRA C Developer
 - Introduction to GNAT Toolchain

An updated version of the "[Introduction to GNAT Toolchain](#)" course is now available, offering more advanced topics, including a new chapter on some very useful tools from the GNAT Community toolchain. Also, the learn.adacore.com site now includes a PDF version of each course, so that readers can download courses for offline reading on their devices. In the upcoming months, a new set of labs for the "Introduction to Ada" course will be available. This will allow Ada learners to put their newly acquired knowledge into practice in an interactive system, which includes built-in tests that validate the source-code.

- We thought you might be interested in reading a couple of **featured community projects**. Below are a blog and a Reddit post, both of which demonstrate the ease in learning and using SPARK Ada for a variety of applications.
 - **Proving properties of constant-time crypto code in SPARKNaCl**
Learn how a single procedure from the C version of TweetNaCl has been translated and proved with SPARK
<https://blog.adacore.com/proving-constant-time-crypto-code-in-sparknacl>
 - **My Ada/SPARK code to parse Bitcoin transactions**
A Redditor shares the code he has written to teach himself Ada/SPARK
https://old.reddit.com/r/ada/comments/ftrj72/my_adaspark_code_to_parse_bitcoin_transactions/
- **Are you working on an exciting project using Ada or SPARK?** We are always looking for unique ideas to share with the community. If your students have recently completed an interesting course, project, thesis or doctoral that utilizes Ada and or

SPARK, we'd love to add it to our growing list of [GAP member projects](#) and [blogs](#). All we need are a couple of paragraphs describing the work and an accompanying photo.

- As you may know, **SIGCSE was canceled** this year. While we were disappointed, we applaud the State of Oregon and the event organizers for considering the health of the attendees above all else.

As always, thank you for helping us keep Ada and SPARK at the forefront of university study. We truly believe that exposing your students to these state-of-the-art programming languages will help them become more skilled and principled programmers.

I wish you good health and success navigating the days ahead.

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