Concept Corner

One of the major factors that a software programmer needs to consider is how fast they code works. To the non-programmer, this might be a confusing concept to understand. The best way to explain this is with a few practical examples.

Let’s say that you are programming a mail delivery robot for the Post Office. You have 10 mailboxes to fill with mail. Each mailbox is located at a different address, and two coffee shops are located near the mailboxes. You can program the robot to deliver the bill from the first company at any mailbox, deliver the bill from the second company, then deliver the bill from the third company. Finally, instead of delivering the robot would need to make the same trip three times, or 30 deliveries, or 30 stops waited for 10 hours. In this case, it is a better option to program the robot to drop off all the bills that belong to the same company at each mailbox. That way, the delivery robot only stops once at each mailbox.

Suppose you have 100 people that are trying to run for president of the United States. You are programming a robot to check if these candidates meet the 3 eligibility criteria to become president: they have been a U.S. resident for at least 14 years, and have been born in the U.S. or have at least one U.S. citizen parent. If any of these requirements are not met, you cannot run for president. You could program the robot to always check all the criteria, but what if the robot misses the first criteria? Why should the robot waste time checking all three criteria when it can only check one? The best way to program this robot is to have it continue to check the other two criteria. The best way to program this robot is to have it continue to check the other two criteria if the first criteria are not met.

Pedagogy Pointers

Free Curriculum: Code.org provides a comprehensive K-5 fundamentals of coding curriculum complete with videos, online and unplugged activities, and guides for educators to help facilitate teaching code in their classroom. Each grade level has its own course of material to cover. Aligns with CS K.1, 1.1, 1.2, 2.1-3, 3.1-3, and 5.1-3.

Code.org fundamentals curriculum: Learning for Ages 5 to 11

Making Meaningful Connections

Computer Science in the Commonwealth: New Resources Unveiled for Educators During CSEdWeek

In celebration of Computer Science Education Week (CSEdWeek) December 4-10, 2023, the Virginia Department of Education is thrilled to introduce a suite of new media resources designed to enrich computer science instruction and support educators looking to enhance their teaching toolkit. Developed in partnership between the Virginia Department of Education and UPM, these instructional resources aim to empower educators with valuable insights in eight areas:

- Virginia's Computer Science Career: Discover the diverse landscape of computer science careers across the Commonwealth of Virginia. This video series provides a look into exciting careers that allow computer science concepts and skills.
- Learning with Tech: This fun-filled and engaging video series introduces K-5 learners to the world of computers and computing systems.
- Making Meaningful Connections - CS Integration: Explore the newly developed Computer Science Integration Course and resources designed to help facilitate computer science curriculum integration into K-8 curriculum. This course serves as a valuable resource for educators looking to enhance their teaching toolkit.
- CodeVA: An initiative of the Virginia Department of Education, CodeVA is designed to bring the VIRGINIA codeVA CodeVA Computer Science Education Week 2023 to Virginia classrooms and districts.
- CodeVA's curriculum: CodeVA curriculum: CodeVA offers a comprehensive K-12 curriculum complete with videos, online and unplugged activities, and guides for educators to help facilitate teaching code in their classroom. Each grade level has its own course of material to cover. Aligns with CS K.1, 1.1, 1.2, 2.1-3, 3.1-3, and 5.1-3.

4. It is important to note that CodeVA is also about understanding its ethical, social, economic, and environmental implications.

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**Important Newsflash!** Coming in the New Year: KITS - Keeping InTouch Seminars. These new Zoom-based training sessions have been designed to help new ARCS participants use their Sphero robots, and will be held every Tuesday at 3 pm. This is an exciting opportunity for teachers to learn how to integrate computer science into their curriculum. The team is excited to share more information about these sessions and how you can participate.

We wish you all safe and happy holidays and look forward to being in touch again in the New Year. If you are interested in learning more about the ARCS program, please reach out to TCEP@odu.edu.

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