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Introduction to Computer Science

July 2nd, 2018

Week 1 Homework Assignments

* Four of the “Links of the Week” would not open (request could not be found)
* How do we email you questions?
* I’m still a bit confused on the range of options for what our project could be? Could I really just explain what I learned about cyber security?
* What should we use-Piazza or Delco Email?
* In the homework section it says to identify class project requirements, but I could not find any link or document that identified this. So what are the requirements?
* What would you like to learn while participating in this course? Send me your response at [balfonsi@dccc.edu](mailto:balfonsi@dccc.edu)
  + I would like to learn the basics of programming to help me succeed in the AP Computer Science class that I will be taking during the school year. I would also like to get a general idea of what part of Computer Science interests me the most.
* Homework Assignment 1: Review links of the week:
  + <https://d1b10bmlvqabco.cloudfront.net/attach/jj4ikbdi3hn5mq/ijkiym1km6312d/jj4isg9mwjv8/computer_science_is_foundational.pdf>
    - Computer Science- develops students’ computational and critical thinking skills and shows them how to create, not simply use, new technologies
    - Important to prepare students for 21st century; helps with information technology, manufacturing, healthcare, retail, weather forecasting, arts, and financial services
      * Information Technology- designing security software and hardware systems or developing mobile communication devices, networks and applications
      * Manufacturing- designing and using simulations to improve products
      * Retail-analyzing data to predict trends and improve inventory management
    - Study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society
    - Algorithmic problem-solving, Computing and data analysis (managing, processing, visualizing and interpreting data), Human-computer interaction, Modeling and simulating real-world problems, Creating and manipulating graphics, Programming (including game design), Security (including cryptography), Web design (illustrating principles of programming, human-computer interaction and abstraction), Robotics (designing and programming), and Ethical and social issues in computing
    - Opens pathway to 130 careers and 48 college majors
      * Understanding of principles of computer science is still key for jobs not directly related to computing
  + <https://www.computerscience.org/careers/>
    - Computer Programmer-write code allowing computer apps to run
      * Communicate with computers in programming languages
      * $82,690
    - Hardware Engineer-design, implement, and test hardware and systems that optimize a computer’s performance
      * Influence the direction of computer tech development
      * Most word in Tech-based industries
      * $110,650
    - Software Developer-create and maintain computer programs; make systems to run devices and computer-related tasks
      * Must be up to date with technology
      * $99,530
    - Systems Manager-oversee and coordinate an organization’s information technology (IT) operations
      * Not Interested
      * $136,280
    - Web Developer-design and code the websites we use everyday
      * Website’s: visual presentation, interactive features, capacity and backend structure
      * High growth potential-20% by 2022
      * $68,670
    - Software Engineer-design and build software operating systems, middleware, business applications, computer applications, games, and network control systems
    - Database Administrator
    - IT Architect
    - Network Administrator
    - Systems Analyst
    - Security Analyst
    - Information Researcher
* Homework Assignment 2: Prepare to discuss your understanding of Computer Science:
* Homework Assignment 3: Identify Class project requirements and ideas (you can use links of the week identified on the syllabus for ideas!):