

# AP Computer Science Principles

## Summer Assignments

2018-19

Instructor - Mrs. Renfroe

**CREATIVITY – ABSTRACTION – DATA & INFORMATION – ALGORITHMS – PROGRAMMING –  
INTERNET – GLOBAL IMPACT**

Connecting Computing | Creating Computational Artifacts | Abstracting | Analyzing Problems &  
Artifacts | Communicating | Collaborating

<http://www.heatherrenfroe.com/>

### ***To: Future AP Computer Science Principles Students***

Welcome to AP CSP! As we eagerly anticipate a great year of Computer Science Principles, there are several required items you need to do to be prepared for the course. Enrolling in this class indicated that you agree to complete this course and the culminating AP CSP College Board tasks, assignments, and exam.

I have prepared a summer assignment list that reviews basic CSP concepts and practices. It is highly recommended that you spread out the summer assignments and not try to complete them all in the first week of August. CSP takes time to process and grasp at a level necessary for success in AP CSP. Remember, that AP CSP is a college level course and that taking a course of this magnitude in high school is difficult, requires dedication, and is a great investment in your education, so prepare yourself and arrive ready to learn.

Have a great summer and enjoy the AP CSP Summer Assignments!

### ***Course Requirements:***

- Student agrees to complete the Summer Assignments, the course, including the AP CSP College Board Exam.
- Student must have access to a computer, the Internet, and a printer **at home**.
- Sign up for the following applications:
  - a. **Remind** – class code @f6aaeh (send a text to 81010)
  - b. **Install Office 365 at home** (directions follow)
  - c. **Download & read the free book “Blown to Bits”** (directions follow)
  - d. **Create an account in CODEcademy (directions follow)**
  - e. **Code.org** – This will be done the first week of school and students will be added according to the period in which they reside.

### ***Required Summer Assignments:***

Completed work must be submitted by **the due dates provided**; late work will not be accepted, regardless of reason. This work will be graded and part of the student’s first nine weeks.

\* **Finish assignments early** if you have travel plans. Lack of Internet accessibility, broken computer/printers, etc. are **NOT** excuses. This is a rigorous AP class with outside assignments as well as work in class.

☐ **INSTALL OFFICE 365 at home** – Using your ClassLink account, install Office 365 on your home computer/laptop. If you have not done this in previous classes, follow the instructions below.

- Go to <https://www.classlink.com/> or <http://portal.office.com/>
- Click “LOGIN” at the top of the page
- Log in with your student ID number (57#), school password, and place santarosa (all one word) in the ‘optional’ slot
- Launch the “Office (FREE!) for HOME icon

☐ **Read REQUIRED READING -- "Blown to Bits" Your Life, Liberty, and Happiness After the Digital Explosion**

by Hal Abelson, Ken Ledeen & Harry Lewis (384 pages) available free online, [here](#) or on the AP Computer Science Principles page on my school website at this URL <http://www.heatherrenfroee.com/> )

NOTE: The first week of school, you will be given a test on the material in this book. Throughout the year, you will be given additional quizzes on the vocabulary and other content from this book. In addition, your midterm and final will include a significant amount of material from this book.

Create a Word document, **create a four-page outline of the book** and set the parameters to the following:

Font: Times-New Roman

Font Size: 13

Line Space: 1.0 with “0” before and after

Margins: Normal

**Save As: YourLastName\_B2B on your GBHS OneDrive cloud-space**

**Due, Monday, August 13, 2018**, Print the outline and turn in on the first day of school. NO late submissions allowed, for any reason.

☐ **Explore RESEARCH & WRITING ASSIGNMENTS**

Practice EXPLORE PERFORMANCE TASK (Explore PT) –See the List of Computing Innovations Below--

Computing Innovations impact our lives in ways that require considerable study and reflection to fully understand them. In this Performance Task, you will explore a computing innovation of your choice. Your close examination of this computing innovation will deepen your understanding of the big ideas studied in this course.

- Create a Word document and save it with the name **YourLastName\_EXPLORE**
- Read the Explore Performance Task – [Implications of Computing Innovations](#)

URL:

<http://inst.eecs.berkeley.edu/~cs10/fa13/blog/CS%20Principles%20Performance%20Assessment%202013-10-1.pdf>

As preparation for the College Board Explore Performance Task, you will complete part of a practice Explore Performance Task this summer. This task **is due the first day of class, AUGUST 13, 2018**, and NO LATE SUBMISSIONS will be accepted. If you are going to be out of town, drop it by GBHS early; if you are

sick the first day of school, a parent/guardian must drop it by GBHS prior to 3:00. This assignment is a TEST grade and **will NOT be accepted after 3:00 on August 13, 2018.**

Your College Board Submissions will include two more sections for the Explore PT; a video & a summary.

NOTES: Most common mistakes made during initial Explore PT are:

- Selecting a technology innovation, not a computing innovation. For instance; biomechanical artificial limbs are technology innovations but not computing innovations. Describing how computing (embedded processors, CAD design tools, statistical analysis tools) enable the prosthetics or design of prosthetics would be a computing. Mars Rovers are a technology innovation but not a computing innovation. Describing how the rover is moved around using onboard computers, how onboard processing analyzes collected data, are computing innovations.
- Plagiarism.
- Single sentence, two sentence responses. This does not demonstrate an exploration and awareness of the innovation.
- Data privacy concerns are not only “can be hacked”. If data is invalid, and medical decisions are made using it, then this is a detrimental effect.

**Make a list one or more URL for each of the following – those will be resources for your Work Cited Page on the “Explore Assignment”.**

- **Find Videos** that describe the topic (From TedTalk Technology, YouTube, Vimeo...).
- A **blog** or **website** that explains **how** the **innovation works**.
- A **blog** or **website** that explains **how** the **innovation impacts** people.
- **Watch** the **video** and read the **resources** you gather online.

**Write a paragraph for each of the following.**

- **Describe** why you find the topic to be interesting.
- **Describe** the specific innovation and **how** it works.
- **Describe** the **area** of our **lives (social, economic or cultural)** that is most **impacted** by the innovation and explain how the innovation impacted the area.
- **Explores** the potentials of that technology -- considering both the good and bad.
- **Examine** the innovation with a critical eye to demonstrate a deep understanding of the innovation, its development, its functionality, and its relationship to big data.  
**(Definition of Big Data: extremely large data sets that may be analyzed computationally to reveal patterns, trends, and associations, especially relating to human behavior and interactions.)**
- Clearly and concisely **type** your answers on Word document(**analysis** and **conclusions**)
- You shall have a maximum of 300 words with at least **4** references to a source of information that **anyone can use to learn about the innovation you explored**.

Follow MLA format to work on the paper – Submit the assignment via e-Mail to [renfroh@santarosa.k12.fl.us](mailto:renfroh@santarosa.k12.fl.us) AND bring a printed copy with you the first day of school.

MLA format Style Guide: <https://owl.english.purdue.edu/owl/section/2/>

### ***List of Computing Innovations***

#### **Additional Websites with Computing Innovations:**

- ✓ [http://computing-concepts.cs.uri.edu/index.php/Computing\\_Innovations](http://computing-concepts.cs.uri.edu/index.php/Computing_Innovations)
- ✓ <http://www.innovationexcellence.com/blog/2015/12/26/7-top-tech-trends-impacting-innovators-in-2016/>

|                           |  |
|---------------------------|--|
| 3G/4G/5G Mobile Internet  | Bar codes and scanners                                     |
| AJAX                      | Digital photography/videography                            |
| Artificial Intelligence   | DNA testing and sequencing/human genome mapping            |
| ATMs                      | E-Commerce   |
| bitcoin                   | Email  |
| Bit Torrent               | Fiber optics   |
| Bluetooth                 | Graphic user interface (GUI)                               |
| Broadband                 | Internet, broadband, WWW (browser and html)                |
| Cloud storage             | Large-scale wind turbines                                  |
| Crowdfunding              | Magnetic resonance imaging (MRI)                           |
| Drone                     | Media file compression (jpeg, mpeg, mp3)                   |
| E-commerce                | Microfinance   |
| HTML5                     | Microprocessors  |
| Map/GPS/Internet Location | Mobile phones  |
| Microensing               | Non-invasive laser/robotic surgery (laparoscopy)           |
| Mobile Payments           | Office software (spreadsheets, word processors)            |
| Music/Video streaming     | Online shopping/e-commerce/auctions (e.g., eBay)           |
| NFC                       | Open source software and services (e.g., Linux, Wikipedia) |
| RSS                       | PC/laptop computers  |
| Search Engines            | Photovoltaic Solar Energy                                  |
| Social Networks           | RFID and applications (e.g., EZ Pass)                      |
| Steam                     | Social networking via the Internet                         |
| Tor                       | SoftwareAsAService   |
| VoIP                      | SRAM flash memory  |
| VPN                       | Stents   |
| Web Browsers              | YouTube (Internet video)                                   |
| WiFi                      |  |

☐ **Create CODECADEMY** -- The assignments must be completed **IN ORDER**. All 3 courses must be completed prior to August **will NOT be accepted with a date after 3:00 on Friday, August 3, 2018**. You must email the completion certificates/score reports to me at [renfroh@santarosa.k12.fl.us](mailto:renfroh@santarosa.k12.fl.us) with your first and last name in the subject line.

- You must have your own Gmail account (REQUIRED) with an appropriate email address that includes your last name. This will be used throughout the entire year. A school-based (with your 57#) will not work for this part of the coursework.
- Create an account on <https://www.codecademy.com/>

- Click “Sign Up”
- Enter a personal email address
- Enter a password
- Enter a username – this must be your FIRST NAME – LAST NAME
- **Complete** the course “**Learn HTML & CSS: Part 1**” (5 hours). You must complete this entire course before moving to the next step.
  - **Make sure to complete all of the assignments & the quizzes and save them as a .pdf with the filename YourLastName\_HTML\_CSS and email Mrs. Renfroe the score reports.**
  - **Complete prior to Friday, August 3, 2018.**
- **Complete** the course “**Learn JAVA**” (4 hours). **DO NOT CONFUSE WITH** “Learn JavaScript”.
  - Click on “Catalog” on the top right corner of the page
  - Find the course “Learn JAVA”
  - Complete the course “Learn JAVA” before moving to the next step.
  - **Make sure to complete all of the assignments & the quizzes and save them as a .pdf with the filename YourLastName\_JAVA and email Mrs. Renfroe the score reports.**
  - **Complete prior to Friday, August 3, 2018.**
- **Complete** the course “**Python**” (13 hours)
  - Click on “Catalog” on the top right corner of the page
  - Find the course “Python”
  - Complete the course “Python”
  - **Make sure to complete all of the assignments & the quizzes and save them as a .pdf with the filename YourLastName\_Python and email Mrs. Renfroe the score reports.**
  - **Complete prior to Friday, August 3, 2018.**

## AP Computer Science Principles Exam

The AP Computer Science Principles Exam is unlike those of many other AP courses. The AP exam consists of:

- Explore Performance Tasks
- Create Performance Tasks
- Multiple Choice Exam

The two Performance Tasks take most of the school year to complete and must be uploaded to the College Board in a Digital Portfolio format via their web page by the deadline established by the College Board.

You will receive the course syllabus on the first day of school, or, you can access it [here](#) or via the URL: <http://www.HeatherRenfroe.com>

See you in the fall!  
Mrs. Renfroe