



AP Computer Science Principles **Summer Assignments 2019-2020**

Instructor - Mrs. Renfroe

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

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

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, and take the AP CSP College Board Exam.
 - Student must have access to a computer, the Internet, and a printer at home.
 - Student must complete the following requirements before June 8:
- Download the Remind App** and join the class code @f6aaeh (send a text to 81010) & check Mrs. Renfroe's website EACH Sunday for upcoming assignments and due dates.
<http://www.heatherrenfroe.com/>
 - 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 & follow directions for either PC or MAC
 - Download the 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.heatherrenfroe.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 FREE account at CODECADEMY <https://www.codecademy.com/>**
(DO NOT REGISTER FOR THE PRO ACCOUNT!)

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 gmail address
- Enter a password
- Enter a username – this must be your LastName_FirstName

Required Summer Assignments:

Completed work must be submitted by **the due dates provided**; late work will not be accepted. It is not my problem if you didn't do your work on time. This work will be graded.

* **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.

□ **Blown to Bits**

Create a Word document, **write a two-page outline of your favorite chapter.**

Font: Times-New Roman

Font Size: 10

Line Space: 1.0 with "0" before and after each line

Margins: Normal

Save As: a .pdf with the title YourLastNameFirstName_B2Boutline
(ex. RenfroeHeather_B2BOutline)

Complete & submit via email the .pdf prior to 6:00 a.m. Friday, August 2, 2019.

NO late submissions allowed, for any reason. You will receive a grade of "0" in the Grade Line if this is not turned in before the due date.

□ **Codecademy**

Choose "Catalog" from the top menu and choose the course "Learn How to Code" (6 hours).

- **Make sure to complete all of the assignments & the quizzes. Submit via email the completion certificate as a .pdf to Mrs. Renfroe**
- **Complete & submit the .pdf prior to 6:00 a.m. Friday, August 2, 2019.**

□ **RESEARCH & WRITING ASSIGNMENT**

Computing Innovations impact our lives in ways that require considerable study and reflection to fully understand them. For this Research & Writing, 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.

Using MLA format– Submit the assignment via e-Mail to 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/>

- Create a Word document and save it with the name **YourLastName_YourFirstName_RESEARCH**

Complete & submit via email the .pdf prior to 6:00 a.m. Friday, August 2, 2019.

NO LATE SUBMISSIONS will be accepted.

NOTES: Most common mistakes made during initial Research are:

- Selecting a technology innovation, not a computing innovation. For instance; biomechanical artificial limbs are technology innovations but not computing innovations. 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, is a computing innovation.
- Plagiarism.
- Single sentence or 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 with a maximum of 300 words overall!

- **Describe** why you find the topic to be interesting.
- **Describe** the specific computing 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**)
- At least **4** references to a source of information that **anyone can use to learn about the innovation you explored**.

List of Computing Innovations

Additional Websites with Computing Innovations:

Simply search for "Computing Innovations" if none of these are of interest you

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

AP Computer Science Principles Exam

The AP Computer Science Principles Exam is unlike those of many other AP courses. The AP exam consists of **2 separate submissions to the AP College Board as well as a written exam:**

- Explore Performance Task submitted in December
- Create Performance Task submitted in March
- Multiple Choice Exam in May

See you in the fall!

Mrs. Renfro

renfroh@santarosa.k12.fl.us