AP Computer Science Principles Summer Assignment.

Your summer assignment will include videos of essential concepts with Computer Science, as well as computer programming practices to sharpen your coding skills. I have placed specific exercises based on your previous experience with coding. Whether you have little to none, some, or a great deal of experience with coding in the past, there are challenges and practice below that will fit your experience level to prepare you for the upcoming year.

First, take a look at these two videos.
The first video discusses some of the most important concepts in computers. Notes and a complete understanding of everything mentioned in the video are not required but attempt to develop some familiarity with every concept discussed.
https://youtu.be/LpuPe81bc2w.

The second video discusses the most fundamental concept with computer science, binary numbers. All data within computers at the lowest level are represented using the binary number system. The binary systems only include the two digits 1 and 0, representing terms such as on and off, yes or no, and true or false. Using this system simplifies the design of computers. Watch this video to get a more thorough understanding of binary numbers and how to convert the binary number system to our base number system (Decimal system) and some others.
https://www.youtube.com/watch?v=LpuPe81bc2w

Coding Practice:
If you have NO computer programming background, try the following two websites.
https://blockly.games

Blockly Games is a website composed of challenges. To complete these challenges, you must properly apply coding concepts and logic to complete each challenge.

Do blocky before you take a look at Scratch. Scratch allows for a little more creativity. You must have some familiarity with how blocky coding works before using Scratch, which is why doing Blockly Games first is required. Scratch's platform is much more complex. There are no specified challenges, but it allows you to create whatever you can put together. First, make an account and just experiment with each available coding block that Scratch provides. Once you get comfortable with the concepts and how they work, create small challenges for yourself and see what you can come up with and create. Try to develop more complex creations as you go.
https://scratch.mit.edu

For those who do have coding experience:
https://www.codewars.com

Code wars is a website composed of various coding challenges that range in difficulty. Choose your desired programming language, start with beginner levels challenges for

practice to sharpen the basics. Then, as you gain your comfortability back, work your way through the more complex problems, and see how far you can go!

***As you go through, you will come across problems that require concepts that you may not be familiar with. Research and become familiar with their meanings and usages.