

Computer Science Summer task.

Create a Python program that solves a problem of your choosing. Some suggestions are included below but you can also find many challenges online or make up your own. If your solution is quite simple try some of the more challenging problems as well or a larger project of your own:

Easy

- A program that totals up the cost of items when given quantities and costs.
- A program that takes votes for 3 candidates and then announces who has won
- A program that calculates the area and circumference of a circle when given the radius.

Medium

- A program that works can reveal the top score, lowest score and average score from a given list of data.
- A program that can take any year (past, present or future) and tell you if it was a leap year
 - To check if a year is a leap year, divide the year by 4. If it is fully divisible by 4, it is a leap year. For example, the year 2016 is divisible 4, so it is a leap year, whereas, 2015 is not. However, Century years like 300, 700, 1900, 2000 need to be divided by 400 to check whether they are leap years or not.
- A program that can check if passengers are able to ride a roller coaster based on given rules:
 - Riders are taller than 140cm, or taller than 120CM and with an adult. No more than 8 people can ride at a given time. The program should announce when the ride is full, and after each person is allowed on say how many seats are left.

Hard

- Code any searching or sorting algorithm descriptions and pseudocode solutions available here <https://www.bbc.co.uk/bitesize/guides/zjdkw6f/revision/1>
- Create a program that can use 2D lists to manage stock in a business with array one using the name of the item and array 2 holding the quantity. If the quantity in array 2 drops below a given number (you choose) an alert should be printed reminding the user to order more and giving the name of the item.

Super challenge

- Create a text based computer game. Good text based games include RPG and Tycoon style games. A well know mostly text based game is A Dark Room found here <https://adarkroom.doublespeakgames.com/>