



COMPUTER SCIENCE SUMMER ASSIGNMENT

Python Programming Task

We will be following the OCR A-Level Computer Science specification. Problem solving and programming are at the heart of this course.

We will be learning Python which is one of the most popular languages in use and commonly used in GCSE Computer Science

Python is a good language to try on your own as it requires less installation than some other languages and can be run on any type of machine. There are even some online versions which can be run in a browser.

For your summer programming task, you will be writing some Python as well as some HTML.

If you have no prior knowledge of Python, go through this free course:

<https://www.codecademy.com/learn/learn-python>

(This is the old version of Python, Python 2 – unfortunately the up-to-date-course is not free!)

Do part 1 and part 2 (Python Syntax and Strings and Console Output).

Provide screenshots of your progress.

COMPUTER SCIENCE SUMMER ASSIGNMENT

If you have a reasonable knowledge of Python, do the following problems:

- Write a program that accepts a list of positive integers from the user, terminated by a zero. It then writes out the sum, average, maximum and minimum of the numbers.
- Write a program that reads a sentence from the user. It then writes out the sentence in reverse order, with all upper case letters changed to lower case and lowercase to upper case. Punctuation, spaces etc should be unchanged.

Be ready to hand in your work in the first lesson in September!

Websites and HTML

Learn some HTML Hypertext Markup Language and write a webpage.

www.w3schools.com

HTML TASK 1

1. Open a notepad file and write in the following text. [*put in your name and interests*]

```
<!DOCTYPE html>

<html>
<body style="background-color:Bisque; color:Maroon">

<h1>My name is your name here</h1>
<hr>
<hr>

<p>I am interested in maths and computing (change as you like)</p>

</body>
</html>>
```



COMPUTER SCIENCE SUMMER ASSIGNMENT

2. SAVE AS **mywebpage.html** and then open in a browser

Next change some of the tags and properties.

Eg try different colours. Put in more `<hr>`

For other colours try

https://www.w3schools.com/tags/ref_colornames.asp or

http://www.w3schools.com/tags/ref_colorpicker.asp

html tag guide:

`
` line break,

`<hr>` horizontal ruler

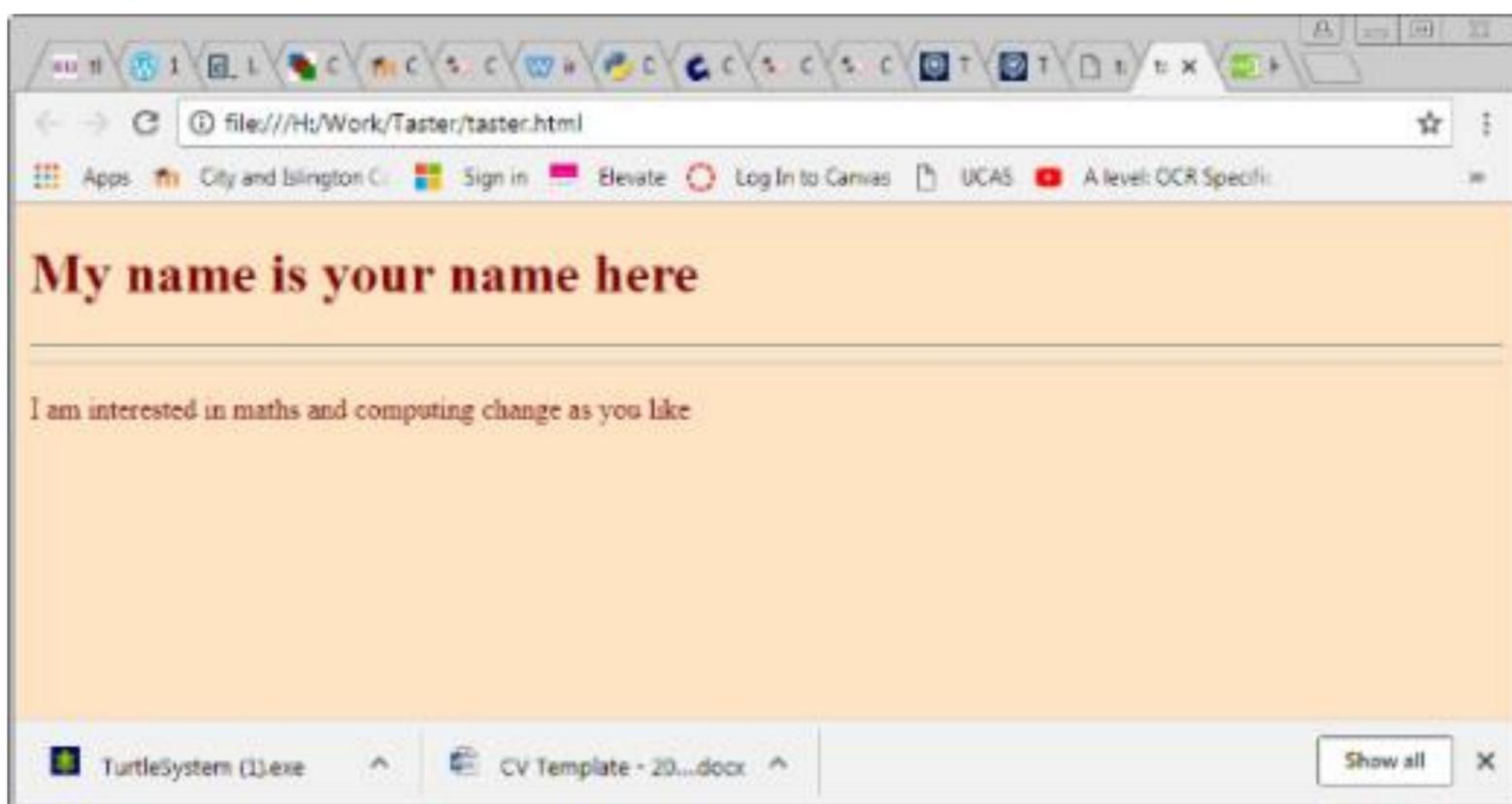
`<p></p>` paragraph

`<h1></h1>` header

``This links to the BBC website``

``

`<body style="background-color:#cccc99; color:#003f9f">` `</body>`





COMPUTER SCIENCE SUMMER ASSIGNMENT

HTML TASK 2

•Work through www.w3schools.com HTML tutorial and learn about more features: eg

HTML Editors	HTML Headings	HTML Images
HTML Basic	HTML Paragraphs	HTML Lists
HTML Elements	HTML Styles	HTML CSS
HTML Attributes	HTML Links	

- Choose a topic that interests you. Ideas: Card Games, Sports, Fish, Countries, Capital Cities, Vegetables and write a webpage or mini website. It is best to use notepad or notepad++ rather than software like 'Dream Weaver' to learn html.
- The most important thing is to have fun and learn. Please bring your html file to the first lesson on a USB Flash Memory stick.

Extension work

The Isaac Computer Science website has many useful resources for A Level.

You can use it without signing up but signing up tracks and saves your progress and is useful. The site is free.

To prepare for the course, especially if you have not done GCSE before, work through some or all of these:

- https://isaacomputerscience.org/topics/gcse_programming_concepts
- https://isaacomputerscience.org/topics/gcse_data_representation
- https://isaacomputerscience.org/topics/gcse_boolean_logic
- https://isaacomputerscience.org/topics/gcse_systems
- https://isaacomputerscience.org/topics/gcse_networking

Do the tests at the end of each section and screenshot your score.