THE ROSEDALE HEWENS ACADEMY TRUST

OCR AS Computer Science

Bridging the Gap Summer Work

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OCR AS COMPUTER SCIENCE SPECIFICATION

OBJECTIVE: Familiarize yourself with the OCR AS Computer Science Specification/Syllabus and identify unfamiliar topics.

Instructions:

- Access the OCR AS Computer Science Specification from the official OCR website.
- Read the specification carefully, considering the listed topics, learning outcomes, and assessment objectives.
- Identify unfamiliar areas and conduct independent research to gain a foundational understanding.

Python Programming Course

Colleges in the Rosedale Hewens Academy Trust are part of the Cisco Networking Academy, where students are able to persue self-paced courses in a variety of fields such as programming, Cyber Security and IoT.

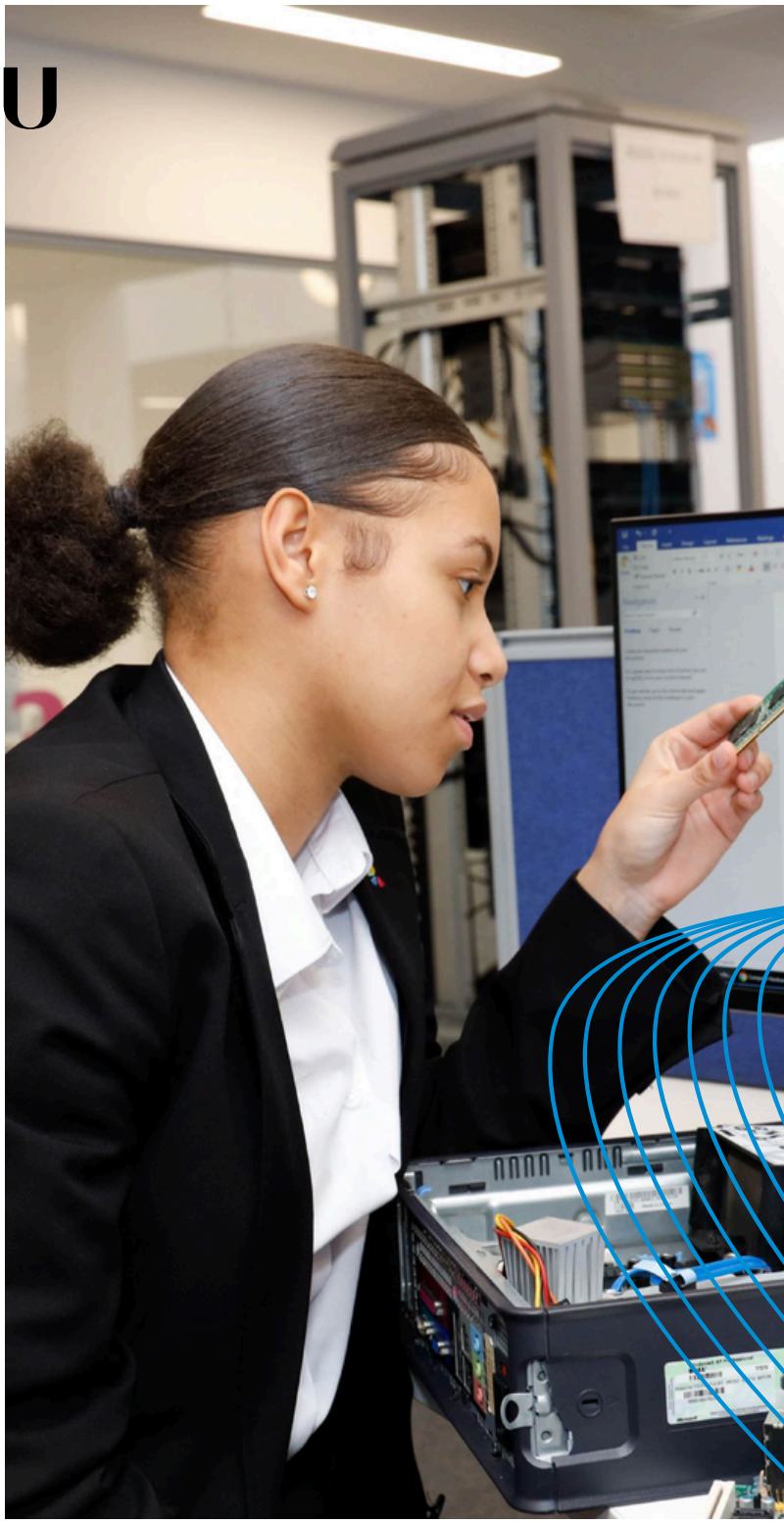
Instructions to access the python programming course:

- Click on the self-enrollment link below.
- Read and follow the instructions carefully.
- You can use either your school or personal email to register.
- Don't forget to check your email for the activation link after registering.

Click here for the Python Essentials course

You will have two (2) months to complete this course.

Exploring the CPU architecture



INSTRUCTIONS

- Create an account at Isaac Computer Science
- Use the OCR A Level resource section of the website to create a PowerPoint presentation about the content below.

1.1.1 STRUCTURE AND FUNCTION OF THE PROCESSOR

(a) The Arithmetic and Logic Unit; ALU, Control Unit and Registers (Program Counter; PC, Accumulator; ACC, Memory Address Register; MAR, Memory Data Register; MDR, Current Instruction Register; CIR). Buses: data, address and control: how this relates to assembly language programs. (b) The fetch-decode-execute cycle, including its effect on registers. (c) The factors affecting the performance of the CPU, clock speed, number of cores, cache.

Exploring Algorithms

OBJECTIVES: UNDERSTAND HOW STANDARD SORT AND SEARCH ALGORITHMS WORK.

Sorting Algorithms (year12):

- Bubble Sort
- Insertion Sort

Searching Algorithms:

- Binary Search
- Linear Search

Instructions:

- Use Isaac Computer Science website to understand how the above sort and search algorithms work.
- Find these algorithms on Youtube and watch them for further understanding.

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Have an amazing summer of fun and learning! See you in September!

Your Teacher: S. Blair-Gordon