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COMPUTER SCIENCE

MR Hewitt

AQA

Course Code: 7517

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PROGRAMMING LANGUAGES

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PAPER 1
PROGRAMMING

40% Final Grade

Practical, On-Screen Exam

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Skeleton Code

- AQA provide us with a prewritten VB program in September
- Normally a game or simulation
- Answer questions on and modify the code in exam conditions
- In year 12, we will spend 3 lessons per week developing programming skills and working through practice tasks

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PROGRAMMING PARADIGMS

Understand the structured approach to program design and construction.

Be able to construct and use hierarchy charts when designing programs.

Be able to explain the advantages of the structured approach.

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Be familiar with the concepts of:

- class
- object
- instantiation
- encapsulation
- inheritance
- aggregation
- composition
- polymorphism
- overriding.

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DATA STRUCTURES

- Queues
- Stack
- Graphs
- Trees
- Hash tables
- Dictionaries
- Vectors

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ALGORITHMS

- Graph and tree traversal
- Reverse Polish notation
- Searching and sorting algorithms
- Path finding and optimisation

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PAPER 2
THEORY

40% Final Grade

Written Exam

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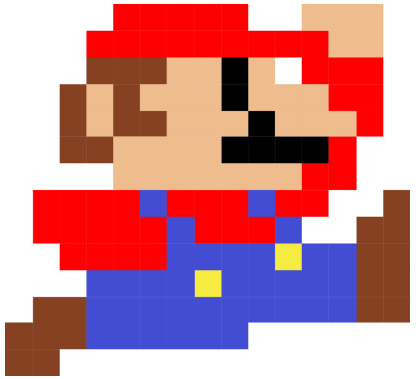
DATA REPRESENTATION



- Binary, Hexadecimal, ASII, Unicode
- Floating and fixed point binary
- Representation of images and sound

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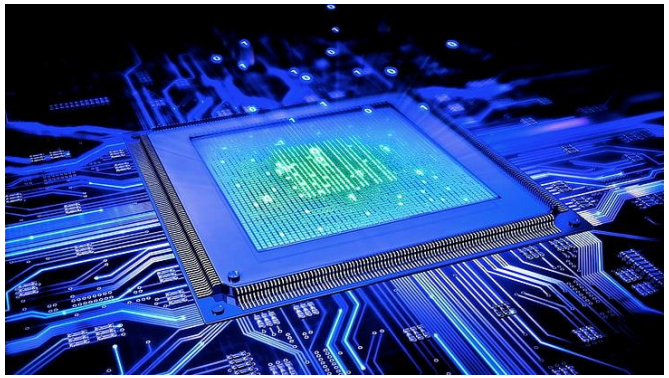
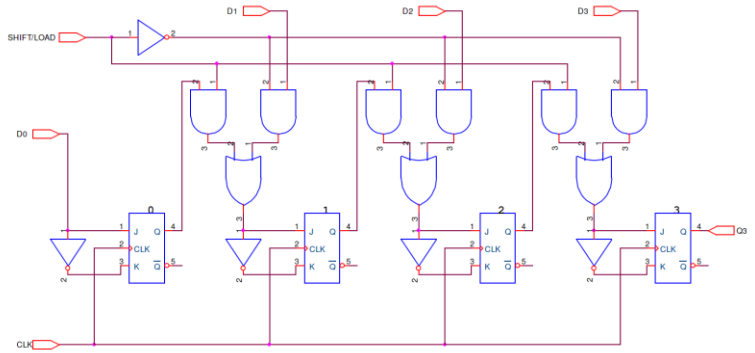
SYSTEMS & ARCHITECTURE





- The Processor and the FDE Cycle
- Operating systems and software classification
- Logic gates and Boolean algebra

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NETWORKING

- Network hardware and topologies
- Logical networking and protocols
- The Internet
- Malware and network protection

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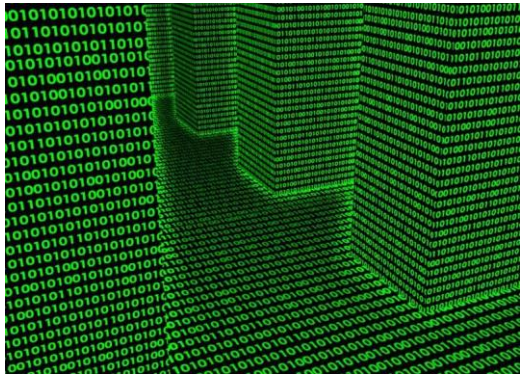
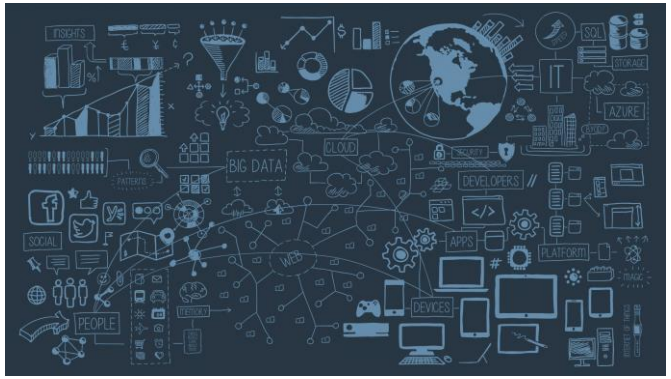
DATABASES AND BIG DATA





- Relational Database structure and normalisation
- SQL
- Ways in which big data can be processed

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CONSEQUENCES OF COMPUTING

- Computer ethics and current innovations
- Legislation
- Moral, social and cultural implications

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NEA
PRACTICAL PROJECT

20% Final Grade

Internally Assessed Project

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YOUR CHANCE TO SHOW OFF…

- Often produced using VB forms with a database back end and the use of SQL
- Previous projects have included Chess, stock market simulation, environmental simulations, booking systems, science or maths based systems, route planning, AI training programs and Games
- You are not restricted to the use of VB but this is preferred

ANY QUERIES?

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