

Options talks

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# GCSE

## Computer Science



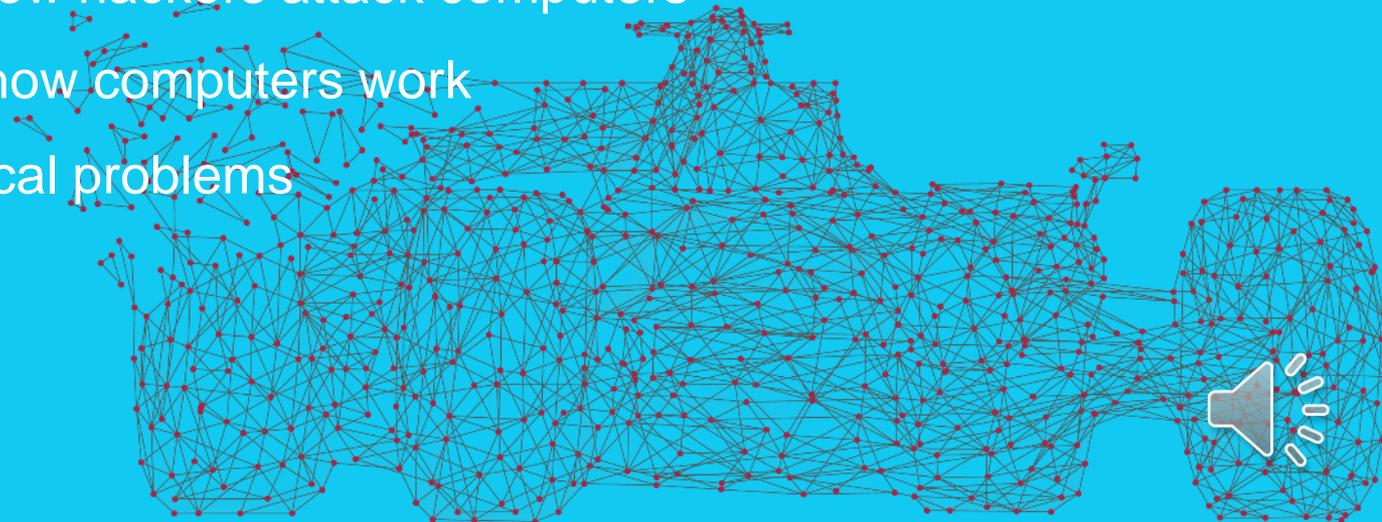
# Do you like...?

Maths  
Creating  
Programming  
**Logic**  
Problem solving  
Hacking  
Technology  
Internet



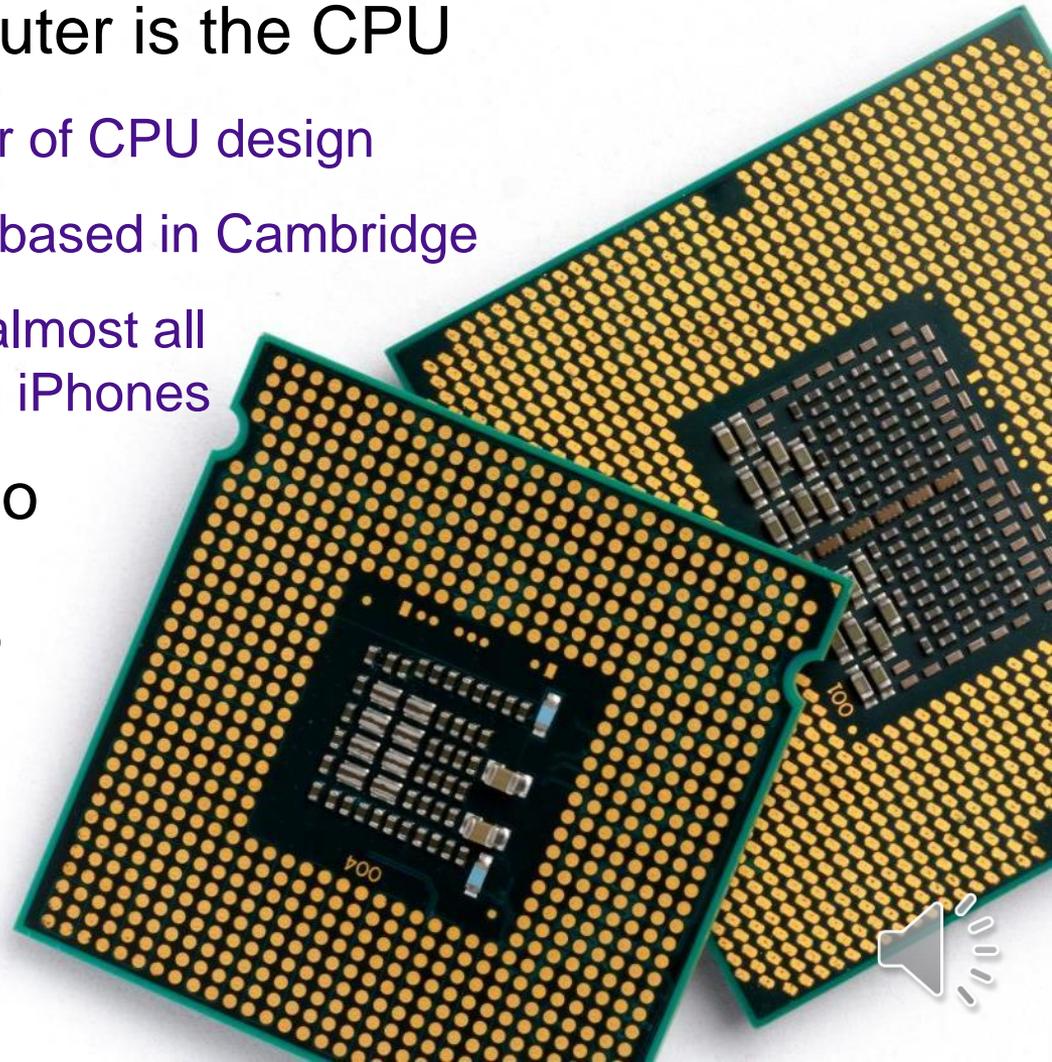
# Why choose CS?

- Computers are changing every part of our lives at an ever increasing rate – why not drive the future?
  - You could get paid a salary on average of £45,000!
- In this GCSE:
  - Experience programming and making new software
  - Find out how hackers attack computers
  - Discover how computers work
  - Solve logical problems



# CPU design

- The brain of any computer is the CPU
  - The UK is a world leader of CPU design
  - Made by ARM, who are based in Cambridge
  - ARM chips are used in almost all mobile phones including iPhones
- Are you the person who will design the next generation of devices?



# Drones

- Drones are already used for film making, search & rescue and surveying
  - In the future, deliveries to your house could be made by drone
  - They will need programmers to tell them where and when to go each day
- Would you like to be a part of this future?



# Robotics

- We are finding more and more uses for robots
  - Robotic vacuums in the home
  - Car assembly
  - Clearing mines in a war zone
- To make a robot you need to have a good understanding of how computers work and how to program them



# The World Wide Web

- Invented by British scientist, Tim Berners-Lee in 1989
  - More than four billion people now use it
  - Over 45 billion web pages have been written
- Every British business needs people with an understanding of how computing can help them



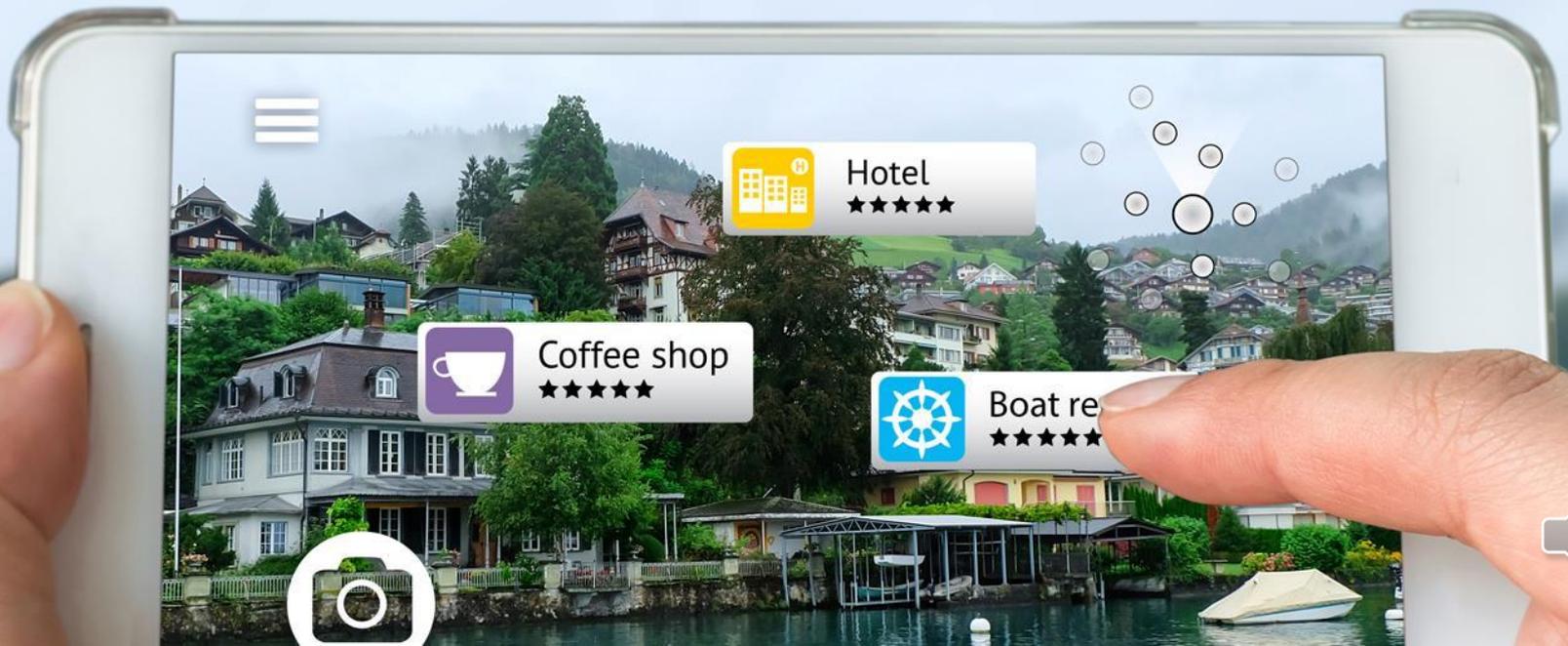
# Game-changing E-commerce

- Shopping has been transformed since the web was invented
  - Online shopping was worth £1 trillion in 2014
  - It is predicted to be worth £3.7 trillion by 2021
- Want to know how it works?



# Augmented reality

- By adding information to the world we can:
  - add reviews on shops and cafés as we see them
  - utilise a heads-up display when driving
  - or play Pokémon Go



# Entrepreneurs & start-ups

- It took just three people to create Snapchat
  - Bobby Murphy was the programmer who coded the app
- Within four years the software was sending six billion videos per day
  - Most entrepreneurs can't imagine having made it without a knowledge of IT and Computer Science



# Big companies in the UK

- Major international companies are present in the UK and looking for bright new talent
  - Google
  - Microsoft
  - Apple
  - Samsung
  - Facebook



# A strong games industry

- The UK is well known for its games development.
- The following were all made in the UK:
  - Grand Theft Auto (Edinburgh)
  - Elite Dangerous (Cambridge)
  - Candy Crush (London)
  - Batman: Arkham (London)
  - Sonic Forces (Leamington Spa)
  - Burnout Paradise (Guildford)



# Course structure

- Part 1: Computer Systems. (50%)
- Part 2: Computational thinking, algorithms and programming. (50%)

2 written exam papers,

1hr 30min, each.

80 marks per paper.



# What will I learn?

- This GCSE will equip you with a range of transferable practical and theoretical skills:
  - Programming skills in a modern language (Python / C#)
  - An understanding of how computers and networks work
  - Knowledge of cyber-security and how hackers attack systems



# 01 : Computer Systems

- System Architecture.
- Memory.
- Storage.
- Computer Networks, Connections and Protocols.
- Network Security.
- System Software.
- Ethical, Legal, Cultural and Environmental Impact.



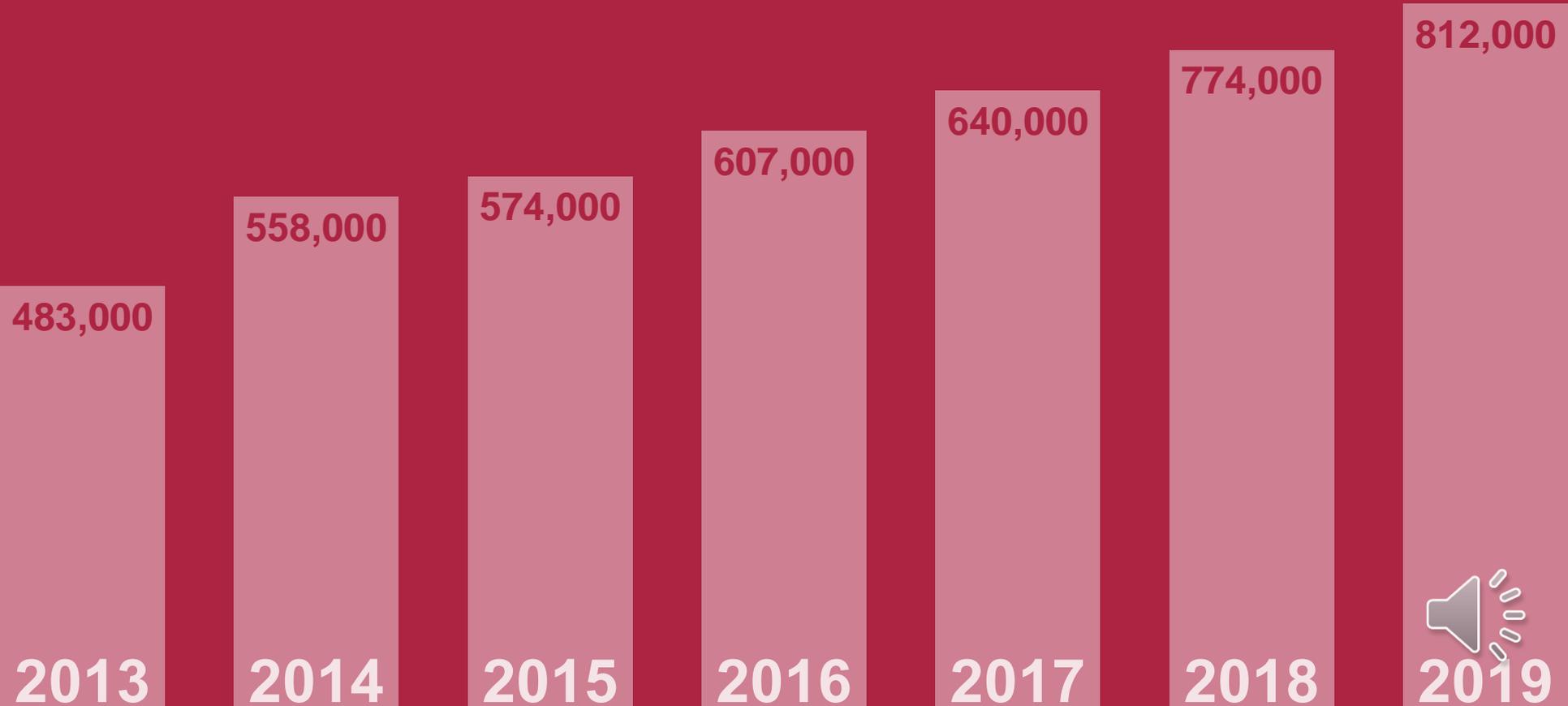
# 02 : Computational thinking, algorithms and programming

- Algorithms.
- Programming Fundamentals.
- Producing Robust Programs.
- Computational Logic.
- Programming Languages and Integrated Development Environments.



# Equip yourself for success

- IT, programming and computer services have an ever growing number of jobs in the UK



# Will you make the next BIG app?



# Big careers in...

Systems engineer  
Design **Robotics**  
Future careers electronics  
Games **Web** Cyber-Security  
Data **Entrepreneur** App  
analysis UX/UI Programming  
Consultant



The world needs **YOU**  
to help develop the future.

**Are you in?**



