

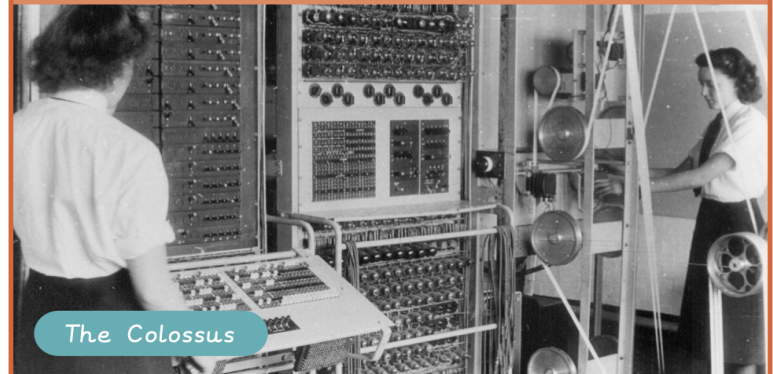
Bletchley Park

Acrostic code	A type of code where the first letter of each word, line, or paragraph when put together spells a message.
Brute force hacking	When someone, known as a hacker, uses different types of methods, such as trial and error, to crack entry into secured information.
Caesar cipher	A way in which every letter is replaced with another letter in a fixed number of places down the alphabet.
Chip and pin system	A payment system to buy something securely where a plastic bank card, such as a debit or credit card, has a chip in it, which the card owner can access by entering a Personal Identification Number (PIN).
Cipher	Information that is written in a secret way, also known as a code.
Date shift cipher	A code derived from the date that tells you how many spaces to move each of the letters in the coded message. For example, the date 1 January 1984 written in date format becomes '01011984'. This tells you to move the first letter of your coded word 0 spaces, the second letter by 1 space etc.
Encrypt	Converting information/data into a secret code or message, to avoid unauthorised access.
Invention	A new device or process that solves a problem.
Nth letter cipher	A type of code where you choose the Nth letter of the text/code again and again until the text ends. Say N=10, then you find every 10th letter in the text/code till you reach the end of it, to reveal a secret message.
Password	A unique combination of letters, numbers or symbols that protects personal information online.
Pigpen cipher	A substitution code, where letters are exchanged for symbols, which are parts of a specific grid.
Technological advancement	When scientific discoveries are made that can lead to the development of new or existing technologies to improve on current processes in life.
Trial and error	To test a method of resolving something, and if it fails, to try another method and continue this process until success has been achieved.

Key facts

Over 10,000 people worked for Bletchley Park. Over 75% of the workers were women.

In 1943, the Colossus computer was constructed by codebreakers during World War II. This enormous machine was the world's first electronic programmable computer. It took hours rather than days and weeks to crack encrypted messages to help win the war.



The Colossus

Enemy messages, which were encrypted, had to be written down on paper. Then they were sent over to Bletchley Park, often by motorbike.

Example:
Date shift cipher:



Visual representation:

Date used to encrypt the message: 1st January 1984
In number format this would read: 01 01 1984

Original message:

h	e	l	l	o
---	---	---	---	---

Each letter shifted:

0	1	0	1	1
---	---	---	---	---

Encrypted message:

h	f	l	m	p
---	---	---	---	---

a b c d e f g h i j k l m n o p q r s t u v w x y z

Introduction to Python

Algorithm	A sequence of instructions which, when followed, solve a problem.
Code (computer)	A set of instructions written in programming language, to tell a computer what to do.
Computer command	To give an order or instruction to a computer, to complete a particular task.
Decompose	To break something down into smaller chunks.
Import (software)	To pull another file into software, to place, edit and manipulate.
Indentation (programming)	In programming (for example Python), indentation is used to define a block of code.
Loop	A repeated sequence of instructions.
Nested loop	A loop, within a loop.
Random numbers	An unpredictable sequence or reveal of numbers.
Remix	Something that has been reworked to produce a varying version of the original.
Script libraries	A series of pre-written, functional codes that can be accessed and imported into a program to save time.
Variable	This could be a number or text, that can change each time the program is run and often in combination with selection to change the end result of the program.

Did you know?

Python is used to teach computers how to think for themselves!

This is sometimes known as artificial intelligence (AI) or machine-learning.

They can learn skills such as speech recognition.



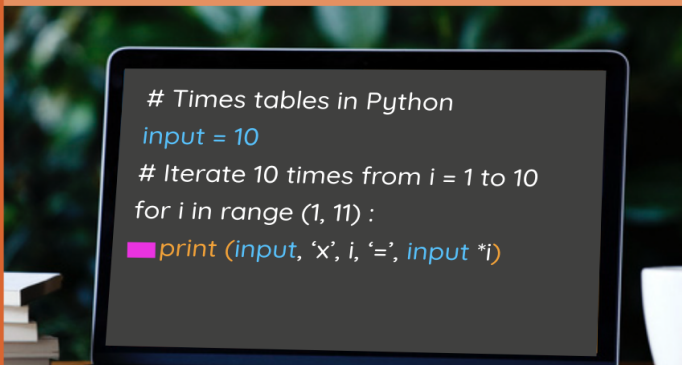
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Key facts

Python program to display times tables:

Try this Python code out yourself, and change the variable (input = 'x') to display a different times table chart.



- Indentation
- Variable
- Loop

Algorithm to make a cup of tea:

The steps in the algorithm must be followed, if we ignored step one, we would have no hot water!

