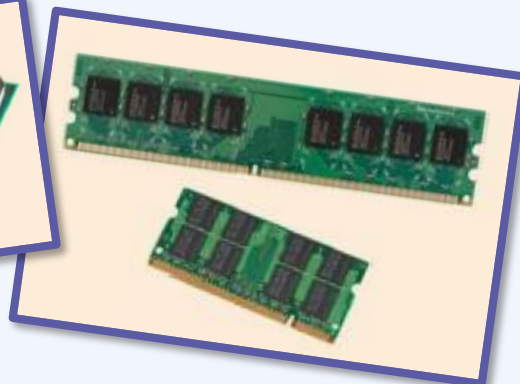
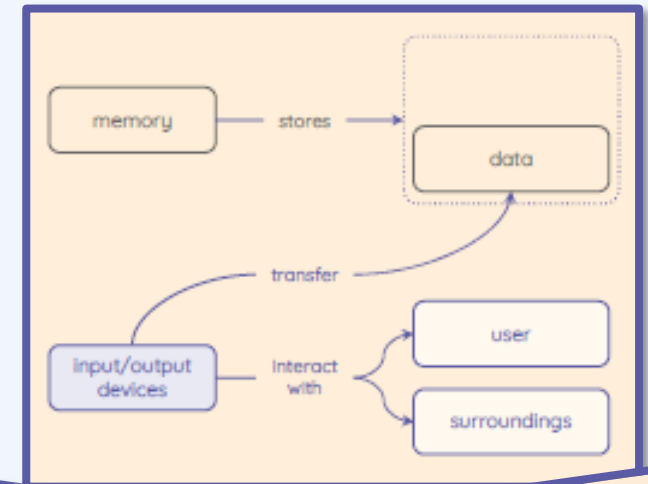
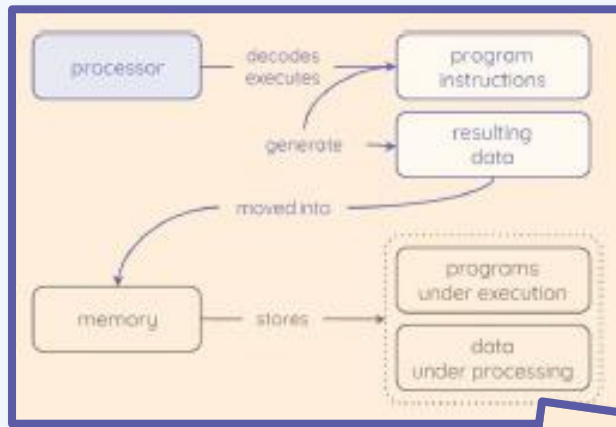
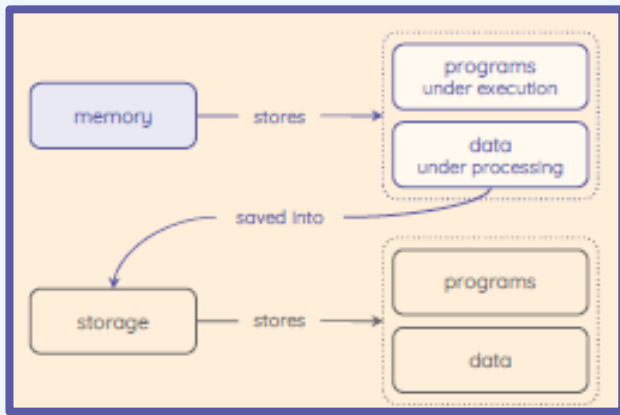
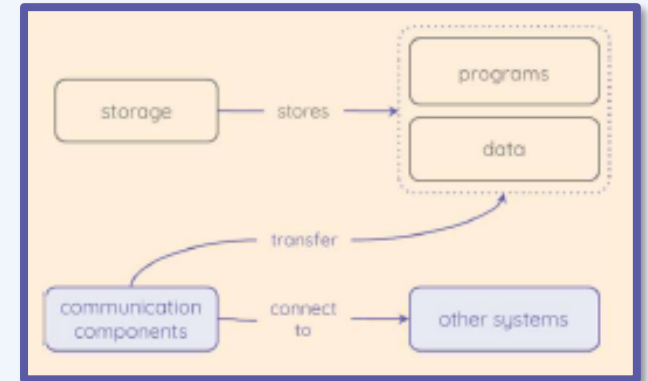
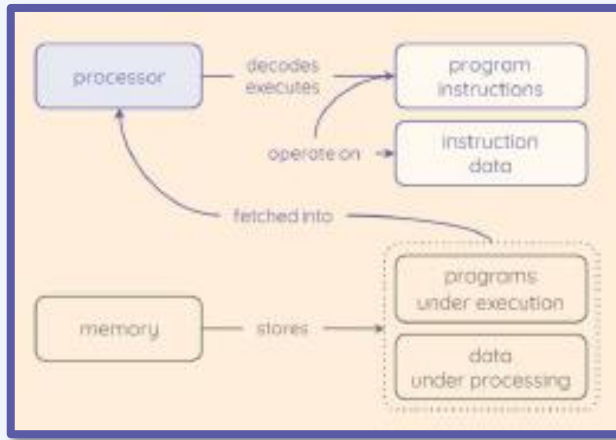
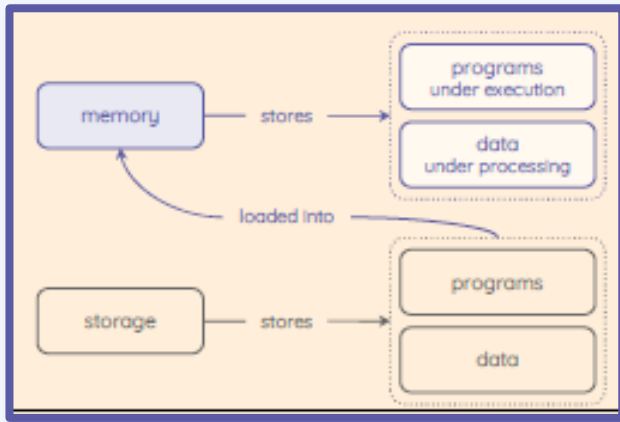


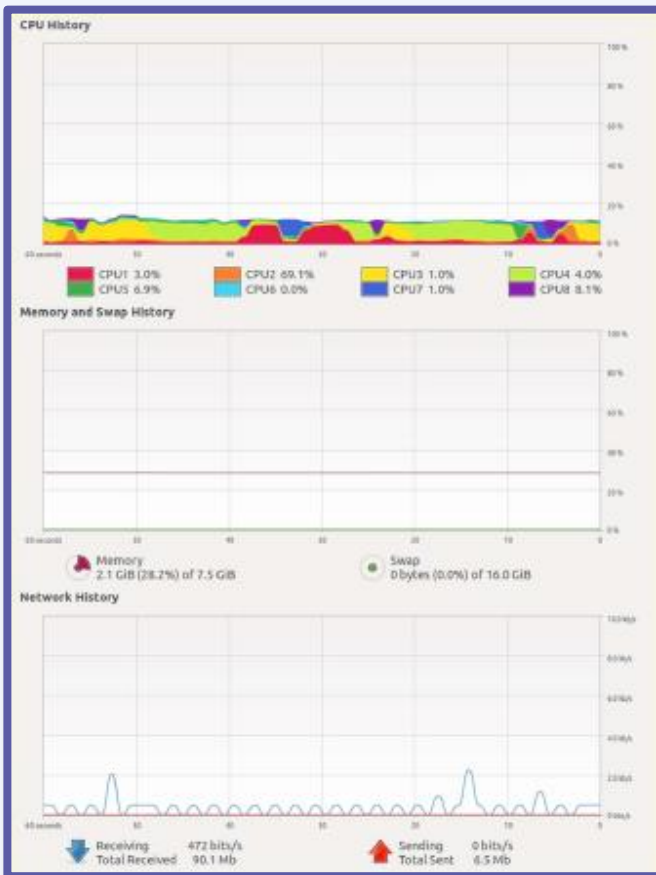
Year 8 Computer Science Layers of Computer Systems Knowledge Organiser

Key Word	Definition
Computer	General-purpose machine designed to automate any process, as specified by a program.
System	A set of things working together as parts of a mechanism.
Device	A piece of equipment or a mechanism designed to serve a special purpose or perform a special function.
Program	A series of coded software instructions to control the operation of a computer or other machine.
Software	The programs and other operating information used by a computer. Instructions: Orders given to a computer processor by a computer program.
Instructions	Orders given to a computer processor by a computer program.
Data	Information that is stored and processed digitally on a computer.
Hardware	The physical components of a computer system – any component that you can touch.
Software	The programs and other operating information used by a computer.
Input	Data received by a system.
Output	Data transmitted by a system.
Program	A series of coded software instructions to control the operation of a computer or other machine.
Processor	The component that executes program instructions.
Memory	Stores the programs and data currently in use.
Storage	The set of components that stores programs and data.
Communication	The exchange of data between components
Architecture	The organisation of the components which make up a computer system.
Operating System	A set of programs that controls the operation of a computing system.

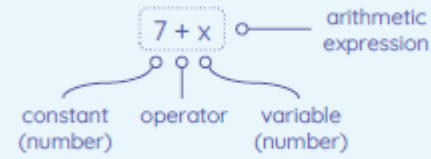
Year 8 Computer Science Layers of Computer Systems Knowledge Organiser

Key Word	Definition
Logical Operator	A process used to compare logical expressions that returns a result of True or False.
NOT	A Boolean operator which turns True to False and vice versa.
AND	A Boolean operator which returns True only when both inputs are True
OR	A Boolean operator which returns True when either or both of the inputs are True.
XOR	A Boolean operator which only returns True when exactly one of the inputs is True.
Logical Expression	A statement that can either be True or False.
True	Used to represent the value 1 in Boolean logic.
False	Used to represent the value 0 in Boolean logic.
Truth Table	A way of summarising and checking the logic of a circuit.
Logic Gate	A device that acts as a building block for digital circuits, that performs basic logical functions.
Logic Circuit	A combination of logic gates to create an electronic circuit used in computers to perform a logical operation.
Artificial Intelligence	Any machine that performs tasks that typically require intelligence in humans.
Machine Learning	An AI technique that teaches computers to learn from experience
Data	Information that is stored and processed digitally on a computer.
Training	The process of teaching an AI system to perceive, interpret and learn from data.
Testing	Analysing code and finding possible edge cases and inputs that may cause defects
Programming	Acquiring data and creating rules for how to turn it into actionable information.
Free and Open Source Software	Allows users and programmers to edit, modify or reuse the software's source code.



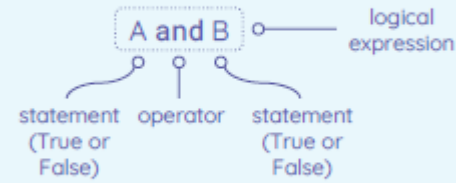


Arithmetic operations, such as addition, operate on numbers.



The result, the value of an arithmetic expression, is also a number.

Logical operations operate on statements that are **True** or **False**.



The result, the value of a logical expression, is either True or False.



Firefox
browser



Chromium
browser



Scratch
programming



LibreOffice



VLC
media player



GIMP
image editing



Audacity
audio editing



Inkscape
vector graphics



Linux
OS



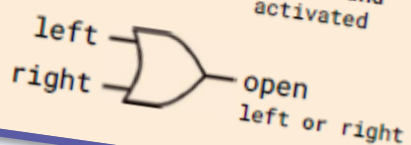
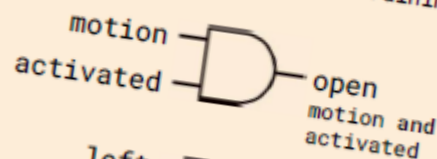
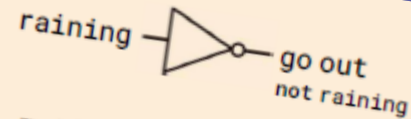
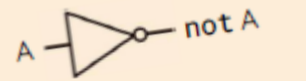
Ubuntu
OS



Android™
OS



Python
programming



The AI Effect



by Microsoft
Corporation



Android™
based on Linux
by the Open
Handset Alliance



by Apple Inc.

iOS

by Apple Inc.

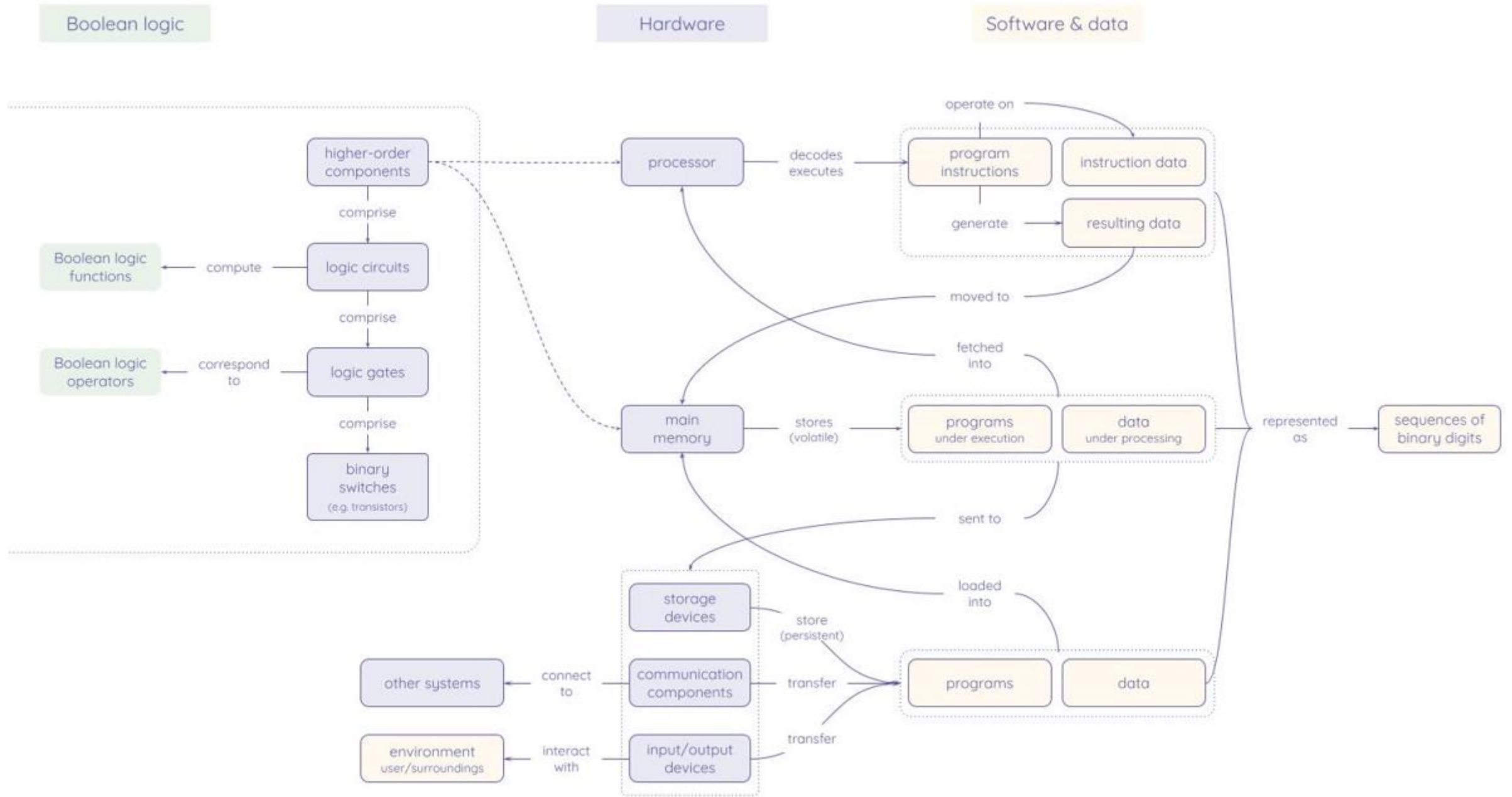


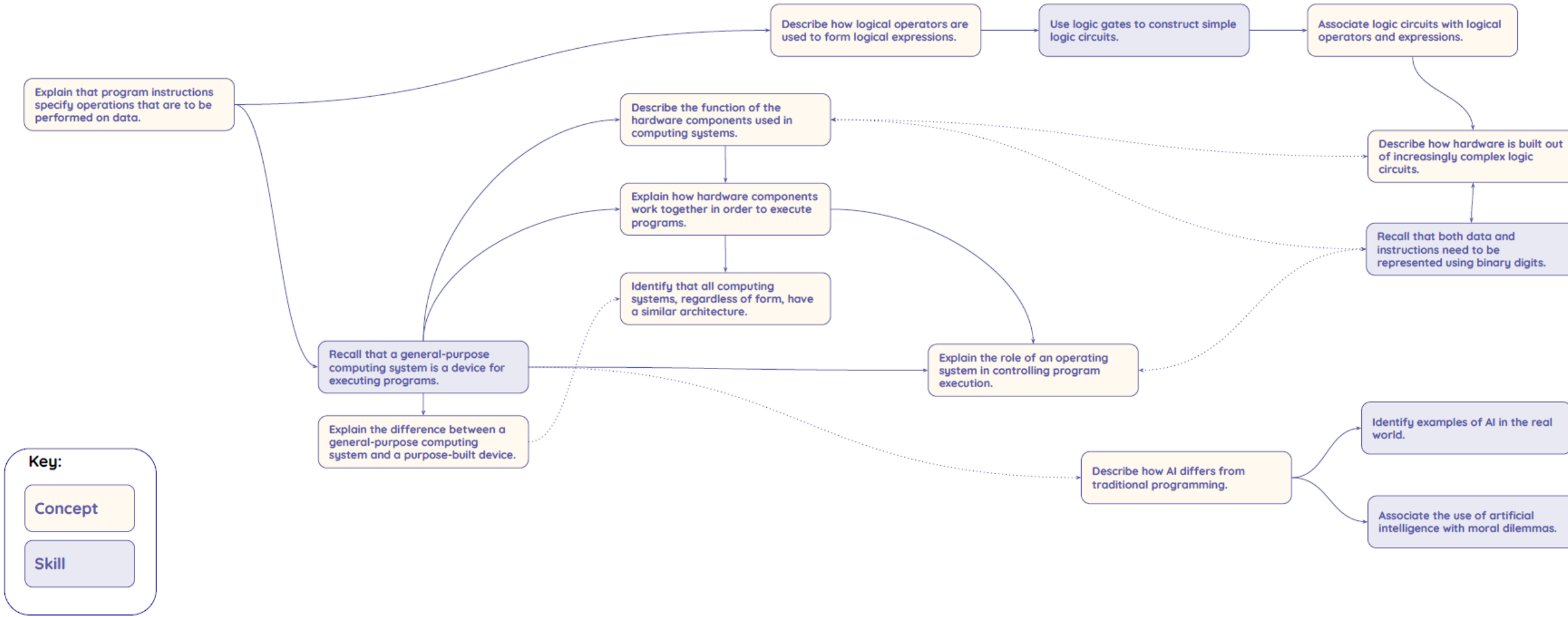
a Linux distribution
by Canonical



Raspberry Pi OS

based on Debian Linux
used on Raspberry Pi computers





In this unit, you...

Investigated different layers of computing systems:

- From programs and the operating system
- To the physical components that function together as a system to execute these programs
- To the fundamental binary building blocks that these components consist of

Software

Hardware

Logic