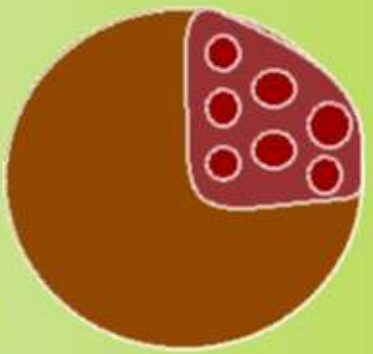

Computer Systems

INPUT

PROCESS

OUTPUT

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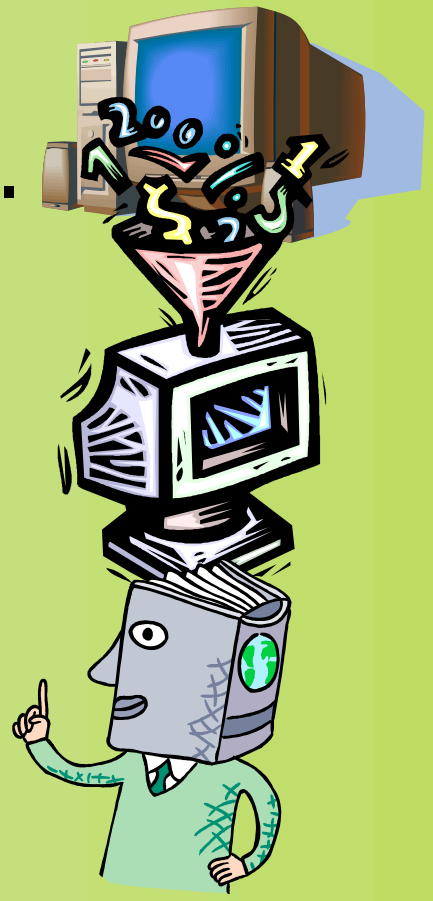
What is a computer system?

- A computer system is a mix of electronic hardware and software.
- It accepts *data* as input and processes it to provide us with an output, such as *information* or a physical action.
- But it can only follow the instructions that we give it.



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Computer systems in the home

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Computer systems out and about

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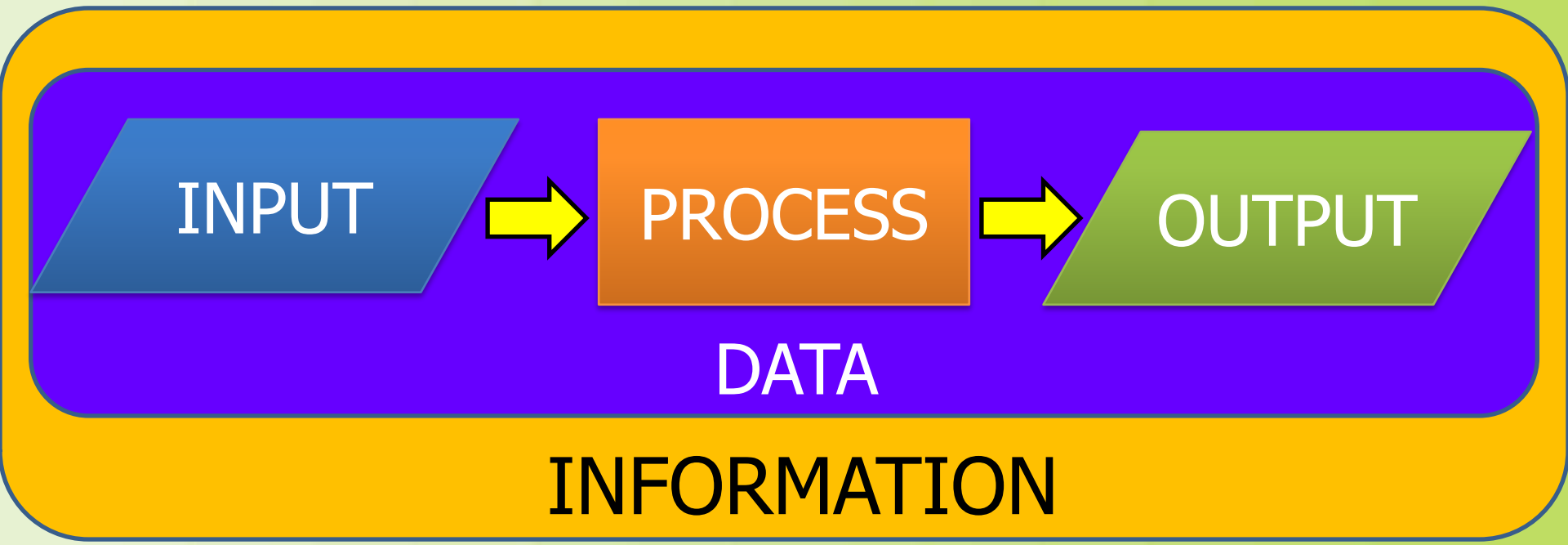
Input, Process and Output

- A computer system is made up of three main parts.



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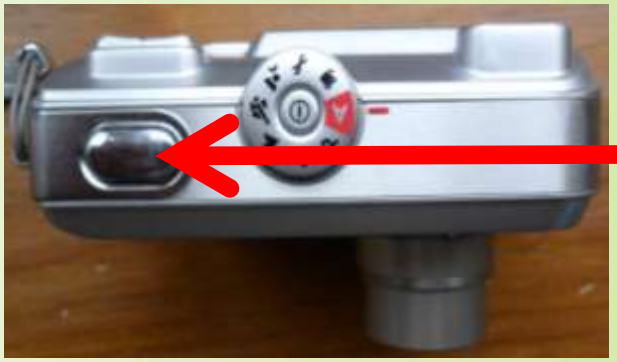

Input

Push the ‘capture’ button to take a photograph.

Process

Light is captured through the camera lenses and transformed to create a digital image.

Output

The digital image is shown on the monitor screen.

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INPUT

- A computer system accepts *data* and *instructions* at the input stage.
- Input devices, such as a keyboard or sensor, are used to collect and provide the computer system with *data* or *instructions*.

Motion sensor

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Common input devices

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Data

- *Data* is a collection of facts about something or somebody.
- It could be a collection of numbers, letters, dates, images and sound.
- For example, your height, age, shoe size, hair colour and gender etc is data.
- This *data* can be used in many different ways to provide *information* about you.

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PROCESS

- *Data* and *instructions* are processed by a *central processing unit* (CPU).
- A *CPU* is the computer system's brain that can transform *data* from input devices into useful *information* or a physical action.
- The CPU can process data really fast but it can't think for itself. It only does what it is told to do by following *instructions*.

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Computer processing

INPUT → PROCESS →

Barcode Number	Product	Image	Price
0235836974128	Tomatoes		£1.59
0124589347502	Onions		£0.49
0123456789012	Peppers		£1.15
0824589812571	Potatoes		£1.99

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Information

- *Data* becomes information when it is put into context (i.e. given meaning).
- A barcode number is just *data* on its own. So is the product name, image and price.
- But this data becomes meaningful *information* when the *data* is put together.
- When a barcode is scanned, we can find out what item it is, what it looks like and how much it will cost.

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OUTPUT

- An output is when the computer communicates the results of the processed *data*.
- The *data* has been transformed into useful *information* that we can see and use.
- This *information* is usually shown on a display monitor or paper printout and it should be easy for us to understand.

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Common output devices

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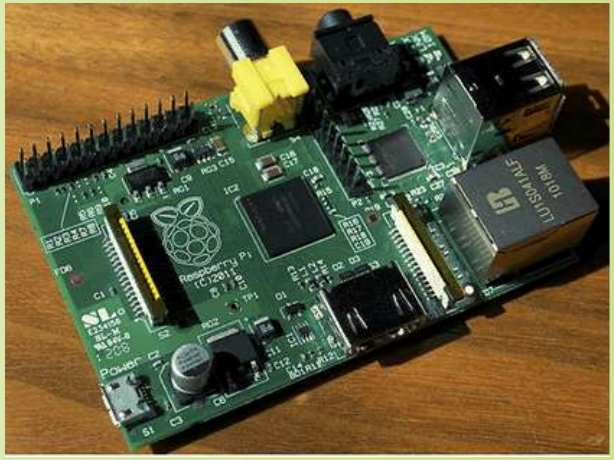
Computer systems are just…

INPUT → PROCESS → OUTPUT



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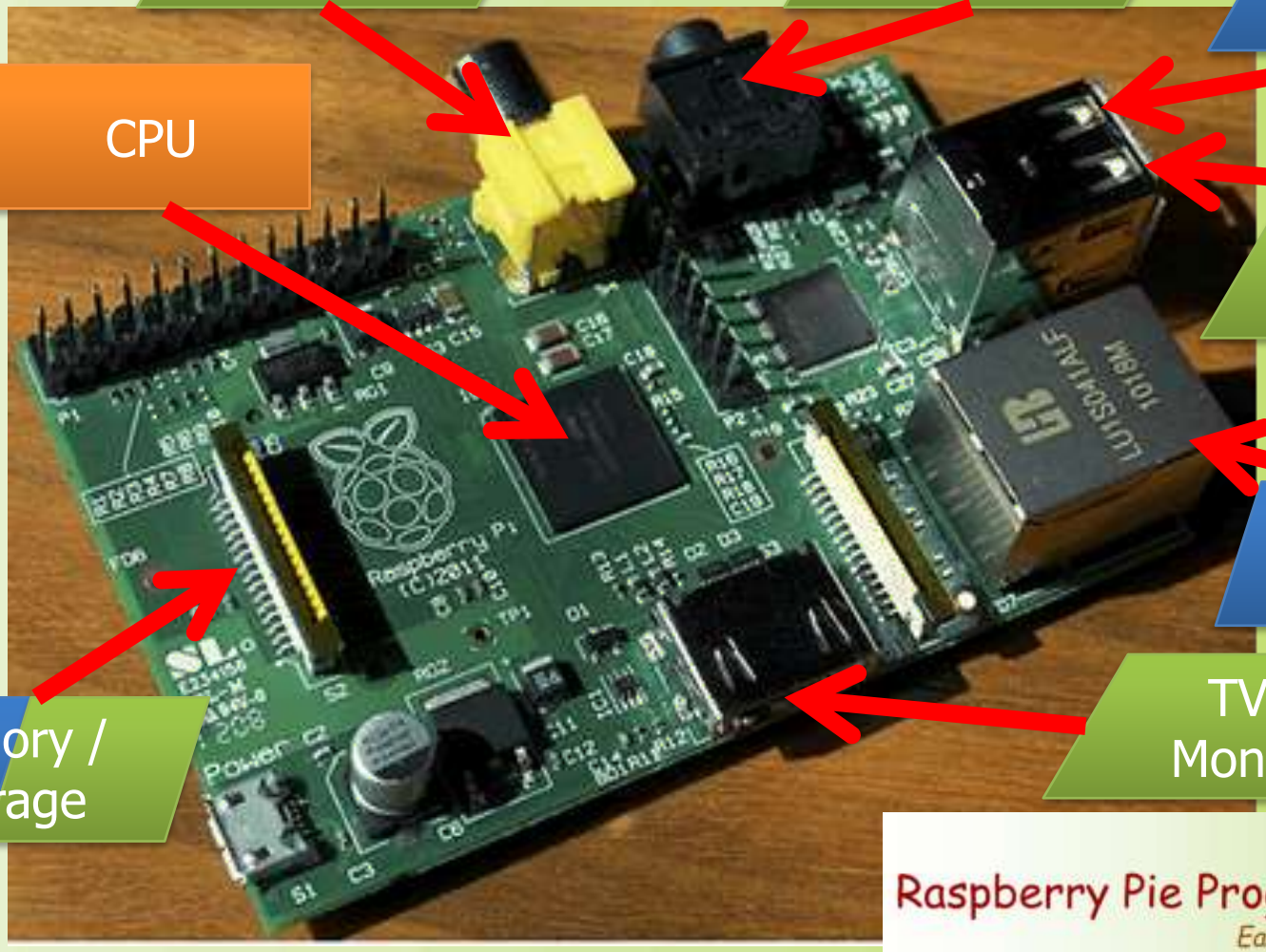
Raspberry Pi Computer



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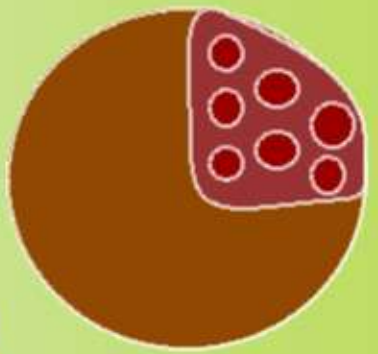

Computer Systems

Created by C Corbett