Bits and Bytes

The size of everything in computers is usually measured in **Bytes**

We'd say: "this file is 17 Bytes big"

Bits and Bytes

The size of everything in computers is usually measured in **Bytes**

We'd say: "this file is 17 Bytes big"

Remember: a **Byte** is **8 bits** (8 binary digits)

A **Byte** gives us the numbers between 0 and 255. That's 256 numbers

Bits and Bytes

- my phone has 64,000,000,000 Bytes storage
- my computer at home has 1,000,000,000,000 Bytes storage
- the latest FIFA video game is 81,300,000,000 Bytes to download
- student shared resources has 2,320,000,000,000 of free space

These numbers are too big for humans to use easily!

Bits and Bytes

Instead we use a set of prefixes to help

TeraByte (TB)

KiloByte (KB)

MegaByte (MB)

GigaByte (GB)

Bits and Bytes

Which is biggest?

1. my hard drive has 1TB of storage
2. my solid state drive has 256GB of storage
3. on my phone, YouTube takes up 628MB of storage space but the camera app uses 561KB
4. my phone has 64GB of storage

Bits and Bytes

The size of everything in computers is measured in **Bytes**

Remember: a Byte is 8 single binary digits

Term	Abbrv.	Prefix	Meaning	Number of Bytes	0s
Byte	B			1 Byte	
KiloByte	KB	Kilo			
MegaByte	MB	Mega			
GigaByte	GB	Giga			
TeraByte	TB	Tera			

Bits and Bytes

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Term	Abbrv.	Prefix	Meaning	Number of Bytes	0s
Byte	B			1 Byte	
KiloByte	KB	Kilo	Thousand	1,000 Bytes	
MegaByte	MB	Mega	Million	1,000,000 Bytes	
GigaByte	GB	Giga	Billion	1,000,000,000 Bytes	
TeraByte	TB	Tera	Trillion	1,000,000,000,000 Bytes	

Bits and Bytes

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Byte	B			1 Byte	0
KiloByte	KB	Kilo	Thousand	1,000 Bytes	3
MegaByte	MB	Mega	Million	1,000,000 Bytes	6
GigaByte	GB	Giga	Billion	1,000,000,000 Bytes	9
TeraByte	TB	Tera	Trillion	1,000,000,000,000 Bytes	12

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

Kilo
Mega
Giga
Tera

How many kilobytes are there in a megabyte?

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

Kilo
Mega
Giga
Tera

How many kilobytes are there in a megabyte?

1 row difference = 1000 KB in 1 MB

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

How many MB in a GB?

Kilo
Mega
Giga
Tera

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

Kilo
Mega
Giga
Tera

How many MB in a GB?

1 row difference = 1000MB in a GB

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

How many KB in a GB

Kilo
Mega
Giga
Tera

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

Kilo
Mega
Giga
Tera

How many KB in a GB

2 rows difference = 1000 x 1000 = 1000000KB in a GB

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

Kilo
Mega
Giga
Tera

I have a file that is 24,000,000 KB

How big is it in MB?

How big is it in GB?

Bits and Bytes

Converting:

Each row in the table is a jump of 1000

Kilo
Mega
Giga
Tera

I have a file that is 36 GB

How big is it in MB?

How big is it in KB?

Bits and Bytes

Converting:

Remember, 1 Byte = 8 bits

I have a file that is 7 Bytes

How big is it in bits?

Kilo

Mega

Giga

Tera

Bits and Bytes

Converting:

Remember, 1 Byte = 8 bits

I have a file that is 32 bits

How big is it in Bytes?

Kilo

Mega

Giga

Tera

Bits and Bytes

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