Staying Safe Online

Mr Bateson

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Brief Introduction

- RAF Engineering Officer, 2006-11
- Cybersecurity Consultant, PwC and NCC Group, 2011-16
- Head of Cybersecurity, McLaren, 2016-20
- Head of Information Security, Slaughter and May, 2020-now
- My job involves some of the topics covered in this presentation






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Before We Start

- This session isn’t intended to scare you.
  - Perhaps just to make you think and challenge your view of things.
  - We’ll do our best to make it fun.

- There’s no such thing as a stupid question – you can ask anything (either in this session or afterwards).

- This session isn’t on any exam.
- These slides are available at www.timbateson.co.uk/rafac/

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Warm Up Exercise

- Work in two teams.
- You'll need some post-it notes or paper, and pens.
- You have 2 minutes (from "go") to write down lots of:

Team 1	Team 2
Reasons why the internet is a good thing	Reasons why the internet can be a bad/scary thing

- Be ready to read out your ideas when time's up.

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2 minutes left…

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60 seconds left…

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30 seconds left…

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10 seconds left…

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Time’s up!

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Warm Up Exercise

- What did you come up with?

Team 1

Why is the internet a good thing?

Team 2

Why can the internet be a bad/scary thing?

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Warm Up Exercise

My thoughts – good stuff

- Answer any question quickly.
- Stay in touch with friends and family.
- Find like-minded people.
- Buy things easily & cheaply.
- Easy access to news and information is good for democracy.

My thoughts – bad stuff

- Can be used for good & bad.
- It's unregulated – very hard to take down bad content.
- Lots of bad material online.
- Criminals & terrorists can use the internet to organise.
- People say things they wouldn't say face-to-face.

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Things We'll Cover

- Online Privacy
- Online Safety
  - High risk activities
  - Cyberbullying
  - Illegal/nasty content
  - 'Fake news'
  - Internet/smartphone addiction
- Online Security
  - Malicious software
  - Phishing
  - Passwords
- Questions

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Online Privacy

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Online Privacy

- What types of personal information do you share online?

Name?	Birthday?	Favourite film / band / book / sports team?	Pet's name?	Home town/street?

- How many of these things:
  - Are your password for something?
  - Are things that your bank might use to check you're really you?
  - Might cause you embarrassment in future?
- Is answering quizzes that ask for these things a good idea?

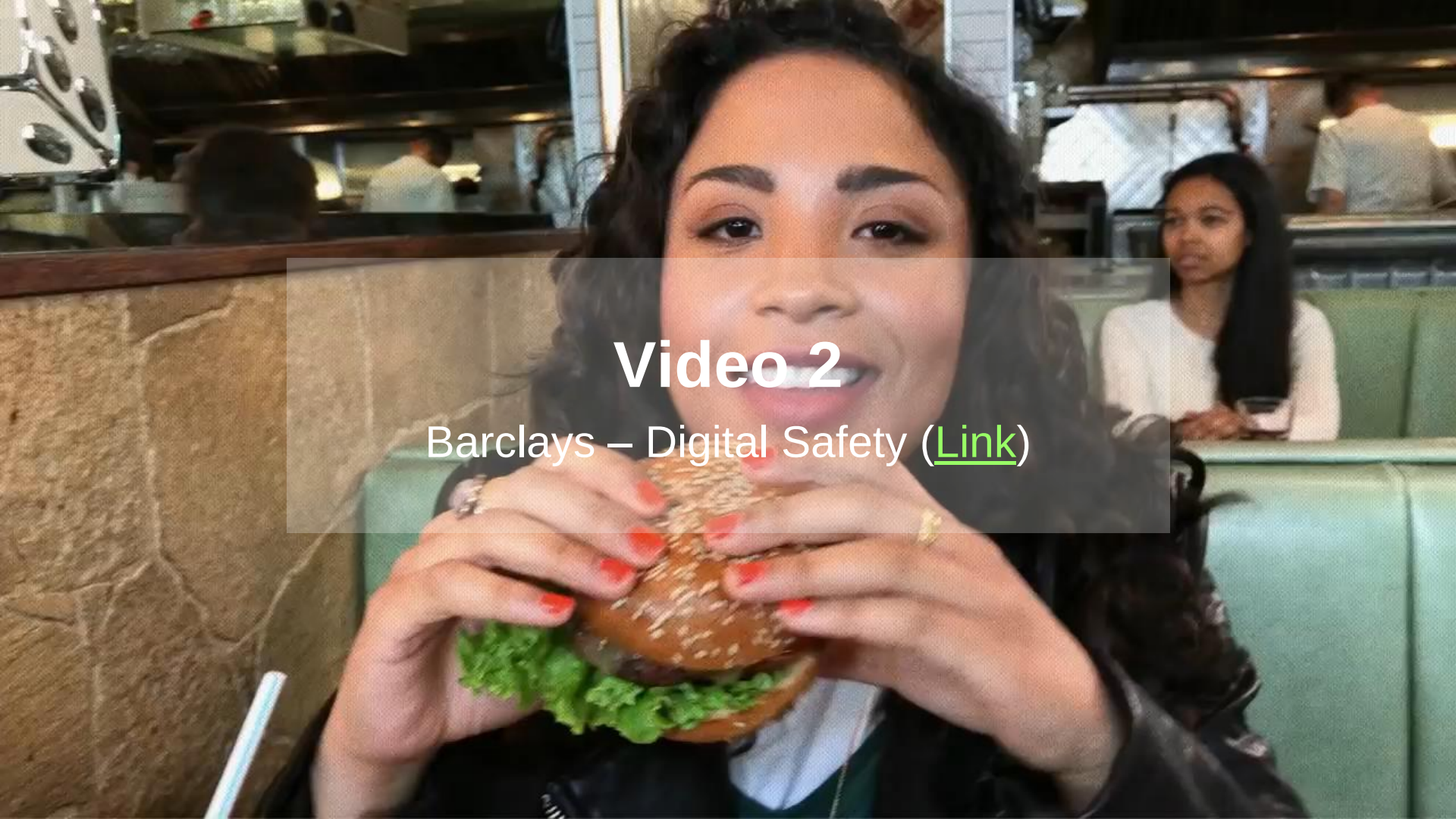
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Video 1

Action Fraud – How Private is Your Personal Information? (Link)


Video 2
Barclays – Digital Safety (Link)



Video 3

Tom Scott – I Know What You Did 5 Minutes Ago (from 2:42) (Link)

Online Privacy

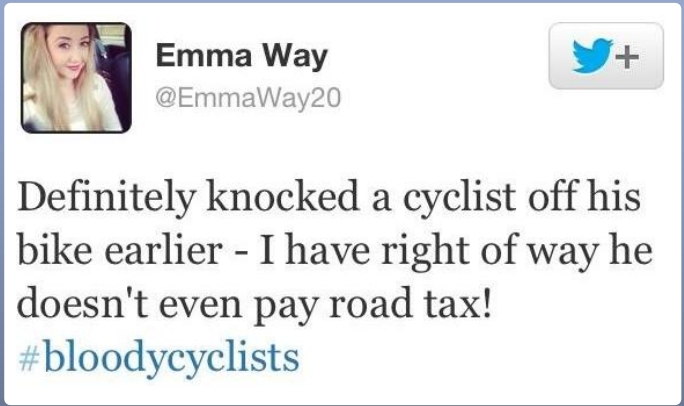
- How does Facebook make money? What does it sell?
- Facebook sells:
  - Advertising.
  - Your *attention*.
  - The opportunity to influence your *opinions* and your *decisions*.
- So are you Facebook's *customer*? Or Facebook's *product*?
- It's not always clear what's advertising and what isn't.
- It's not always clear how you might be being influenced.
- App permissions: does Angry Birds need your precise location?

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Online Privacy

- Should you post your every thought publicly (e.g. on Twitter)?





- Convicted at court. Fined £637 & 7 penalty points. Lost her job.
- Moral of the story: think before you post.
- Anything you post can be copied and re-posted.

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Online Privacy

Any questions on this section?

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Online Safety

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Video 4

Do You Know Who You're Meeting? (Link)

Video 5

Do You Know Who You’re Talking To?
(Link)

Video 6

Private Pictures Rarely Stay Private (Link)

High Risk Activities

- Is it a good idea to:
  - Meet people in real life who you've only met online?
  - Tell someone you only know online your home address or school?
  - Accept friend requests from people you don't really know?
  - Send your boyfriend or girlfriend nude photos?
- What are the risks?
  - Things might be shared publicly that you'd rather stayed private.
  - Unwanted contact (ranging from harassment to physical danger).
  - Identity theft / fraud.



All bad ideas

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Cyberbullying

- What types of thing define bullying/harassment?
  - “Any unwanted behaviour”.
- Who gets to define whether the behaviour is unwanted?
  - The person on the receiving end.
  - It doesn’t matter whether you think it is ‘okay’ or not.
  - If the recipient wants it to stop, then it must stop.
- You can get into lots of trouble for bullying someone online.
- If someone is bullying you or someone else then speak to a parent, teacher or member of staff.

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Illegal/Nasty Content

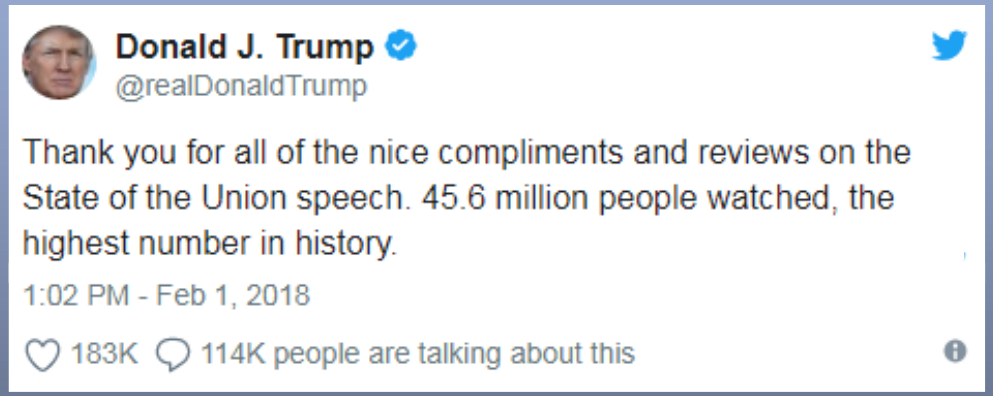
- The internet is unregulated, so there's lots of nasty content.
- Some examples:
  - Pirated films, music, computer games and other software.
  - Hate speech – e.g. racist, sexist, religionist or other "ist" content.
  - Graphic violence – people/animals being killed or seriously injured.
  - Terrorist propaganda and training materials.
  - Criminal materials for sale – drugs, stolen credit cards, computer viruses, hacking tools, hitmen for hire.
- Accessing some types of content can get you in a lot of trouble.

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‘Fake News’

- Is everything on the internet true?



1. George W. Bush – 2002
2. George W. Bush – 2003
3. Barrack Obama – 2010
4. Bill Clinton – 1998
5. Bill Clinton – 1994
6. Donald Trump – 2018 ⬅

- Anyone can set up a website.
- Anyone can pay Google to list it high up on search results.
- The internet tends to feed us things that reflect our worldview.

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Video 7

The Flat Earth Society (Link)

Internet/Smartphone Addiction

- How long should you spend online or using screens each day?
  - There's no 'right number'. It depends on you.
- You shouldn't spend so long that you:

Get headaches or feel ill	Don't sleep properly	Miss meals	Can't concentrate on schoolwork	Let real-world relationships suffer

- If you get grumpy when people tell you to stop, that's a red flag.

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Online Safety

Any questions on this section?

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Online Security

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Malicious Software

- *Malware* is a general term for malicious software (e.g. viruses).
- Some of the things that malware can potentially do:

Record everything you type – e.g. passwords and bank details	Spy on you via camera/mic/GPS (*spyware*)	Steal your files/contacts	Hold your files or device to ransom (*ransomware*)
Destroy all your files / kill your device	Use your device to send spam or attack websites (make it part of a *botnet*)	Use your device to mine cryptocurrency (*cryptojacking*)	Use your device to store/host/share illegal content

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Malicious Software

- The main ways malware gets onto your device:
  - Dodgy downloads (e.g. ‘free’/pirated/imposter software).
  - Dodgy links (*drive-by downloads*).
  - A genuine website you use gets hacked (a *watering hole attack*).

- Let’s look at an example…

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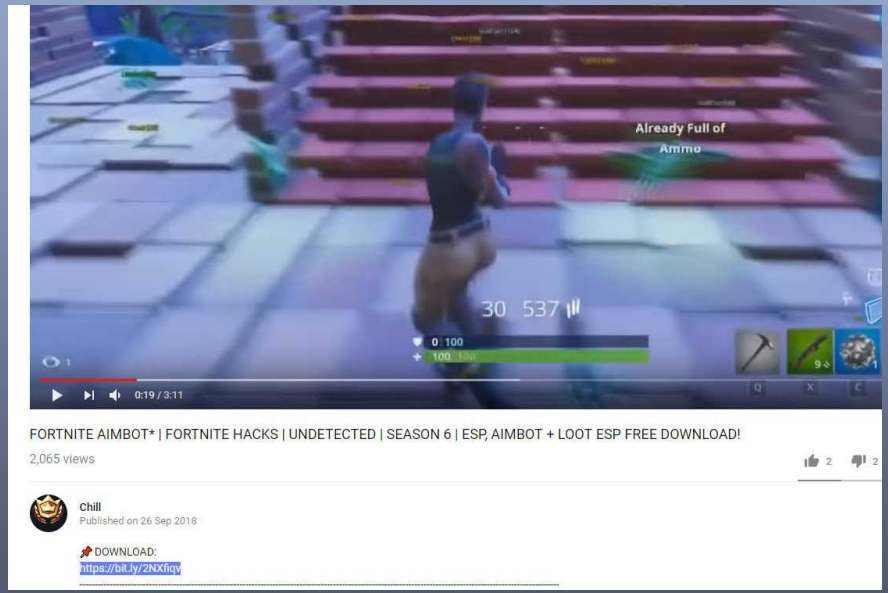
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Malicious Software – Example

- There are lots of YouTube videos promoting Fortnite ‘aimbots’ and other ‘hacks’.



- People click the download link under the video…

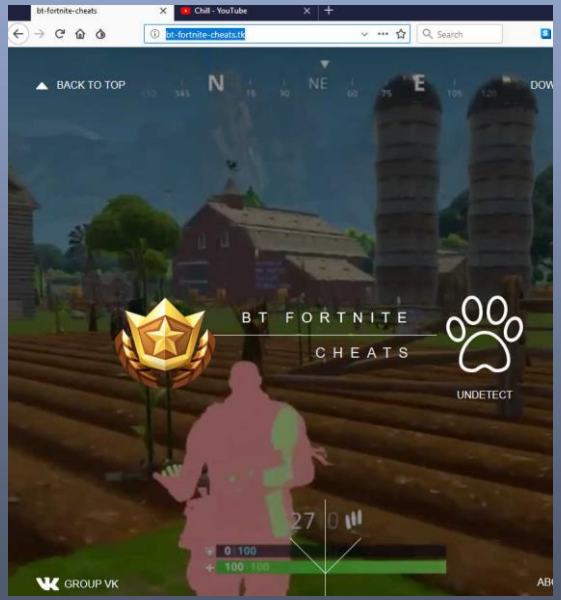


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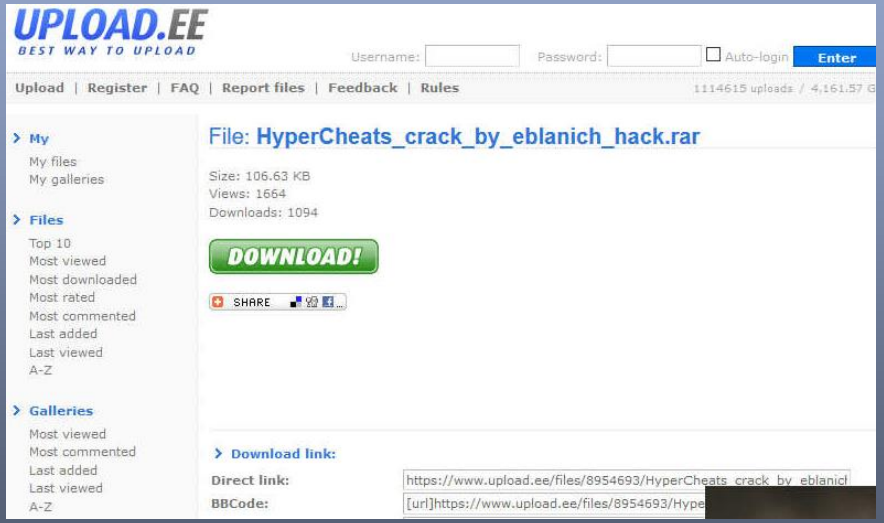
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Malicious Software – Example

- It takes them to a ‘Fortnite Cheats’ website…



- Where they can download a range of ‘cheats’…

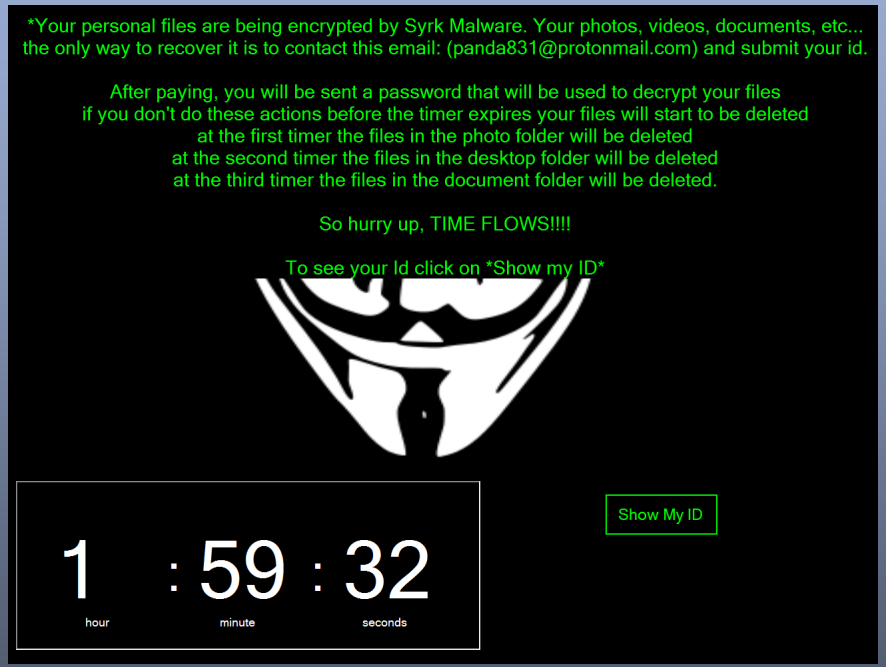


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Malicious Software – Example

- Sometime after installing the cheat…
- Typical ransom: £500.
- Paying the ransom funds criminals/terrorists…
- …and doesn't guarantee that you'll get your files back.

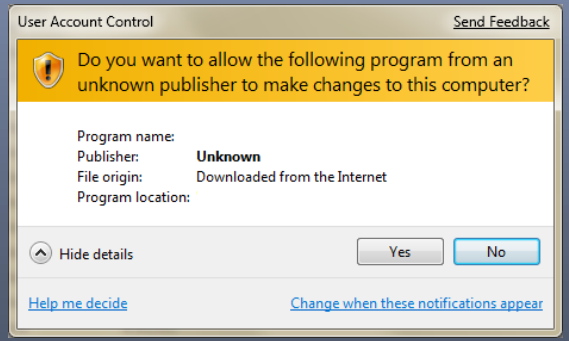


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Malicious Software

- How to avoid this happening to you:
  - Don’t download dodgy software.
  - Check questionable download links using virustotal.com.
  - Check other questionable links using urlvoid.com.
  - Use anti-virus software on all your devices (e.g. Bitdefender Free).
  - Install updates as soon as possible.
  - Be suspicious when apps ask for permission to do things – particularly if you weren’t expecting it.



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Phishing

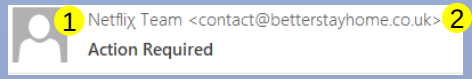
- Phishing is where someone tries to trick you in to:
  - Clicking on a dodgy link; or
  - Replying with sensitive information.
- If you click on an unsafe link:
  - A fake login page might try to steal your password.
  - You could download malware.
- How to avoid it:
  - Don’t click on links in messages you weren’t expecting.
  - Enter the genuine website’s address in your browser manually.

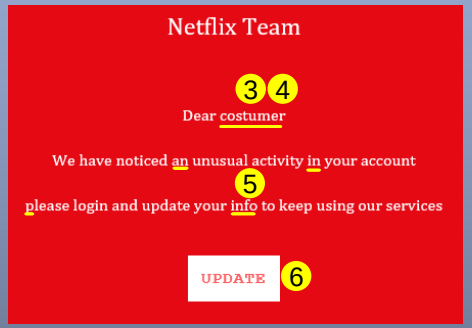
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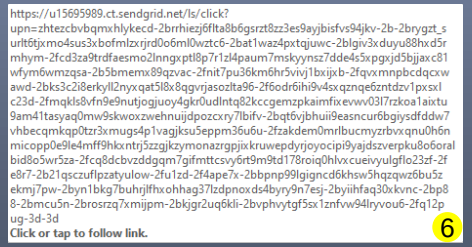
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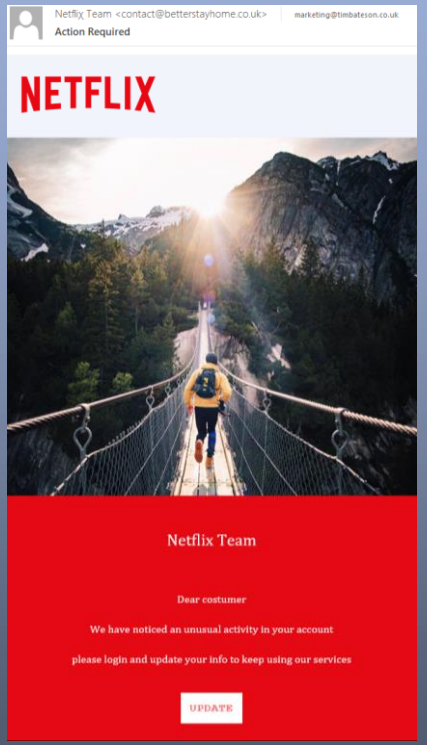
Phishing – Example

- I received this last week.
- Signs it's not real:
  - I don't use Netflix.
  - Sender display name.1
  - Sender e-mail address.2
  - Generic salutation.3
  - Poor spelling4 & grammar.5
  - Unusual font.
  - Horrible 'update' link.6









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Passwords

- Most people have lots of passwords (e.g. I have 158).
- People can’t remember lots of different passwords, so they:
  - Pick very predictable passwords, like “123456” or “password123”.
  - Use the same password(s) for lots of different things.
- Issues:
  - If your password is predictable, then someone will guess it.
  - If you re-use a password on lots of sites, and one of those sites is hacked, then all your accounts with that password are at risk.
- How do we do this better?

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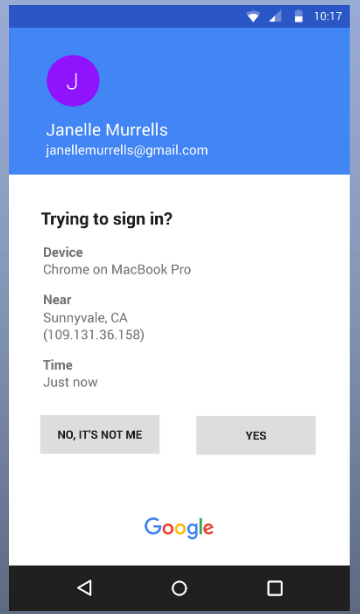
Video 8

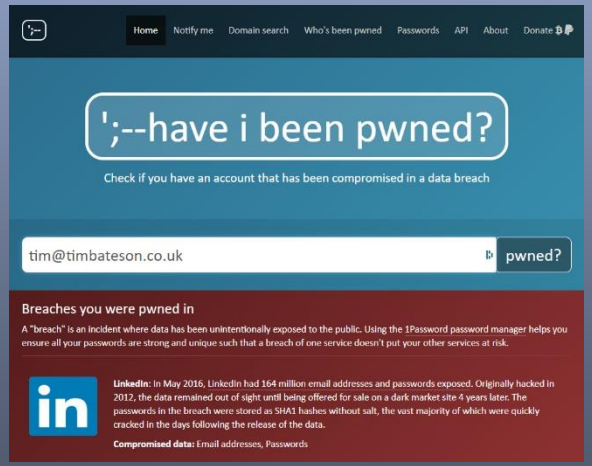
Password Managers (Link)

Passwords

- Use a password manager (e.g. Dashlane or LastPass).
- Use 2 factor authentication wherever it is available.
- Check your e-mail address at haveibeenpwned.com and sign up for ‘Notify Me’.







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Online Security

Any questions on this section?

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Summary

- The internet is largely a good thing, but there are some risks.
- Don’t overshare.
  - Once something’s on the internet, it’s there forever.
  - Check your privacy settings and only ‘friend’ with people you trust.
  - Get in good habits now, so you’re at less risk of fraud in later life.
- Don’t go to meet people in real life who you only know online.
- Speak to parents/teachers/staff if you have concerns.
- Avoid dodgy downloads and links in unexpected e-mails.
- Use a password manager and two factor authentication.

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Any Questions?

(Feel free to ask in private if you prefer)

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