Computing

Lesson 3: Automated Cybercrime

KS4 Security

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¹ Materials from the Teach Computing Curriculum created by the National Centre for Computing Education



Task 1 - Ransomware (Wannacry)

Start by watching this short video below:



	Wana Decrypt0r 2.0			×
	Ooops, your files have been	encrypted!	English	`
sed on 5 377	 What Happened to My Computer? Your important files are encrypted. Many of your documents, photos, videos, database accessible because they have been encrypted. May recover your files, but do not waste your time. No our decryption service. Can I Recover My Files? Sure. We guarantee that you can recover all your finot so enough time. You can decrypt some of your files for free. Try me But if you want to decrypt all your files, you need You only have 3 days to submit the payment. After Also, if you don't pay in 7 days, you won't be able We will have free events for users who are so poor How Do I Pay? 	es and other files are i ybe you are busy look body can recover you files safely and easily ow by clicking <decr to pay. r that the price will be to recover your files ir that they couldn't p</decr 	no longer ting for a way to ur files without . But you have ypt>. e doubled. forever. ay in 6 months. ut bitcoin>.	
37	Please check the current price of Bitcoin and buy click <how bitcoins="" buy="" to="">. And send the correct amount to the address specific After your payment, click <check payment="">. Best CMT from Mondents Peders Bitcoin Send \$300 worth of bitc Bitcoin Accepted Here</check></how>	ormation, citck (1000 some bitcoins. For mo fied in this window. time to check: 9:00ar oin to this address w519p7AA8isjr6SMv	m - 11:00am	opy
	Check Payment	Decr	ypt	

Wannacry, Source:

:securelist/blog/incidents/78351/wannacry-ransomware-usedin-widespread-attacks-all-over-the-world/



Task 1 - Ransomware (Wannacry)

In this short video (between 10:40 and 12:51), Computerphile explains why the exploit was successful. Watch the video and answer the following questions:

How did WannaCry spread?	
What type of malware is WannaCry?	
Who can share the blame for the spread of WannaCry?	





Task 2 - Brute force: Passwords

For this activity you will need to use/run and amend the following python program to be able to answer the questions on the following slides:

repl.it/@NCCE/brute-force

Please ask a parent or carer for permission before attempting this task. Oak National Academy are not responsible for any third party content.



The program has been set to output how many attempts it took to find the password (set on line 11), as well as how long it took the computer to do it.

Run the program.

Follow the instructions on the next slides and note down the results.



Instruction

Number of attempts

Run the program with the password 'ab'

Change the password to 'abc'

Change the password to 'Abc'

Change the password to 'Abcl'

Time taken (round up to two decimal places)





The program has been set to check only for ASCII letters and digits. Modify line 15 of the program so that it checks for punctuation and any white space in the password (white space is an empty value in the password, such as a space).

Line 5 should now look like this:

15 print(guess_password(password, extended))



Run your program.

Follow the instructions below and note down the results.

Instruction

Number of attempts

Run the program with the password 'abc'

Change the password to 'Ab1'

Change the password to 'Abcl?'

Change the password to 'AB C 1'

Time taken (round up to two decimal places)



Thinking about the exercise that you just completed, what simple password rules would you set yourself to reduce the chance of a brute force attack being successful?

What rules do you think a company might place on their login system to reduce the chance of a brute force attack being successful?



Task title

- Info for students to complete the Option task.
- Images, will be removed from this if printed.

• Optional placeholder for image



Resume the video now





