



## Overview

In this assignment you will learn why it's important to secure information on the Internet and how to help protect your own personal data.

## Assignment Preparation

Make a copy of this document to record your answers. Rename your copy of the document to **lastname\_cyber**, where **lastname** is your last name. You will **place all answers and screenshots** in this Google Document. The steps below will tell you what to put in your answer document - use the spaces provided to insert your answers accordingly.

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## Part 1: Khan Academy Practice Sets

### DO THE FOLLOWING:

→ Review the Khan Academy material [PII \(Personally Identifiable Information\)](#).

→ Complete the following practice set:

- Practice: [PII \(Personally Identifiable Information\)](#)



Take a screenshot of the results page including your username, the practice set title, and your score showing at least 3/4 correct for each practice set (see example below).

[Insert screenshot here]

### DO THE FOLLOWING:

→ Review the Khan Academy article on [Phishing Attacks](#)

→ Complete the following practice set:

- Practice: [Phishing Attacks](#).



Take a screenshot of the results page including your username, the practice set title, and your score showing at least 3/4 correct for each practice set (see example below).

[Insert screenshot here]

The screenshot shows the Khan Academy website for the 'Bits (binary digits)' practice set. The top navigation bar includes 'Courses', 'Search', a magnifying glass icon, the Khan Academy logo, a 'Donate' button, and a user account section with the username 'jwbarrett' and an 'Assign' button. A red box highlights the 'username' field, with an arrow pointing to it from the text 'username'. The main content area has a blue header with the title 'Bits (binary digits)' and a red box around it, followed by a red arrow pointing to the text 'Practice set title'. Below the title is the text 'AP.CSP: DAT-1 (EU), DAT-1.A (LO), DAT-1.A.2 (EK), DAT-1.A.3 (EK)'. There are social sharing links for Google Classroom, Facebook, Twitter, and Email. On the left, a sidebar shows a navigation tree for AP®/College Computer Science Principles, with 'Bytes' highlighted and a red box around 'Practice: Bits (binary digits)', which is also labeled 'Practice Set' with an arrow. The main content area features a dark blue background with three cartoon characters (two blue, one green) and the text 'Keep going. Keep growing.' with a flexed bicep emoji. A red box highlights the score '4/4 correct | 120 energy pts', with an arrow pointing to the text 'Score showing at least 3/4 correct'.

## Part 2: Password Strength

Do you know the key characteristics of a strong password? Do you understand why passwords are so critical and where they are used in our world?

### DO THE FOLLOWING:

- Use the [How Secure is My Password](#) site to respond to the prompts below. Use the tables provided to record your responses.

**⚠ Caution** It is good practice to NOT enter any passwords that you actually use in sites that promise to tell you how strong your password is.

The screenshot shows the homepage of the 'How Secure Is My Password?' website. The header is blue with white text. Below the header is a large input field containing a password consisting of several dots ('.....'). To the right of the input field, text states 'It would take a computer about 1 month to crack your password'. At the bottom of the page, there is a link to 'The #1 Password Strength Tool. Trusted and used by millions.'

	Password	Time-to-crack
Create an <b>8-character</b> password using only <b>lowercase characters</b> (a-z), for example, <i>rainbows</i>		
Create an <b>8-character</b> password using <b>any characters</b> (uppercase, lowercase, numbers, symbols - use at least one of each), for example, <i>R4!nB0w5</i>		
Create a <b>16-character</b> password using only <b>lowercase characters</b> (a-z), for example, <i>rainbowsinspring</i>		
Create a <b>16-character</b> password using <b>any characters</b> (uppercase, lowercase, numbers, symbols - use at least one of each), for example, <i>R4!nB0w5!nSpr!ng</i>		

#### DO THE FOLLOWING:

- Rate the passwords from the table above on a spectrum from least to more secure

	Least secure	Relatively more secure
Password		

#### Reflection Questions

- A. What seem to be the factors contributing to making a password difficult to crack?

- B. Which factor would you argue is more impactful in password creation than the other? Why? Use evidence from the password strength site to support your argument. Hint: *Think about if you would rather have a shorter password with special characters (R4!nB0w5) or a longer password without characters (rainbowsinspring).*

Activity adapted from <https://www.bitsnbytes.us.com/> (open source)

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## Part 3: Cyber Attacks

Thousands of cyber attacks are happening daily across the world and many of these attacks impact the websites that you use - whether you know it or not! One important aspect of cybersecurity is protecting websites from these types of attacks. Now that you've created your own website, think about how these attacks could impact you directly!

### **DO THE FOLLOWING:**

- ▶ Review the lesson video on [Cyber Security](#).

#### **DDoS Attack**

- A. In 1-3 sentences, explain what a DDoS attack is.

- B. Explain what would happen to your Google site if it were victim to a DDoS attack.

#### **Human Error**

According to the video, 90% of the time a system gets hacked, it's because of a simple mistake made by a human.

- C. In 3-5 sentences, describe how the digital security of an organization could be affected by the actions of its employees.

The video provides steps we can all take to protect ourselves.

- D. What security measures would you recommend to address the following scenarios based on factors such as efficiency, feasibility, and ethical impacts. Record your recommendations in the table below.

Scenario	Security Recommendation
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<p>An employee has been using the same 6 digit lowercase password for over 10 years! Due to a recent security breach, the organization is requesting that employees reset their password to regain access to the system. The employee wants to know if they can use the same password as before.</p>	
<p>Your friend receives an email from an address that she doesn't recognize. The email appears to be from a social media site asking her to login to her account using a link provided in the email. She's not sure if she should click on the link to login.</p>	
<p>Your teacher is prompted to install an important system security update on their computer, but they've been very busy and aren't sure if the update is really necessary, so they ignore it.</p>	

**DO THE FOLLOWING:**

- ▶ Review the lesson video on [The Internet- IP addresses and DNS](#).

### DNS Spoofing

- E. In 1-3 sentences, explain what DNS spoofing is.

- F. Explain what the impact would be if a hacker DNS spoofed your Google site.

**DO THE FOLLOWING:**

- 📖 Review the Khan Academy article on [Phishing](#).

### Phishing Attacks

- G. Explain how a hacker might use Phishing to compromise your Google site.

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## Part 4: Case Analysis - Location Tracking

Read the following article about location tracking and respond to the question prompts below:

**DO THE FOLLOWING:**

 Read: [This is How Hackers Use Location Tracking Against You](#) (2018)

- A. In 3-5 sentences, use an example from the case study to explain the privacy concerns related to the collection and generation of data through automated processes that may not be evident to users.

- B. The article references security issues with Facebook. Identify a different application and explain in 3-5 sentences how it could be used to obtain sensitive information.

- C. The article recommends several ways to protect yourself. In 3-5 sentences, describe the appropriate actions you would take in response to a hacker trying to access your information.

- D. What are the tradeoffs when selecting and implementing the cybersecurity recommendations provided in the article? Provide at least one example from the article.

Activity adapted from <https://cyber.org/> Cybersecurity course case study resources

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