



# Ethical Hackers: Protectors of the Cyber World

3383D - Orchard Hills Middle School





# Hello!

## We are Team 3383D

We are a passionate team who takes robotics very seriously. We will do our best this season and we will rise above all the other teams competing with us.





# Introduction

```
Vexcode(init);
```

```
//Initializing hack into the VEX IQ STEM Career Project  
start(blowing the judges away with our interesting STEM  
career);
```

```
stop(mistaking us for those dirty black hat hackers);
```

```
//We are true and ethical whenever we do anything within the  
realms of hacking
```

```
guess(Have you guessed what stem career we're talking  
about?);
```

```
//The infamous, interesting, and amazing STEM career  
called...Ethical Hackers.
```

```
start(Ethical Hacking STEM Career Project);
```





# Who are Ethical Hackers?

Let's Start With That



# Ethical Hackers

Ethical Hackers are people who are paid and trained to hack into online databases and online systems. The purpose of their complicated job is to find loopholes and cracks inside of companies and government data websites before real hackers do. This helps notify and alert the owner of the data so they can reinforce and fix their issue. Water slide testers have a similar job except for the fact that they test physical machines or attractions whereas ethical hackers test digital work.



# Who are Ethical Hackers

Some of the primary responsibilities for an ethical hacker are:

- Learn from hacking systems to make protection stronger for devices
- Protect vulnerable digital devices
- Protect against black hat hackers (hackers who hack for personal gain)
- Detects flaws in the system by sealing up loopholes
- Finds entranceways in the system







# The Difference

Ethical hackers are allowed to legally attempt to break into a system to test security purposes.





2

# Why did we choose this **Unique** STEM Career?

Why Ethical Hackers are important and unique





# Ethical Hackers Are Extremely Important and Unique.

## 1-Their Importance:


Without Ethical Hackers, our world would be full of weak systems and millions of hackers.

## 2- Extremely Unique:

The job of hacking ethically is extremely distinctive and different jobs compared to other stem careers making it a fun job to learn about.

## 3- Spreading the word:

Our team realized that even though, hacking for a good cause, isn't a popular occupancy with its importance and distinctiveness it is an extremely amazing job and should be spread around to more tech-related people.






3

# A Day in the Life of an Ethical Hacker

A small story to teach you about the life of an Ethical Hacker



"9:30am: I boot up my laptop to access my virtual machines (apps that act like full, separate computers) to run tests on them throughout the day. I can create, copy or delete a virtual machine in a few minutes."

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"10:00am: Team meeting to determine which tests to run. The kinds of tests I do change depending on the system I'm working on, but I mostly deal with web applications that access internal systems used by bank employees."

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"11:00am: I will poke around the site to see what it does and if I can 'break' anything. My work also involves capturing traffic, analysing HTML and other web code and writing reports about what I find."

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"12:30pm: I need a brain break from all the critical and creative thinking! Most days I'll have lunch and play cards or board games with my colleagues."

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"1:30pm: More system testing. We try to use the same tools as real-world attackers, which means my work computer is full of hacker tools!"

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"3:00pm: I take a small break; it's very flexible. It's good to be up and about as much as possible to counteract all the sitting I do!"

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"3:30pm: I research and read about the work other testers have done - it gives me ideas for my next tests."

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"5:30pm: I finish work. I might exercise and fulfil some of my hobbies. "



Source is cited in Citations Section







# The Relation

One large part of competitive robotics is the ability to code, otherwise known as, programming. With our experience in the coding field (which we gained from coding robots) we would be able to use our prior knowledge and apply it to ethical hacking. Ethical Hackers use the skill of coding and programming when doing their job and breaking into systems. In other words, coding robots in robotics helps us prepare and grow as ethical hackers.





5

# A New Era in Hacking

How we believe Ethical Hacking will evolve in the next decade.






# Evolving

We think that ethical hacking will evolve positively in the next few years for many reasons. For one, every year technology and robotics become a bigger part of our daily lives. As more and more databases and programs are developed, more dirty unethical hackers will keep causing destruction and corruption in our everyday lives. This will make it so that ethical hackers and their duties will become more important to the world and more people will populate the occupancy.

Another one of the main reasons it will evolve is because when cybersecurity gets more advanced hackers will also find new ways to hack into programs, and these programs can range from small things to government covert operations. Ethical hackers will be used to test out cybersecurity to see if it is protected.





6

# The Other Side

What exactly are Ethical Hackers fighting against?



# The Evil We Fight Against

Everyday millions of devices are hacked. Black hat hackers steal digital information for their own benefit. They steal personal information and go waltzing around the internet in your skin. Ethical hackers like Kevin Mitnick spend hours of their life working against black hat hackers. He and other Ethical Hackers are dedicated to preventing your information from being altered, or even stolen. Being a former black hat hacker, Kevin knows how dangerous it can be to have large pieces of data open to the wrong hands, and everyday tries to help keep that from happening.





## ATTACK ORIGINS

#	Country
340	China
298	United States
97	Netherlands
57	Canada
56	South Korea
50	Russia
48	Hong Kong
45	France
40	Sweden
32	India

## ATTACK TARGETS

#	Country
999	United States
54	Hong Kong
33	Portugal
29	Bulgaria
28	Canada
26	Turkey
26	Germany
23	United Kingdom
22	France
18	Singapore

# Map of Hacking Attempts

Every Day millions of data bases and programs every day are hacked into by black hat hackers(people who hack to hurt others or for their own benefit). Ethical Hackers will change this

Streaks – Hacking Attempts  
Encircled areas – Areas populated with the most Hackers

## ATTACKS

Timestamp	Attacker	Target	Type
	Organization	Location	Service
		IP	Port
2014-06-25 11:47:03.66	Hurricane Electric	Stanford, United States	NetController, ntp
2014-06-25 11:47:03.97	TOT Public Company	Thanyaburi, Thailand	unknown
2014-06-25 11:47:04.53	Webhosting.Net	Miami, United States	discard
2014-06-25 11:47:04.53	Webhosting.Net	Miami, United States	discard

## ATTACK TYPES

#	Service	Port
115	ssh	22
93	ms-term-services	3389
84	isakmp	500
70	microsoft-ds	445
50	http	80



7

## What Do Ethical Hackers Need?

The skills required to become an ethical hacker.





# The Skills Required to Become an Ethical Hacker

Some of the amazing and interesting skills that many ethical hackers have include:

**Patience**- An Ethical Hacker must have the patience to sit at a desk or computer for most of their everyday routine.

**Determination**- An Ethical Hacker looks for cracks in the system and must stay determined to try to crack the system.

**Liability**-An Ethical Hacker must not share any information he or she finds when hacking(except to the people they are working with). They must keep it all to themselves and not be pressured into sharing anything.

**Trustworthiness**- Similar to liability an Ethical Hacker must never continue to look through a system or data center once they hack into it. They must immediately tell an operator where the breach in the system is so they can fix it.





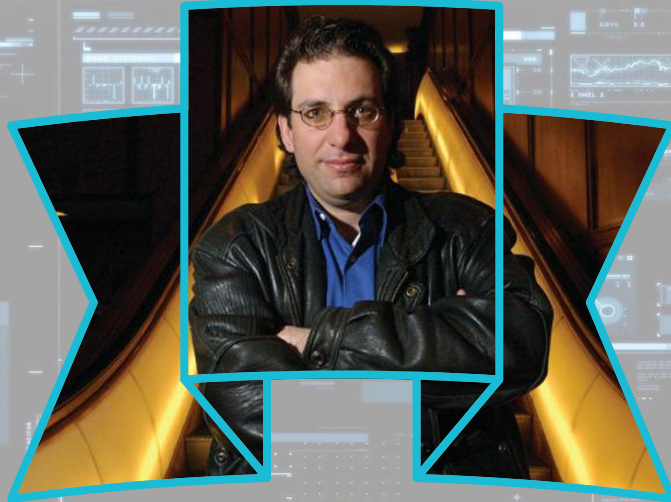
8

# Kevin Mitnick

A compelling biography on one of the most famous Ethical Hackers



# A Quick Biography About one of the Most Famous Ethical Hackers



Kevin Mitnick

Former black hat hacker Kevin Mitnick used to be a hacker who stole information from various iPhones and sold them on the black market. He started engaging in illegal activities at the age of 12. He made counterfeit bus tickets so he could ride any bus in LA for free whenever he wanted. After he was caught and 5 years of imprisonment, he looked in another direction. He now runs the security firm Mitnick Security Consulting, LLC. He is also the Chief Hacking Officer and part owner of the security awareness training company KnowBe4, as well as an active advisory board member at Zimperium, a firm that develops a mobile intrusion prevention system. So in short, he is now a white hat hacker, and now working on preventing the loss of private information.



# Citation Section

**Entry Title-** Ethical Hackers: Protectors of the Cyber World

**Entrants-** Kayden Pranata, Ayush Patel, Hasan Shoaib, Deven Mehta, and Michael Chang

**Team Number-** 3383D - Orchard Hills Middle School

## Sources:

1. A Day in the Life of an Ethical Hacker- [https://careerswithstem.com.au/cybersecuritycareers\\_cba/](https://careerswithstem.com.au/cybersecuritycareers_cba/)
  2. Kevin Mitnick- [https://en.wikipedia.org/wiki/Kevin\\_Mitnick](https://en.wikipedia.org/wiki/Kevin_Mitnick)
  3. **All Images** were found on google.com
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