Welcome

Let’s warm up

Given the code block:

```
a = ‘hello’
print(a)
```

Output:

‘hello’

Lets have it in English:

I want a container called ‘a’.

I will store ‘hello’ in this container.

I print it out use print(a)

print(‘whatever here’) prints something.

Let’s warm up

Given the code block:

```
for i in range(0,10):
    print(i)
```

Output:

0

2

..

..

9

Lets have it in English:

If I start counting from 0 till 9, it is equal to 10! (0,1,2,3,4,5,6,7,8,9) → 10 times!

Lets do a task 10 times.

Lets have a container called ‘i’

Lets set a condition to stop right before ‘i’ becomes 10.

Increase value of ‘i’ each time I do the task print(i)

Stop when condition is met

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Enough of codes?

Programs and Scripts makes life easy

C
C++
Python
Java
C# (C-Sharp)
Javascript
GoLang
WebAssembly
..
..

So what is CTF?

A capture the flag (CTF) contest is a special kind of cybersecurity competition designed to challenge its participants to ***solve computer security problems*** *and/or* ***capture and defend computer systems***. Typically, these competitions are team-based and attract a diverse range of participants, including students, enthusiasts and professionals. A CTF competition may take a few short hours, an entire day or even multiple days.

So what is CTF?

“solve computer security problems

and/or

capture and defend computer systems”

Types of CTF

Jeopardy

Attack and Defense

*They occur in online and offline platforms

Online CTF

- ctftime.org
- ctf.hackerfire.com
- Many more..

All of these are either time based (with fixed time period), or non-time based (without fixed time period)

Offline CTF

- Junior Defender Camp (JDC)
- CrossCTF
- Cyber Defenders Discovery Camp (CDDC)
- Cyber Sea Games 2017 (Bangkok)
- Singapore Cyber Conquest

All these are held at an actual site!

The Methodology

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Hunt the Flag

Once you have formed your method of approach, start finding ways to “solve the challenge”, which will eventually lead to your reward. THE FLAG.

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Flag Format

Fixed expression

Flag{th1s_is_y0ur_fl4g}
RTBC{r3member_m3}

Obvious ‘representation’

- ‘Hello there!’
- ‘Do not hard code password!’

OR they are usually defined by the CTF game rules.
All CTF describes its own definition.

So what happens?

Gain Points

Points will be awarded for correct flags.

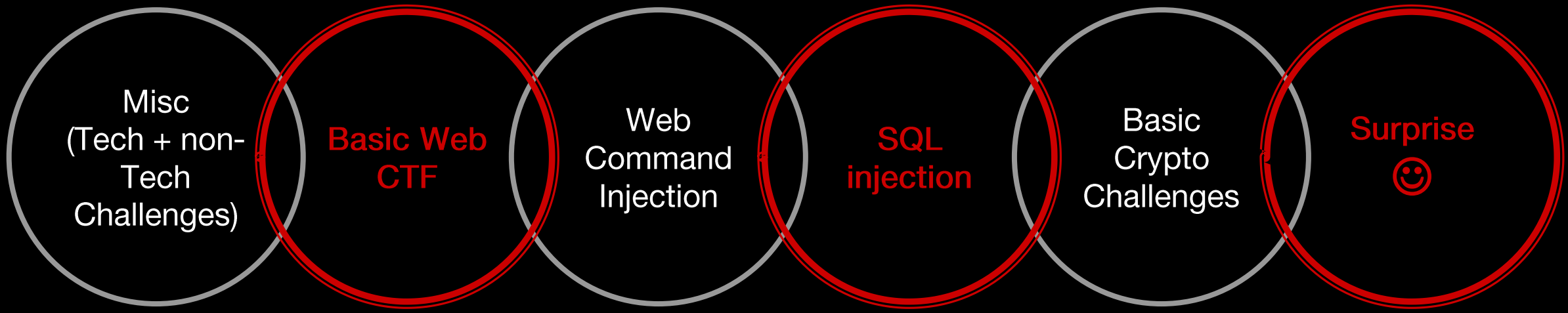
Scoreboard

Compete with other players who are playing the same CTF!

Do not worry if you are lower than the average players. Everybody got to start somewhere.

How Can I Get Started?

Topics Covered



Tools that we will be using

VMWare Player
This is to run Virtual Machines.

Wireshark
This is to analyze network packet captures.

A code editing tool
This is to code out custom python scripts to do a task for you.

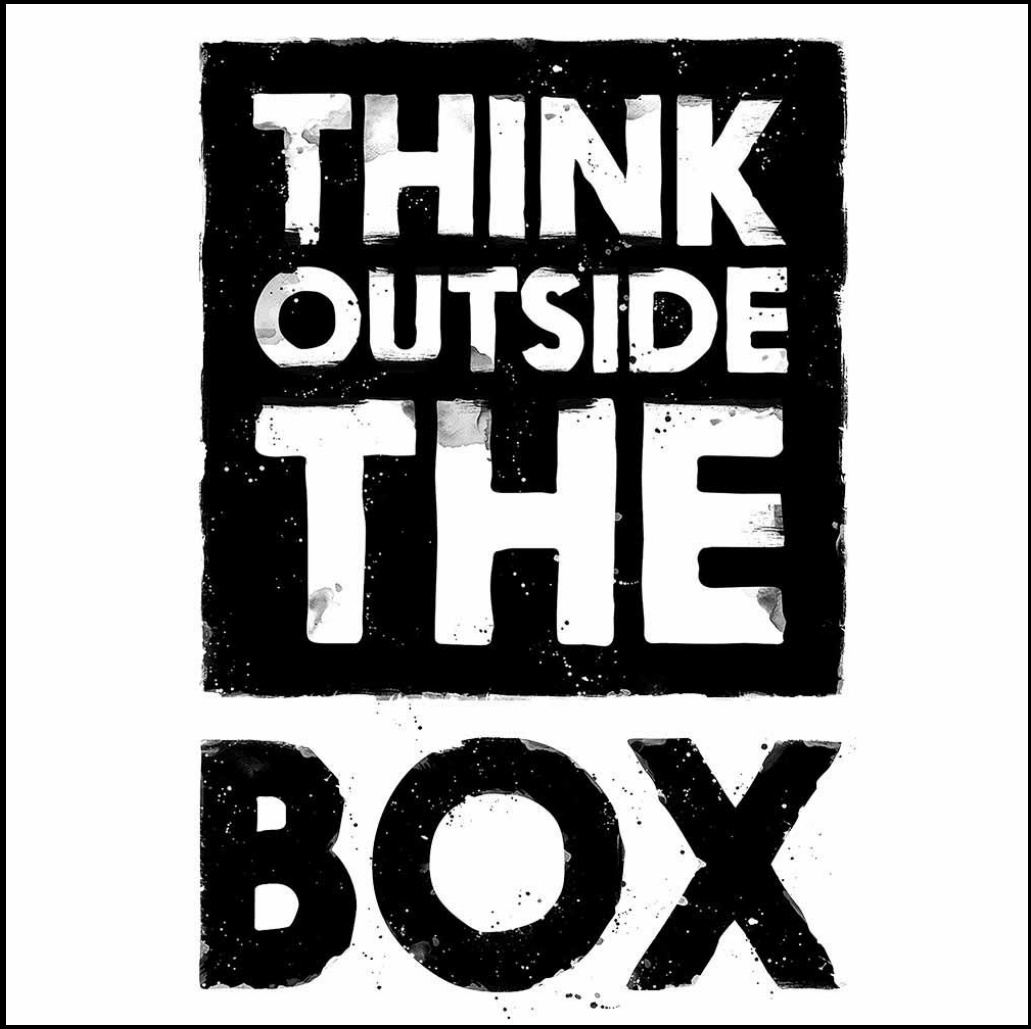
Google (A lot)
I don't need to explain this.

Kali / Ubuntu
Your best friend for the next few weeks. I will be using Ubuntu.

Some advice

Have you asked yourself the right questions?

Have google answered your questions?



TAKE A BREAK. YOU NEED A FRESH HEAD!

Ask and it shall be given.

Show and Tell

Some CTFs examples

Hands On

Some fun?

This week’s theme

Miscellaneous