

# Hacker Tools: Course Overview, Linux Install Fest, Virtual Machines

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# Where are we?

Introduction

Linux

Virtual Machine

Conclusion

# NUS Hackers



<http://nushackers.org>

hackerschool

Friday Hacks

Hack & Roll

Hacker Tools

# What is a Hacker?

A **hacker** is someone who strives to solve problems in elegant and ingenious ways.

Hack as in hackathon.

Read more at <https://www.nushackers.org/why/>

Examples: Richard Stallman, Linus Torvalds, Jamie Zawinski, Steve Wozniak, Ken Thompson, Dennis Ritchie

# Hacker Tools

Inspired by `https://hacker-tools.github.io/`,  
organised by SIPB at MIT.

Learn to make the most of the tools that hackers have  
been using for decades.

In this class, we'll help you learn how to make the most  
of tools that productive programmers use.

# Course Overview

Week	Date & Time, Venue	Topic
4	3/9/19 6.30pm, SR1	Linux Install Fest, Virtual Machine
5	10/9/19 6.30pm, SR10	Shell & Scripting
6	17/9/19 7pm, SR1	Command Line Environment
8	8/10/19 6.30pm, SR1	Data Wrangling
9	15/10/19 6.30pm, SR1	Web Browsers & Privacy
10	22/10/19 6pm, SR1	Editors (vim & emacs)
11	29/10/19 6.30pm, SR1	OS Customisation
12	5/11/19 6.30pm, SR1	$\text{\LaTeX}$

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# What is Linux?

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A Unix-like operating system kernel<sup>1</sup>.

The most popular kernel in the world!

Android, Chromebooks, most routers, most servers,  
supercomputers

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<sup>1</sup>The most fundamental part of an operating system – it is a bridge between other software running on the computer and the hardware



# What is Unix?

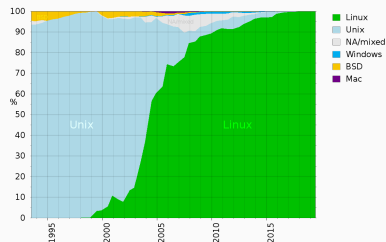
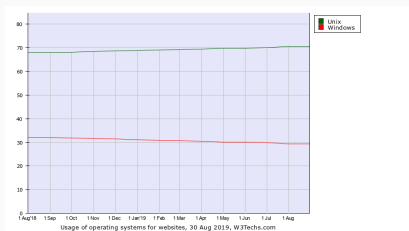
A family of multi-tasking, multi-user operating system, first released in 1973.

The first popular multi-user Windows was Windows 2000!

Examples: macOS, iOS, SunOS/Solaris, BSD, AIX, HP-UX

Most popular family of operating systems in the world!

# Most Popular OS Family in the world!



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# What is a VM?

Virtual machines are simulated computer.

You can configure a guest virtual machine with some operating system and configuration and use it without affecting your host environment.

# Why use a VM?

Experiment with operating systems, software, and configurations without risk.

For running software that only runs on a certain operating system.

For experimenting with potentially malicious software.

# Useful Features

## Isolation

Isolating the guest from the host, so you can use VMs to run buggy or untrusted software reasonably safely.

## Snapshots

Snapshots capture the entire machine state.

You can make changes to your machine, and then restore to an earlier state.

# Disadvantages

VMs are generally slower than running on bare metal.

May be unsuitable for certain applications, e.g. Games, High Performance Computing.

# Examples



Microsoft  
Hyper-V

vmware®





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# Why VirtualBox?



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# Talk to us!

- Feedback form:

[https://is.gd/hs2019\\_hackertools\\_1](https://is.gd/hs2019_hackertools_1)

- Upcoming hackerschool:

- Hackertools Part Two