

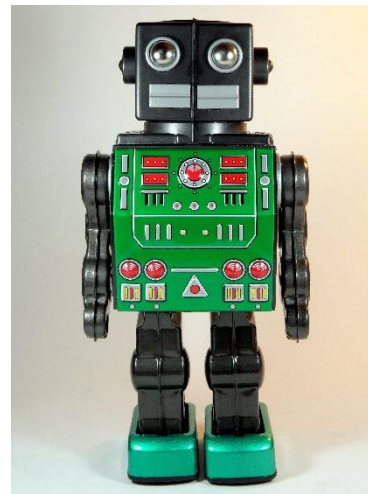
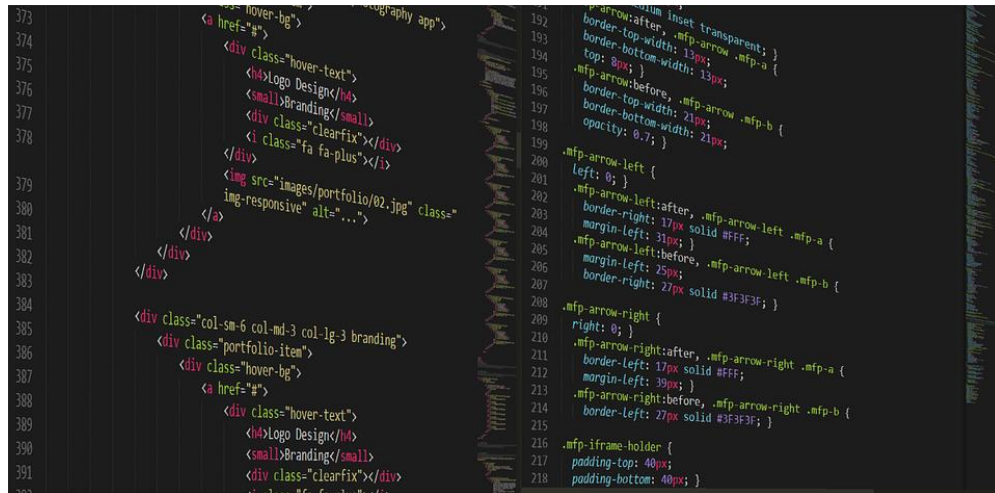
# C11: Social, Ethical, Legal and Economic Issues

Understand the importance of ethics in the conduct of Computing Professionals  
Be aware of the impact of Computing in different real-life situations.



# Introduction

## What is 'Computing'?



# Are these computing?



[https://www.vice.com/en\\_us/article/pgkgzv/nadia-the-robot-is-your-new-social-companion-Nadia-Thallman](https://www.vice.com/en_us/article/pgkgzv/nadia-the-robot-is-your-new-social-companion-Nadia-Thallman)



Computing is not purely a technological phenomena.

Computing is socio-technical.

It exists in many aspects of our lives and impacts our **lifestyle** and **workplace**.





**Computing is**



**the evolving variety of artifacts,  
and their socio-technical systems of  
manufacturing and use, for gathering,  
storing, retrieving, processing, analyzing  
and transmitting information.**



# Contents

**3.4.1 Understand the code of ethics (conduct) of a Computing professional.**

3.4.2 Describe the impact of computing on lifestyle and workplace for social and economic developments.

3.4.3 Discuss the social, ethical, legal and economic issues of computing and technology.



# The Ten Commandments of Computer Ethics

A popular interpretation created by US based Computer Ethics Institute (now defunct) in 1992

- ▶ Thou shalt not use a computer to harm other people.
- ▶ Thou shalt not interfere with other people's computer work.
- ▶ Thou shalt not snoop around in other people's computer files.
- ▶ Thou shalt not use a computer to steal.
- ▶ Thou shalt not use a computer to bear false witness.
- ▶ Thou shalt not copy or use proprietary software for which you have not paid (without permission).
- ▶ Thou shalt not use other people's computer resources without authorization or proper compensation.
- ▶ Thou shalt not appropriate other people's intellectual output.
- ▶ Thou shalt think about the social consequences of the program you are writing or the system you are designing.
- ▶ Thou shalt always use a computer in ways that ensure consideration and respect for other humans.



# How to study Ethics? How is it tested?

- ▶ Is it defined somewhere?
- ▶ Is it Objective? Subjective?
- ▶ How do I study it?
- ▶ Can I not follow?
- ▶ Are there correct/wrong answers?
- ▶ Can you enforce it?
- ▶ What is the use if it is not enforceable?





# International Context: IEEE Computer Society

- ▶ Non-profit international organization
- ▶ Largest organization of Computer Science and Engineering Experts and Leaders
- ▶ The premier source for information, inspiration, and collaboration in computer science and engineering.
- ▶ IEEE has a network of members worldwide (423,000)
- ▶ Delivering tools for individuals at all stages of their professional careers.
- ▶ International conferences, peer-reviewed publications, a robust digital library, globally recognized standards, and continuous learning opportunities.
- ▶ Eight Principles in their Code of Ethics:  
<https://www.computer.org/education/code-of-ethics>



# Singapore Computer Society

<https://www.scs.org.sg/>

## The Leading Professional Society

for infocomm and Digital Media in Singapore

- ▶ Membership base of over 42,000 members including industry professionals, leaders, students, and tech enthusiasts.
- ▶ Large community of 11 Chapters (computing fields) and 5 Special Interest Groups with leading practitioners in their chosen fields
- ▶ Publications, training and development, networking opportunities to support their members.
- ▶ Certification programmes
- ▶ 4 main categories in [Code-of-conduct](#)



# Singapore Computer Society Members Code of Conduct

## Integrity

SCS members will act at all times with integrity. They will:

- ▶ not lay claim to a level of competence that they do not possess
- ▶ act with complete discretion when entrusted with confidential information
- ▶ be impartial when giving advice and will disclose any relevant personal interests
- ▶ give credit for work done by others where credit is due



# Singapore Computer Society Members Code of Conduct

## Responsibility

SCS members will accept full responsibility for their work. They will:

- ▶ carry out their assignments in a professional manner
- ▶ adhere to their employers' or client's standards and guidelines
- ▶ indicate to their employers or clients the consequences to be expected if their professional judgement is overruled



# Singapore Computer Society Members Code of Conduct

## Competence

SCS members will always aim to increase their competence. They will:

- ▶ continue to upgrade their knowledge and skills, and be aware of relevant development in the technology they are involved in
- ▶ provide opportunity and encouragement for professional development and advancement to fellow professionals and aspirants to the profession
- ▶ extend public knowledge, understanding and appreciation of information technology and to oppose false or deceptive statements related to information technology of which they are aware



# Singapore Computer Society Members Code of Conduct

## Professionalism

SCS members will act with professionalism to enhance the prestige of the profession and the Society. They will:

- ▶ uphold and improve the professional standards of the Society through participation in their formulation, establishment and enforcement
- ▶ not seek personal advantage to the detriment of the Society
- ▶ not speak on behalf of the Society without proper authority
- ▶ not slander the professional reputation of any other person
- ▶ use their special knowledge and skill for the advancement of human welfare





# Must I follow the Code-Of-Conduct? Must I be ethical? Ethics is not law?

An employee can be terminated with cause if he or she intentionally acts dishonestly and where the conduct seriously harms the employer's interests or reputation, or where the conduct reveals an untrustworthy character, which undermines the position of responsibility.

The Code-Of-Conduct is necessary because \_\_\_\_\_



# Ethics ⇔ Code of Conduct ⇔ Law

BASIS FOR COMPARISON	LAW	ETHICS
Meaning	The law refers to a systematic body of rules that governs the whole society and the actions of its individual members.	Ethics is a branch of moral philosophy that guides people about the basic human conduct.
What is it?	Set of rules and regulations	Set of guidelines
Governed By	Government	Individual, Legal and Professional norms
Expression	Expressed and published in writing.	They are abstract.
Violation	Violation of law is not permissible which may result in punishment like imprisonment or fine or both.	There is no punishment for violation of ethics.
Objective	Law is created with an intent to maintain social order and peace in the society and provide protection to all the citizens.	Ethics are made to help people to decide what is right or wrong and how to act.
Binding	Law has a legal binding.	Ethics do not have a binding nature.



# From Ethics to Law

- ▶ Copyright and Patents Act  
<https://sso.agc.gov.sg/Act/CA1987>      <https://sso.agc.gov.sg/Act/PA1994>
- ▶ Computer Misuse Act:  
<https://sso.agc.gov.sg/Act/CMA1993>
- ▶ Personal Data and Protection Act  
<https://sso.agc.gov.sg/Act/PDPA2012>
- ▶ Protection from Harassment Act  
<https://sso.agc.gov.sg/Act/PHA2014>
- ▶ Cybersecurity Act  
<https://sso.agc.gov.sg/Acts-Supp/9-2018/>
- ▶ Protection from Online Falsehoods and Manipulation Act  
<https://sso.agc.gov.sg/Acts-Supp/18-2019>



# So, hacking is surely unethical and illegal?

What is a hacker?

- ▶ Popular belief: Cybercriminals harboring malicious intentions doing illegal acts. (black hat hacker)
- ▶ Someone who utilizes their computer software and hardware knowledge to break down and bypass a computer, device, or network's security measures.

So it is unethical/illegal?

- ▶ Not illegal/unethical if a system owner willingly and knowingly grants access. (e.g. Many private entities and government agencies hire hackers to help maintain their system's security.) (white hat hacker)

What is a grey hat hacker?



# Application: Hospital Technical Support Staff

Technical Support Staff (TSS) are required to maintain the computer network as well as perform weekly backups for the hospital. In the course of their job, they will have access to view data of some patients, to check that their work is done properly.

A hospital has asked you to draft a code of conduct for the TSS for them to conduct themselves ethically.

With reference to Singapore Computer Society's four areas of their code of conduct:

1. Integrity
2. Responsibility
3. Competence
4. Professionalism

give an example of a rule for each area, that TSS must abide by.  
Give examples of unethical behaviors that it is designed to prevent.

