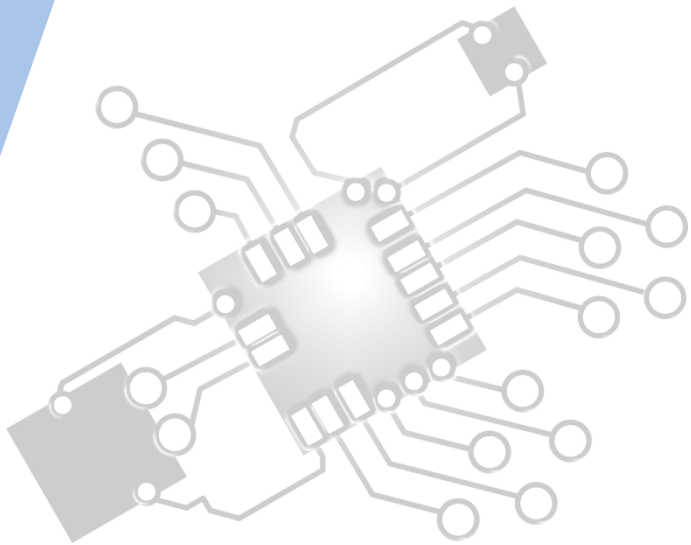
Objects as a programming concept

IB Computer Science



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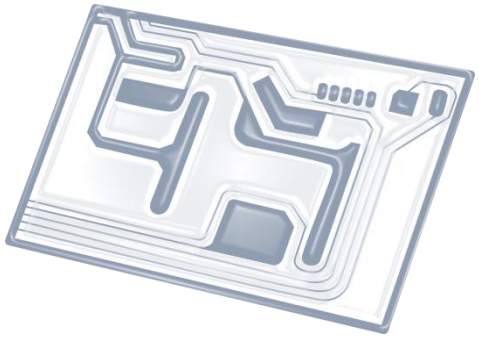
HL Topics 1-7, D1-4



1: System design

2: Computer Organisation

3: Networks

4: Computational thinking

5: Abstract data structures

6: Resource management

7: Control

D: OOP

HL & SL D.3 Overview

D.3 Program development

D.3.1 Define the terms: class, identifier, primitive, instance variable, parameter variable, local variable

D.3.2 Define the terms: method, accessor, mutator, constructor, signature, return value

D.3.3 Define the terms: private, protected, public, extends, static

D.3.4 Describe the uses of the primitive data types and the reference class string

D.3.5 Construct code to implement assessment statements

D.3.6 Construct code examples related to selection statements

D.3.7 Construct code examples related to repetition statements

D.3.8 Construct code examples related to static arrays

D.3.9 Discuss the features of modern programming languages that enable internationalization

D.3.10 Discuss the ethical and moral obligations of programmers

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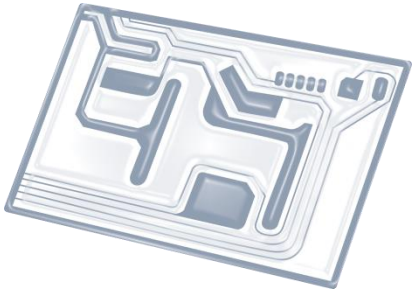


Topic D.3.10

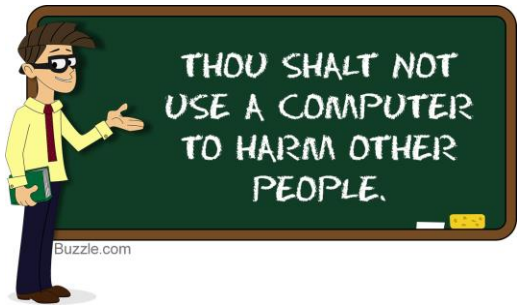
Discuss the **ethical** and **moral** **obligations** of programmers

What is an moral issue?

- A problem or is presented as any issue with the potential to **help** or harm anyone, including oneself.
- Examples of moral issues are:
  - Not testing a product that then fails and causes harm
  - Product failing and causing commercial harm
  - Stealing other programmers' work

What is an ethical issue?

- A problem or situation that requires a person or organization to choose between alternatives that must be evaluated as **right** (ethical) or **wrong** (unethical).
- Examples of ethical issues are:
  - Responsibility for computer failure
  - Protection of computer property, records and software



Open Source movement

- The open-source software movement is a movement that supports the use of **open-source licenses** for some or all software.
- The open-source movement was started to spread the concept/idea of open-source software.
- Programmers who support the open-source movement philosophy contribute to the open-source community by **voluntarily writing and exchanging programming code** for software development.

Examples of Open Source software

- Apache HTTP server
- The GIMP
- FireFox
- MySQL
- OpenOffice
- Libre Office
- Android
- WordPress
- VLC

Possible topics for discussion

- **Adequate testing** of products to prevent possibilities of commercial or other damage
- Acknowledging the work of other programmers (to avoid **plagiarism**)
- **Open Source** movement
- **Robotics** and **artificial intelligence**