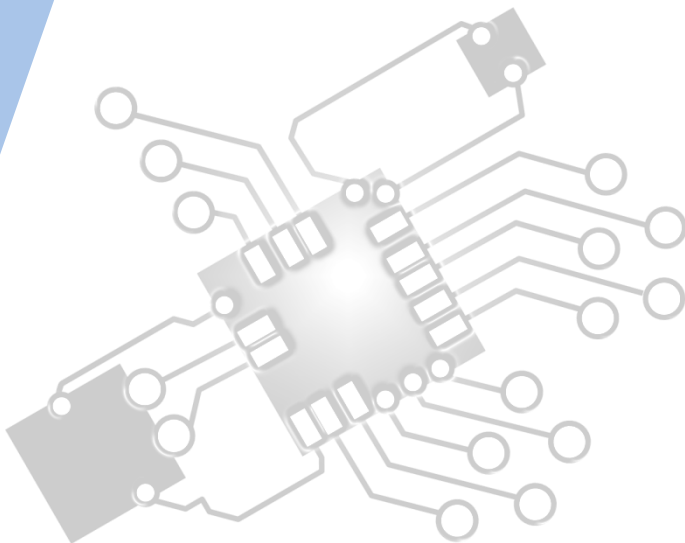




Control Systems

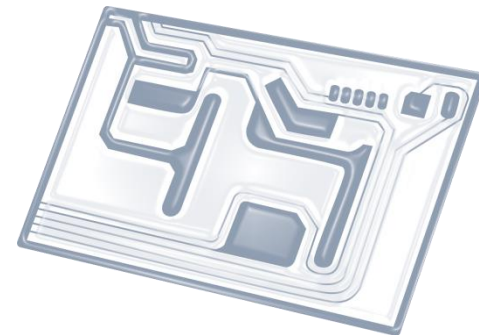
IB Computer Science



Content developed by
Dartford Grammar School
Computer Science Department



HL Topics 1-7, D1-4



1: System design



2: Computer Organisation



3: Networks



4: Computational thinking



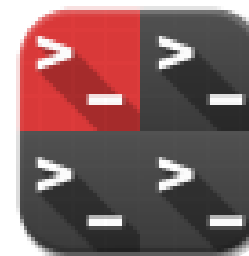
5: Abstract data structures



6: Resource management



7: Control



D: OOP

HL only 7 Overview

Centralized control systems

7.1.1 Discuss a range of control systems

7.1.2 Outline the uses of microprocessors and sensor input in control systems

7.1.3 Evaluate different input devices for the collection of data in specified situations

7.1.4 Explain the relationship between a sensor, the processor and an output transducer

7.1.5 Describe the role of feedback in a control system

7.1.6 Discuss the social impacts and ethical considerations associated with the use of embedded systems

Distributed systems

7.1.7 Compare a centrally controlled system with a distributed system

7.1.8 Outline the role of autonomous agents acting within a larger system



1: System design

2: Computer Organisation



3: Networks

4: Computational thinking



5: Abstract data structures

6: Resource management

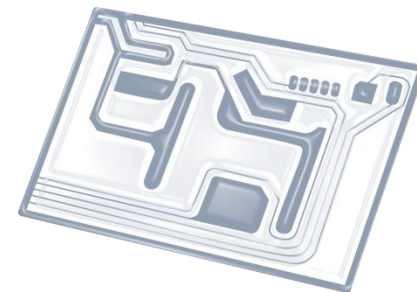


7: Control

D: OOP



Topic 7.1.6



Discuss the **social impacts** and **ethical considerations** associated with the use of **embedded systems**

Specifically: tagging prisoners, surveillance, CCTV, improved safety systems



Tagging prisoners



Arguments for:

- Allows non-dangerous criminals to move
- Reduces number of people needed to be in prison
- Allows for tracking at all times

Arguments against:

- Loss of freedom of movement
- Could possible be hacked to track innocent people
- Tracking data could be sold off to make money

Surveillance

Arguments for:

- Allows for greater security
- Could be used as effective evidence in court cases
- Allows fewer people to have monitor others



Arguments against:

- Loss of privacy
- Could be hacked and used for unintended purposes
- Could be used to spy on people (drones)

CCTV (closed circuit television)

The CCTV debate continues with arguments for and against its effectiveness.

By APSM on Apr 24, 2013 in CCTV, Security Products, TechTime

Role of CCTV Cameras : Public, Privacy and Protection

10 Reasons why public CCTV schemes are bad.

Click on headlines to read more