

ENGG1003 - Friday Week 1

Algorithms and Pseudocode

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Algorithms

- Informally, an *algorithm* is a series of steps which accomplishes a task
- More accurately, the steps (instructions) must:
 - Have a strict order
 - Be unambiguous
 - Be executable
- “Executable” means that the *target platform* is capable of performing that task.
 - eg: An industrial welding robot can execute “move welding tip 1 cm left”. A mobile phone can’t.

Algorithms

- An algorithm exists purely as an abstract concept until it is communicated
- We will use:
 - *Pseudocode* to communicate algorithms to ourselves and other people
 - The languages C and MATLAB to communicate algorithms to computers
- Pseudocode can be very formal, as engineers we will be pragmatic and ignore the formal rules

Columns

right side

left side

```
brenton@brenton-Lenovo-ideapad-5205-14IKB: /usr/share/hunspell
brenton@brenton-Lenovo-ideapad-5205-14IKB: /usr/share/hunspell 80x24
[99315.136594] usb 1-7: reset full-speed USB device number 3 using xhci_hcd
[99315.221586] ata1: SATA link up 6.0 Gbps (SStatus 133 SControl 300)
[99315.376562] usb 1-5: reset high-speed USB device number 2 using xhci_hcd
[99315.523947] OOM killer enabled.
[99315.523949] Restarting tasks ... done.
[99315.529326] PM: suspend exit
[99316.774373] [drm] AGC on
[99320.358150] ata1.00: qc timeout (cmd 0xec)
[99320.358172] ata1.00: failed to IDENTIFY (I/O error, err_mask=0x4)
[99320.358178] ata1.00: revalidation failed (errno=-5)
[99320.676561] ata1: SATA link up 6.0 Gbps (SStatus 133 SControl 300)
[99320.673416] ata1.00: configured for UDMA/133
[99320.846235] IPv6: ADDRCONF(NETDEV_UP): wlp2s0: link is not ready
[99321.595422] IPv6: ADDRCONF(NETDEV_UP): wlp2s0: link is not ready
[99321.644786] IPv6: ADDRCONF(NETDEV_UP): wlp2s0: link is not ready
[99326.549930] wlp2s0: authenticate with 48:9b:cd:28:a3:90
[99326.588140] wlp2s0: send auth to 48:9b:cd:28:a3:90 (try 1/3)
[99326.589777] wlp2s0: authenticated
[99326.591943] wlp2s0: associate with 48:9b:cd:28:a3:90 (try 1/3)
[99326.593543] wlp2s0: RX AssocResp from 48:9b:cd:28:a3:90 (capab=0x431 status=0
aid=1)
[99326.598823] wlp2s0: associated
[99326.605174] IPv6: ADDRCONF(NETDEV_CHANGE): wlp2s0: link becomes ready
brenton@brenton-Lenovo-ideapad-5205-14IKB: /usr/share/hunspell []
```

