

ENG20009

Engineering Technology Inquiry Project

Unit Convenor : Dr Rifai Chai
Email: rchai@swin.edu.au
Phone: 9214 8119
Office: EN606B

Swinburne University of Technology

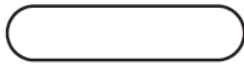
Seminar 2 – Arduino Programming – Flowcharts and Pseudocodes

Topics:

1. Flowchart
2. Examples
3. Pseudocode

1. Introduce Flowcharts

- A flowchart is a diagram that depicts a process, system or computer algorithm and use in the top-down design.
- A tool for developing and documenting algorithms



Terminator

Start or stop a sequence.
May contain module name.



Process

A step in the process or
computational algorithm



Data input

Information from outside of
the algorithm or process



Decision

Choose a flow path for continuing
the algorithm or process



Flow indicators

Connect other elements

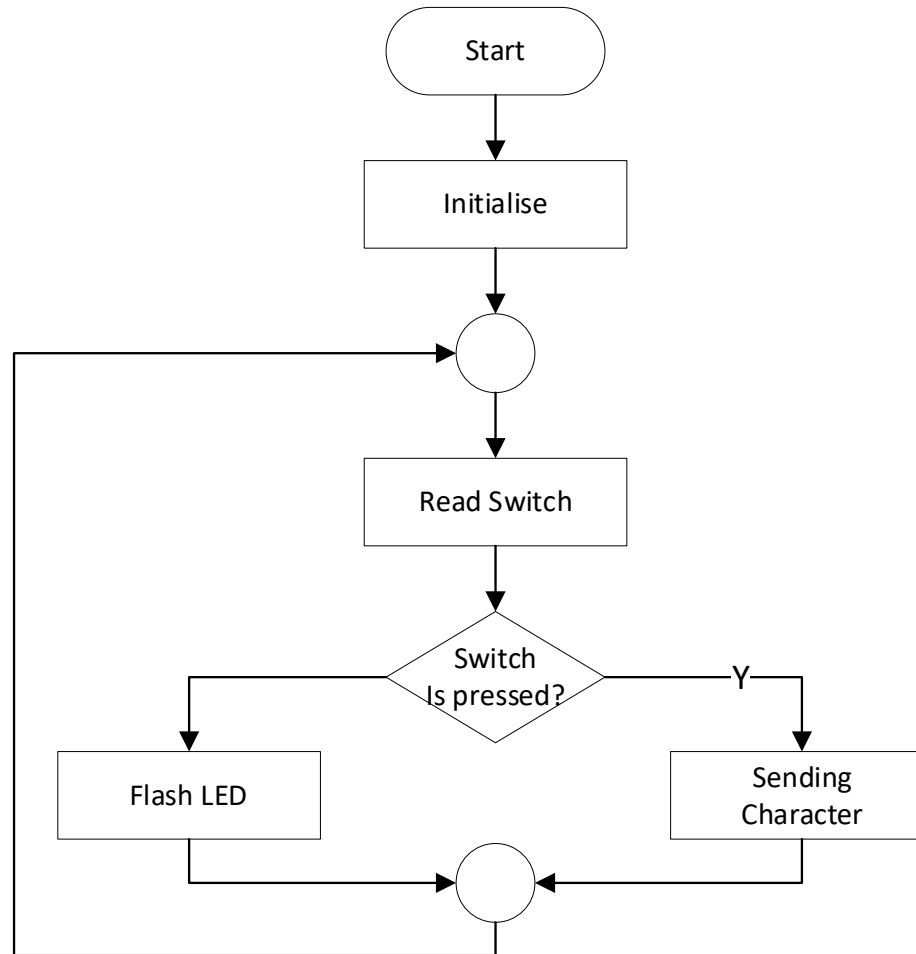


Connector or Junction

Optional joint where flow
indicators merge

2. Example 1

- Flowchart Keypress



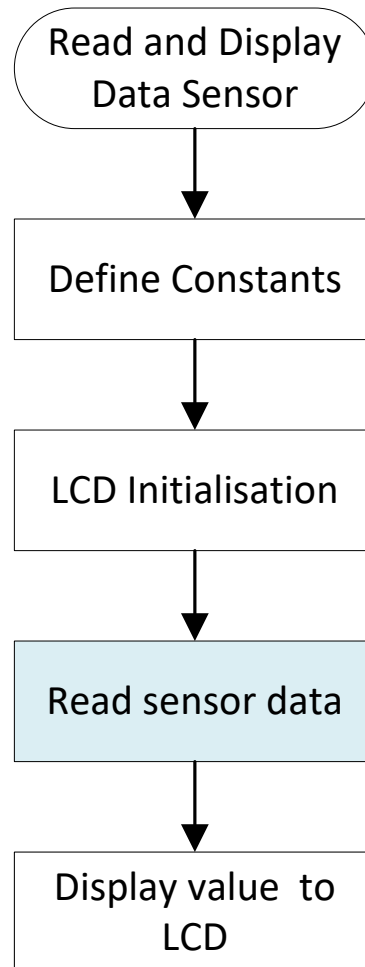
2. Example 1

- Pseudocode Keypress

```
setup() {  
  prepare arduino for input, output and  
  sending character  
}  
  
void loop() {  
  if switch is on {send character} else {flash  
  led}  
  
}
```

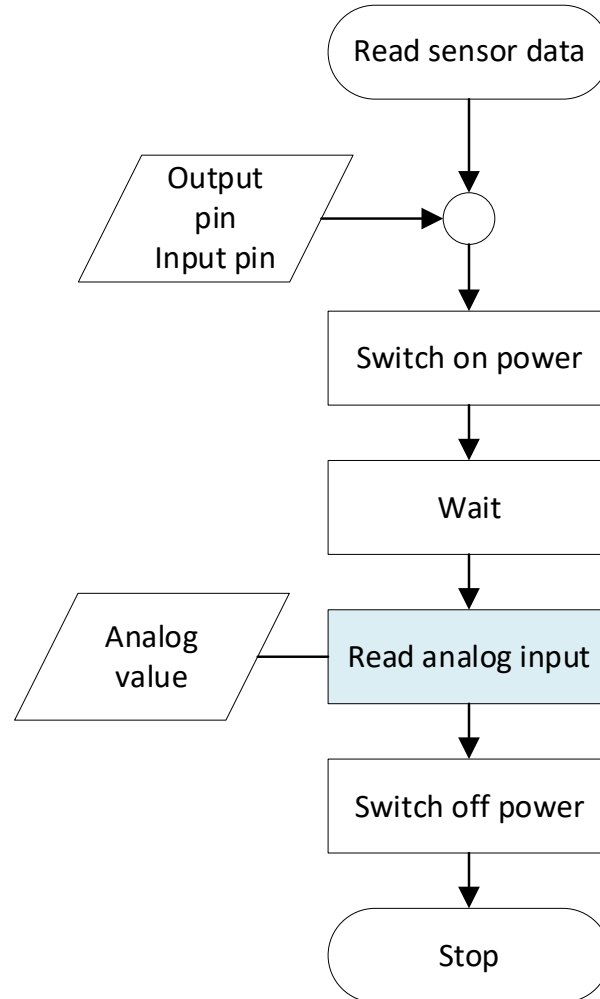
2. Example 2 – top down design

- Draw flowchart to read sensor data and display the average value on the LCD
- Step 1, describe high level actions



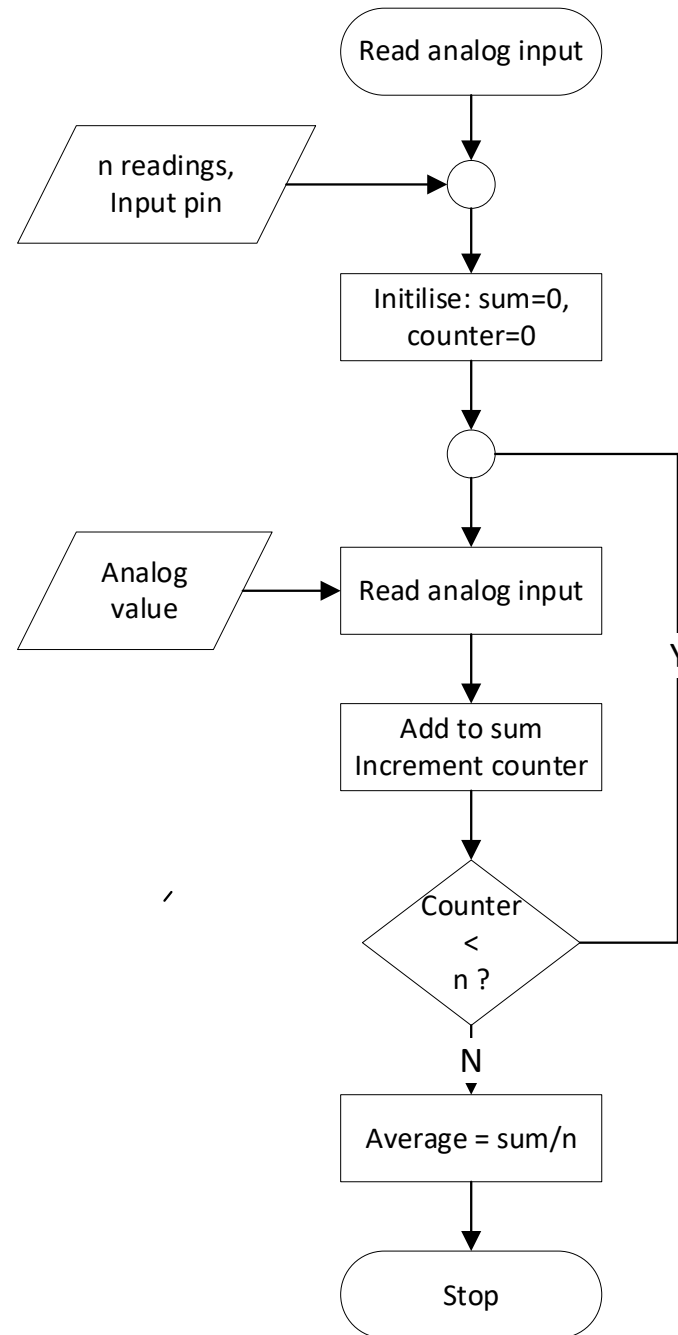
2. Example 2

- Step 2, refinement from general to specific



2. Example 2

- Step 3, refinement until individual tasks can be translated into concrete actions



Commonwealth of Australia
Copyright Act 1968

Notice for paragraph 135ZXA (a) of the *Copyright Act 1968*

Warning

This material has been reproduced and communicated to you by or on behalf of Swinburne University of Technology under Part VB of the *Copyright Act 1968* (the *Act*).

The material in this communication may be subject to copyright under the Act. Any further reproduction or communication of this material by you may be the subject of copyright protection under the Act.

Do not remove this notice.