

# Welcome to COMP20005 Workshops

When waiting:

- do social networking
- **open LMS and grok.**

Today's Plan:

- about us
- computers, problem, programming, C
- using grok for exercises 1.2, 2.8, 2.4 and more

# Workshops: Learning-By-Doing

in your own time

$$W = 1$$

Attend & Revise lectures of week  $W$

$$W = W + 1$$

- Prepare with **LMS** → **Weekly Schedule** → **Week  $W$**  → **Workshop**
- Learn from books, **ChatGPT**, **Gemini**, **Google...**

- Finish the outstanding tasks
- Check with the solutions provided

in workshop

Tute time:

- be active in discussions

5-minute break

Lab time:

- be cooperative
- ask questions or to tell something exiting
- raise your hand to summon me

# Your First Numerical Program

“program” Anh to solve the equations  $ax+b = 0$  for you

Suppose that Anh is a typical computer, capable of:

- inputting data (listening),
- outputting data (speaking),
- using short-term memory to store named data, and
- using CPU (brain) to carry all kind of arithmetic computations.

Your talk: teach (ie. “program”) Anh to solve the equations  $ax+b = 0$  for you

# Your program to solve $ax+b=0$ (step-by-step algorithm for Anh-a-computer)

Start

1. do ???

Stop

# A computer program

Problem:	<b>Solve equation <math>ax + b = 0</math></b>
Program:	<b>Start</b> input value for a and b; $x = -b/a$ ; output value of x; <b>End</b>
Memo:	A typical computer program has 3 sections: 1. inputting <i>data</i> 2. computing <i>solution</i> 3. outputting <i>solution</i>

Now: switch to [grok](#) and code the above program in C, using Playground

# Full C program: **equation.c**

	<pre>/* Solving equation ax + b = 0    Author: Anh Vo - <a href="mailto:avo@unimelb.edu.au">avo@unimelb.edu.au</a> ... */</pre>
Opening	<pre>#include &lt;stdio.h&gt; int main (int argc, char *argv[]) {</pre>
Declaring	<pre>    double a, b, x;</pre>
Inputting	<pre>    // inputs a and b     printf ("Enter value of a and b: ");     scanf ("%lf %lf", &amp;a, &amp;b);</pre>
Computing	<pre>    // to do: make sure that a != 0     // computes x as solution to ax+b= 0     x= -b/a;</pre>
Outputting	<pre>    // outputs result     printf ("Solution x= %lf\n", x);</pre>
Closing	<pre>    return 0; }</pre>

# Editing & Compiling Your Codes

**Method 1** (used in workshops): using `grok`

- ✓ great for the workshops, sufficed for the subject
- ✗ limited ability in programming.

**Method 2:** using `Visual Studio / jEdit + gcc` or equivalent tools

- ✓ powerful, helps to understand more, useful for assignments and big programs.

## Additional Homework This Week:

install `VSC/jEdit` and `gcc` in your laptop in your own time, following

`LMS` → `Modules` → `Working With Grok and Other C Programming Tools`

# 5-minute break



# Lab

Using **grok** to do **Ex 1.02, 2.08, 2.04**, then other exercises in **C02**

(if not yet done) Try `guessNumber.c` (downloaded from [github.com/anhvir/c205](https://github.com/anhvir/c205))

- Help your mates, and/or ask your mates for help.  
Make noise!
- Put your hand up to:
  - give Anh questions, or
  - tell Anh that you discover something funny, or exciting

# Important Homework

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1. If you haven't installed **Visual Studio Code/jEdit** on your laptop, do it at home ASAP and within this week. Instruction for installation is available in LMS: **LMS --> Modules --> Working With Grok and ... --> Install gcc and Visual Studio on Your Own Computer**
2. Remember: **grok** is a web interface, and you cannot use it offline. In addition, **grok** probably does not support full functionality of a programming environment. As a professional, you'd better to also have **VSC/gcc** . Install them today!

# Time for fun

Goto [github.com/anhvir/c205](https://github.com/anhvir/c205) then:

- Click on [guessNumber.c](#), then [Raw](#)
- Copy the content (**Ctrl-A** then **Ctrl-C**)
- Paste to [PlayGround](#) of [grok](#)
- Try [Run](#)

Try to modify the program, for example by

- changing "[Anh](#)" to your name, and
- changing [MAX](#) from [10](#) to [5](#) or something else.

# Remember

Finish outstanding exercises by Saturday

Stay safe, stay active, stay happy!

Use `LMS`, `grok`, and `...`

Variables: names, data types, values

Input with `printf` and `scanf`, output with `printf`

Data types and respective formats for `printf`, `scanf`:

type	int	float	double	char	<i>string</i>
printf format	<code>%d</code>	<code>%f</code>	<code>%lf</code>	<code>%c</code>	<code>%s</code>
scanf format	<code>%d</code>	<code>%f</code>	<code>%lf</code>	<code>%c</code>	<code>%s</code>
scanf for <b>v</b>	<code>&amp;v</code>	<code>&amp;v</code>	<code>&amp;v</code>	<code>&amp;v</code>	<code>v</code>

*Programming is fun!*