Welcome to COMP20005 Workshops

When waiting:

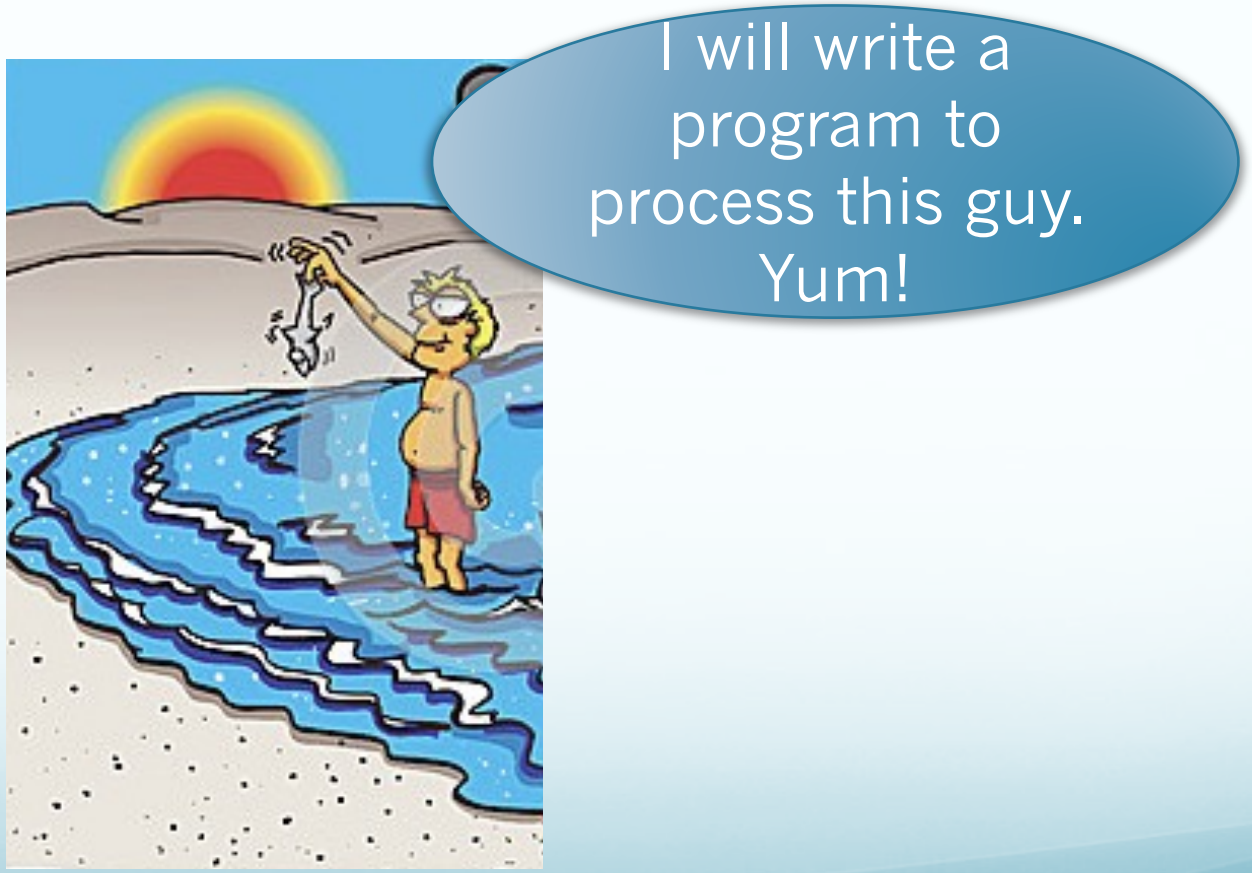
- do social networking, and
- **open `LMS` and `grok`.**

Today's Plan:

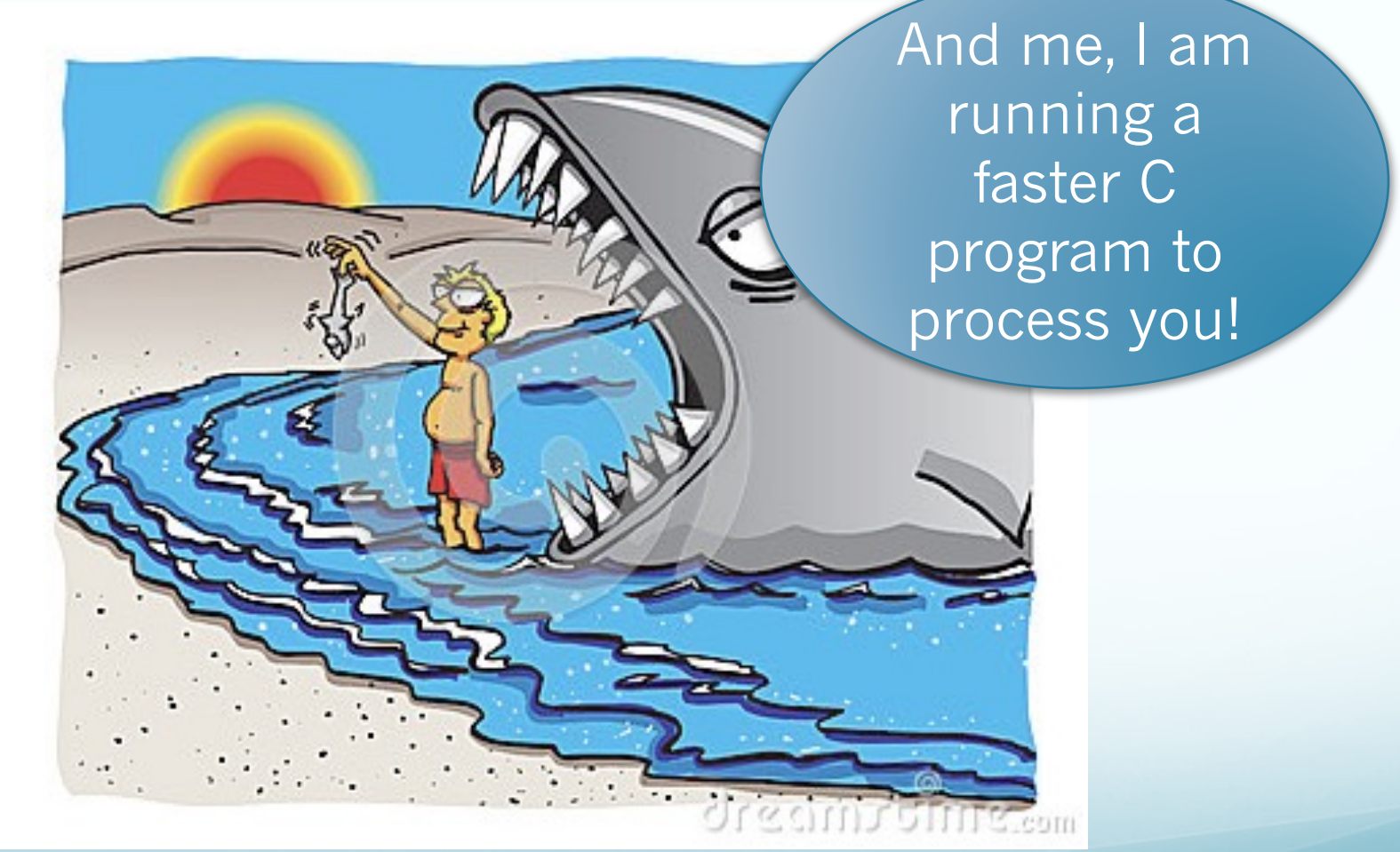
- computers, problem, programming, C
- 10-min break: stretch exercises, networking
- using grok for exercises 1.2, 2.8, 2.4 and more

Greetings from Anh Vo (aka. Vo Ngoc Anh)

email avo@unimelb.edu.au ,
subject starting with “COMP20005” or just “C205”



Greetings from Anh Vo (aka. avo)



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`**, **`Google...`**

- Finish the outstanding tasks
- Check with the solutions provided

in workshop

Tute time:
- be active in discussions

5 minutes: networking

Lab time:
- be cooperative
- raise hand to ask questions or to tell something exiting

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:	**Solve equation ax + b = 0**

Program:	**Start**
	`input value for a and b;`
	`x= -b/a;`
	`output value of x;`
	End

Memo:	A typical computer program has 3 sections: 1. inputting *data* 2. computing *solution* 3. outputting *solution*

Now: switch to `grok` and code the above program in C, using Playground

	`/* Solving equation ax + b = 0`
	`Author: Anh Vo - avo@unimelb.edu.au`
	`Last updated: 07 Mar 2023 */`

Opening	`#include <stdio.h>` `int main (int argc, char *agrv[]) {`
Declaring	`double a, b, x;`

Inputting	`// inputs a and b`
	`printf (”Enter value of a and b: ");`
	`scanf(”%lf %lf", &a, &b);`

Computing	`// to do: make sure that a != 0`
	`// computes x as solution to ax+b= 0`
	`x= -b/a;`

Outputting	`// outputs result` `printf("Solution x= %lf\n", x);`
Closing	`return 0;` `}`

Why comments and indentation? Programs are not just for computers to execute, but also for people to read, understand, and make changes.

Editing & Compiling Your Codes

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

- ✔ great for the workshops
- ✖ limited ability in programming, you won't learn much.

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

10-minute break

stress exercises

social networking

Time for fun

Goto **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.

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`)

- 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

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!

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	*string*
printf format	%d	%f	%lf	%c	%s
scanf format	%d	%f	%lf	%c	%s
scanf for **v**	&v	&v	&v	&v	v

Programming is fun!